

CHAPTER I

AN OVERVIEW OF PAST PLANNED DEVELOPMENT

1.1 Macro Economic and Social Development

1.1.1 Bangladesh has had two and a half decades of development efforts at lifting the economy out of its abject poverty. The country has followed the course of planned development since 1973. In a medium term framework, the First Five Year Plan was launched in July 1973. This was followed by a Two Year Plan (1978-80) in the background of world-wide inflation and uncertainties. In 1980, the five year plan framework was reinstated and since then three five year plans were implemented in succession. There was no development plan during 1995-97 after the expiry of the Fourth Plan (1990-95). Every plan targeted at an average annual GDP growth rate of above 5 per cent but achieved about 4 per cent. In spite of large inflow of foreign assistance to augment meagre domestic resources, the planned effort for development has not been able to free the economy from the low growth trap. Almost half of the population of Bangladesh still continues to eke out an existence below poverty line with very little access to the basic amenities of life.

1.1.2 Planned development has been frustrated by a number of factors. First, political instability loomed large over most of these years since independence though a semblance of elected government was maintained. It was in the nature of thing that the absence of a truly representative government led to political turmoil adversely affecting development process. Worse still was the private agenda that the lack of public accountability bred indiscriminately. This not only added fat to projects but as said, gift horses also failed to earn their hay. Secondly, foreign aid flow and its modality affected the development effort. Although Bangladesh received generous aid, its level was not adequate to mount the investment programmes which the successive Plans envisaged. Even in that year (1989/90) when aid flow (disbursement) reached its peak (\$ 1.8 billion) investment/GDP ratio was 12.80 per cent only, still one of the lowest in the south-east Asian region. Nor was aid flow steady; it appears to have reached its plateau at around \$ 1.4 billion at constant market prices of 1984/85. At such prices average annual inflow of foreign aid during the Second Plan was lower than that in 1979/80 and steadily declined in real terms (at 1984/85 import prices) after the flood year of 1987/88 when aid flow was \$ 1.59 billion. The modality of aid has also drastically changed with the gradual withering of commodity aid which used to generate counterpart fund for local currency financing of projects, and commitment of counterpart fund of food aid to selective projects. Thirdly, the development process has been disrupted by frequent occurrences of natural disasters like flood, cyclone and drought. They not only pre-empted scarce resources for relief work and rehabilitation but also sapped saving and investment habit, particularly in the agriculture sector due to high risk. All these compounded to frustrate planned development with shortfalls in investment and output. The planned outlay and GDP growth targets with their actuals of the successive Plans are shown in Table 1.1.

Table 1.1
Plan Size Actual Expenditure and GDP Growth Rate of Past Plans
(at respective base year prices)

(in million Taka)

Plan	Plan Size			Estimated Actual Expenditure			Growth Target (%)	Realised Growth (%)
	Total	Public	Private	Total	Public	Private		
1	2	3	4	5	6	7	8	9
First Five Year Plan	44,550	39,520	5,030	20,740	16,350	4,390	5.50	4.00
Two Year Plan	38,610	32,610	6,000	33,590	24,020	9,570	5.60	3.50
Second Five Year Plan	172,000	111,000	61,000	152,970	103,280	49,690	5.40	3.80
Third Five Year Plan	386,000	250,000	136,000	270,110	171,290	98,820	5.40	3.80
Fourth Five Year Plan	620,000	347,000	273,000	598,480	274,083	324,397	5.00	4.15

1.2 Review of Fourth Five Year Plan (1990-95)

1.2.1 The Fourth Five Year Plan (1990-95) was launched in July, 1990, but the draft Plan had to undergo several revisions before it was formally approved by the government in June, 1995. The Plan outlay was reduced from Tk.689.30 billion to Tk.620 billion. The Plan placed emphasis on poverty alleviation and meeting the basic needs of the people with particular focus on human resources development, women in development and environmental sustainability. The main objectives of the Plan were: (a) accelerating economic growth to achieve an overall annual GDP growth rate of 5 per cent, (b) poverty alleviation and employment generation through human resources development and (c) increased self-reliance.

1.2.2 The allocation for the public sector was Tk.347 billion (56%) while that for the private sector was Tk.273 billion (44%). The share of the private sector was kept higher than that in the Third Plan (35%) and the Second Plan (16%) in view of expanding market economy and public resource constraint. To meet the resource requirements, the Plan aimed at raising domestic saving rate to an average of 8.60 per cent to achieve an investment rate of 14.80 per cent and tax/GDP ratio of 9.30 per cent in the terminal year of the Plan.

1.2.3 Growth performance: The average annual growth rate during the Fourth Plan period was 4.15 per cent against the Plan target of 5 per cent. The low growth was due to almost stagnant agricultural production. The growth of the sector was only 0.98 per cent compared with the Plan target of 3.42 per cent. Agricultural growth suffered due to problem with fertiliser distribution and lack of adequate public procurement of foodgrain at support prices. The manufacturing sector showed a modest growth rate of 7.05 per cent against the target of 9.02 per cent. The energy sector, however, accounted for an accelerated growth rate of 15.31 per cent while its target was 9.28 per cent. The public services sector showed some shortfall in attaining the growth target. The housing and other services, however, had marginally higher growth rates. The sectoral growth targets and achievements of the Fourth Plan along with GDP are given in Table 1.2.

1.2.4 Changes in economic structure: There was a marked change in the structure of the economy in the Fourth Plan period. The shares of the manufacturing and services sectors went up further and the share of agriculture declined in line with its historical trend (Table 1.3). The share of the agricultural sector went down to 32.77 per cent in 1994/95 from 41.77 per cent in 1984/85. In spite of these shifts, the economy continued to be dominated by agriculture; so it remained susceptible to natural hazards.

Table 1.2
GDP Composition and Growth Rate During Fourth Plan Period
(at 1984/85 prices)

(in million Taka)

Sector	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	Annual Growth Rate (%)	
							Target	Achievement
1	2	3	4	5	6	7	8	9
Agriculture	190,354	193,421	197,662	201,230	201,915	199,822	3.42	0.98
Industry	49,322	50,503	54,211	59,140	63,786	69,302	9.02	7.05
Electricity, Gas and Natural Resources	5,561	6,704	7,876	8,933	10,184	11,339	9.28	15.31
Construction	29,749	31,087	32,471	34,032	36,074	38,593	5.86	5.34
Transport and Communication	59,024	60,840	63,349	66,416	70,089	74,203	5.39	4.68
Trade and Other Services	105,124	110,237	115,780	122,041	129,516	140,115	5.00	5.92
Housing	38,030	39,316	40,656	42,187	43,792	45,457	3.62	3.63
Public Services	20,363	22,334	24,184	26,240	28,484	30,962	10.65	8.74
Total GDP	497,527	514,442	536,189	560,219	583,840	609,793	5.00	4.15

Table 1.3
Structural Change in Economy (1984-95)

(in per cent)

Sector	Composition of GDP (at 1984/85 prices)			Contribution to Incremental GDP	
	1984/85	1989/90	1994/95	Third Plan	Fourth Plan
1	2	3	4	5	6
Agriculture	41.77	38.27	32.77	22.50	8.43
Industry	9.86	9.91	11.36	10.16	17.80
Electricity, Gas and Natural Resources	0.58	1.12	1.86	3.55	5.15
Construction	5.53	5.98	6.33	7.98	7.88
Transport and Communication	11.22	11.86	12.17	14.76	13.51
Trade and Other Services	19.82	21.13	22.98	27.01	31.17
Housing Services	7.97	7.64	7.45	6.17	6.62
Public services	3.25	4.09	5.08	7.87	9.44
Total	100.00	100.00	100.00	100.00	100.00

Source: BBS

1.2.5 Savings and investment: Historically, the levels of aggregate savings and investment have been very low in Bangladesh. However, there have been some improvements in domestic savings and investment rates during the Fourth Plan period. Domestic savings as a ratio of GDP increased from 2.72 per cent in 1989/90 to 8.31 per cent in 1994/95. The increased savings rate was due to higher savings by the government as well as by the private sector.

1.2.6 The level of investment in the economy of Bangladesh is low compared to that in many developing countries. The rate of aggregate investment in 1990/91 was 11.50 per cent which rose to 16.63 per cent in 1994/95. This exceeded the Plan target of 14.80 per cent. This rising trend is a positive development in resource mobilisation for faster economic growth and socio-economic upliftment. In this period, the relative share of private investment rose while that of the public sector declined. This reflects the reorientation of the Bangladesh economy towards the private sector.

1.2.7 Public sector outlay: Annual phasing of public sector outlay at 1989/90 prices and ADP allocation and achievement during the Fourth Plan are given in Table 1.4. The increase in ADP size was due to the inclusion of certain lumpy projects such as the Bangabandhu (Jamuna) Bridge, Madhyapara Hard-rock and Barapukuria Coal Development projects.

Increased investment in education, particularly in primary and mass education, stipend for female students, food for education and rapidly enhanced investment in rural roads, electrification, water supply etc., also necessitated significantly higher resource deployment in the public sector.

Table 1.4
Public Sector Outlay and Realisation During Fourth Plan
(at 1989/90 prices)

(in million Taka)

Year	Plan Allocation	ADP Size		% Realisation over	
		Revised	Realised	RADP Allocation	Plan Allocation
1	2	3	4	5	6
1990/91	48,390	56,954	49,042	86	101
1991/92	55,070	63,475	53,480	84	97
1992/93	70,110	69,642	56,170	81	80
1993/94	82,700	81,175	75,976	94	98
1994/95	90,730	94,998	87,772	92	97
Total	347,000	366,244	322,440	88	93

Note: Used Investment Deflator

1.2.8 Sectoral allocation: The sectoral allocations of the public sector outlay of Tk.347 billion at 1989/90 prices and expenditures are given in Table 1.5. Total financial achievement was 92.93 percent of the Plan allocation. The transport sector including Bangabandhu

Table 1.5
Public Sector Allocation and Expenditure During Fourth Plan
(at 1989/90 prices)

(in million Taka)

Sector	Allocation	% Share	Realised Expenditure	% Share	Financial Achievement as % of Plan Allocation
1	2	3	4	5	6
Agriculture	23,260	6.70	18,820	5.84	80.91
Rural Development and Institutions	16,500	4.76	17,930	5.56	108.67
Water Resources	38,290	11.03	26,730	8.29	69.81
Industry	16,840	4.85	5,030	1.56	29.87
Power	45,360	13.07	41,880	12.99	92.33
Oil, Gas and Natural Resources	23,980	6.91	15,320	4.75	63.89
Transport	46,530	13.41	51,260	15.90	110.17
Communication	6,520	1.88	12,130	3.76	186.04
Physical Planning and Water Supply	18,420	5.31	13,780	4.27	74.81
Education and Religious Affairs	26,580	7.66	29,050	9.00	109.29
Sports and Culture	1,460	0.42	1,510	0.47	103.42
Health	10,600	3.05	9,830	3.05	92.73
Family Welfare	15,980	4.61	15,160	4.70	94.87
Mass Media	1,230	0.36	1,190	0.37	96.75
Social Welfare, Women Affairs and Youth Development	2,350	0.68	2,020	0.63	85.96
Public Administration	2,010	0.58	710	0.22	35.32
Science and Technology	540	0.16	490	0.15	90.74
Labour and Manpower	850	0.24	180	0.06	21.18
Others	49,700	14.32	59,420	18.43	119.58
Total	347,000	100.00	322,440	100.00	92.93

(Jamuna) Bridge accounted for the largest chunk (15.90%) of the expenditure which exceeded the share envisaged in the Fourth Plan. The power sector was the second highest recipient claiming 13 per cent of the expenditure. The social sector received higher emphasis

compared to the original allocation. The education sector's share in the ADP expenditure appreciably increased to about 9 per cent as against 7.66 per cent earmarked in the Plan. Other social sectors (except Labour and Manpower) also showed higher realised expenditure compared to the planned outlay.

1.2.9 Public sector financing: As regards financing of the planned public sector outlay of Tk.347 billion, an amount of Tk.119 billion (34.29%) was to come from domestic resources and Tk.228 billion (65.71%) from external resources. Table 1.6 shows the actual amount of expenditure at current prices during 1990/91-94/95 made through the ADPs and the contribution of the government thereto.

Table 1.6
ADP Allocation and Government Contribution During Fourth Plan
(at current prices)

(in million Taka)

Fiscal Year	Total ADP Allocation	Government Contribution	% of Total Allocation
1	2	3	4
1990/91	61,210	12,980	21.21
1991/92	71,500	17,870	25.00
1992/93	81,210	20,530	25.28
1993/94	96,000	34,400	35.83
1994/95	111,500	47,980	43.03

1.2.10 The domestic resource share in public sector financing was below the planned projection (34.29%) during the first three years of the Plan. The share picked up during the last two years of the Plan rising to 35.83 per cent in 1993/94 and to about 43 per cent in 1994/95, but on average, there was a shortfall; together with lower aid inflow, it resulted in a lower development expenditure in the public sector than planned.

1.2.11 There was a significant improvement in tax collection due to the introduction of VAT during the Fourth Plan period. Domestic resource generation amounted to Tk.158.92 billion at 1989/90 prices. This exceeded the Plan target of Tk.119 billion by 33.55 per cent. Total revenue receipts during the Fourth Plan period was Tk.471.57 billion against the target of Tk.457.9 billion. Out of the total revenue receipts, tax revenue was Tk.379.48 billion and non-tax revenue was Tk.92.09 billion. Total revenue receipts increased at an average annual rate of about 10.00 per cent at 1989/90 prices. Tax revenue and non-tax revenue grew at the average annual rates of about 8.76 per cent and 16.15 per cent respectively. Tax/GDP ratio increased to 9.71 per cent in 1994/95 exceeding the Plan target of 9.30 per cent. In spite of this, there was shortfall in public development outlay as revenue expenditures were more than planned.

1.2.12 Implementation: During the early years of the Fourth Plan, implementation of ADP posed to be a major challenge as development programmes/projects involving large expenditures for the rapid socio-economic development of the country were launched. Over the Plan period, shortfall in ADP implementation was a matter of grave concern for the government. Reforms of project execution process in terms of delegation of authority to the project directors, reinforcement of the review and monitoring process, reallocation of developmental resources from the slow-moving to the fast-moving projects through objective review exercises and gearing up of the project approval process were identified as necessary steps for improvement of implementation of ADP. Through adoption of some of these

corrective measures, the rate of ADP utilisation picked up appreciably from 1993/94 and the process of improvement was more or less sustained during the remaining period of the Fourth Plan.

1.2.13 Private investment: An amount of Tk.273 billion was earmarked for the private sector in the Fourth Plan. This was about 44 per cent of the total Plan allocation. The annual phasing of the Fourth Plan projection by sectors is shown in Table 1.7.

Table 1.7
Projected Private Investment During Fourth Plan
(at 1989/90 prices)

(in million Taka)

Sector/Year	1989/90 (Benchmark)	1990/91	1991/92	1992/93	1993/94	1994/95	Total (1990-95)
1	2	3	4	5	6	7	8
Agriculture	6,500	6,150	6,130	6,950	8,050	9,500	36,780
Industry	4,500	5,360	6,340	7,900	10,500	14,100	44,200
Housing and Construction	7,000	9,560	6,810	7,500	8,440	9,750	42,060
Transport and Communication	5,300	5,910	5,880	7,150	8,750	11,400	39,090
Trade and Other Services	7,000	7,160	16,210	21,450	28,400	37,650	110,870
Total	30,300	34,140	41,370	50,950	64,140	82,400	273,000

1.2.14 A significant acceleration of private investment was envisaged during the Plan period (1990-95). Private investment was expected to rise from Tk.30.30 billion in 1989/90 to Tk.82.40 billion in 1994/95 giving an average annual growth of 22.20 per cent. The estimate of realised private investment at current prices is shown in Table 1.8.

Table 1.8
Realised Private Investment During Fourth Plan
(at current prices)

(in million Taka)

Sector	Plan Allocation (1989/90 prices)	Realised Investment				
		1990/91	1991/92	1992/93	1993/94	1994/95
1	2	3	4	5	6	7
Agriculture	36,780	4,194	7,468	8,316	9,616	10,431
Industry	44,200	15,084	19,361	23,079	23,552	32,972
Housing and Construction	42,060	6,770	8,168	10,724	12,859	18,668
Transport and Communication	39,090	5,514	5,861	6,592	6,914	12,267
Trade and Other Services	110,870	17,000	19,205	25,695	27,735	35,844
Total	273,000	48,562	60,063	74,406	80,676	110,182

1.2.15 At the sectoral level, the performance of industry was affected in the closing years of the Plan due to political unrests; yet its share in total private investment rose from 14.85 per cent in 1989/90 to 29.92 per cent in 1994/95. In real terms (at 1989/90 prices), industrial investment (private) was more than double the planned target (Table 1.9).

Table 1.9
Realised Private Investment During Fourth Plan
(at 1989/90 Prices)

(in million Taka)

Sector/Year	1989/ 90 (Actual)	1990/ 91	1991/ 92	1992/ 93	1993/ 94	1994/ 95	Total (1990-95)	Plan Allocation	Percentage Attainment over Plan Allocation
1	2	3	4	5	6	7	8	9	10
Agriculture	6,500	3,902	6,630	7,131	8,131	8,887	34,681	36,780	94
Industry	4,500	14,035	17,188	19,792	19,915	28,092	99,022	44,200	224
Housing and Construction	7,000	6,299	7,252	9,196	10,873	15,897	49,517	42,060	118
Transport and Communication	5,300	5,131	5,203	5,653	5,846	10,451	32,284	39,090	83
Trade and Other Services	7,000	15,818	17,049	22,035	23,452	30,539	108,893	110,870	98
Total	30,300	45,185	53,322	63,807	68,217	93,866	324,397	273,000	119

1.2.16 It can be seen from Tables 1.7 and 1.9 that realised total private investment in the successive years from 1990/91 through 1994/95 during the Fourth Plan period was higher than the targeted private investment. It grew at an annual average rate of 25.40 percent. There were, however, some shortfalls in agriculture, transport and communication, and in trade and service sectors.

1.2.17 Balance of payments and external resources: The country enjoyed a relatively comfortable balance of payments position during the first four years of the Fourth Plan. A continued higher growth of exports and remittances *vis-a-vis* a sharp decline in imports during 1990/91 and 1991/92 and a slow growth during the following two years helped contain the balances of trade and payments and keep them below their benchmark levels during the period. The balance of payments situation, however, worsened in the terminal year of the Plan, largely because imports recovered substantially from the unusually low levels.

1.2.18 Preliminary estimates indicate that aggregate imports, exports and remittances during the Plan period were 99.34 per cent, 96.29 per cent and 99.31 per cent of their projected totals respectively. The share of imports financed through exports was 53.85 per cent in 1994/95 compared with 55.21 per cent expected in the Plan. As a result, the current account deficit overshoot the target by 10.12 per cent. There was a shortfall of around 10 per cent in aid disbursements also.

1.2.19 Imports: Total imports grew at an annual rate of 6.14 per cent which exceeded the Plan target of 5.11 per cent. However, merchandise imports during the Plan period was still \$130 million less than \$19.81 billion projected in the Plan. Imports started to pick up after the first two years of the Plan and reached a peak of \$5.05 billion in the terminal year. Foodgrain imports rose sharply to \$622 million in 1994/95 against the Plan expectation of a fall to \$100 million. Imports of non-food and intermediate goods grew slowly at the rates of 5.4 per cent and 5.5 per cent respectively compared with 6.6 per cent and 9.8 per cent projected in the Plan indicating a depressed domestic demand. Imports of capital goods which declined by 2.20 per cent rather than rising at 1.70 per cent as projected in the Plan similarly manifested a depressed demand.

1.2.20 Exports: Total exports during the Plan period fell short of the target by \$400 million and amounted to \$ 10.39 billion. However, exports picked up by the close of the Plan reaching a level of \$ 2.72 billion in 1994/95. The average annual growth rate of exports was a little higher (12.20 per cent) than that (11.60 per cent) envisaged in the Plan. Non-traditional

exports grew at a higher annual rate of 17.20 per cent than the Plan's projection of 16 per cent; this offset the shortfall in traditional exports.

1.2.21 Terms of trade: The terms of trade which suffered a deterioration of 2.60 per cent in 1989/90 improved between 1990/91 and 1993/94 but an 8.90 per cent appreciation in the import price index against a 6.60 per cent rise in the export price index resulted in a small deterioration of 2.20 per cent in the country's terms of trade in 1994/95.

1.2.22 Remittances: Total home remittances during the Plan period amounted to \$4.30 billion, lower by only 0.69 per cent than the target of \$ 4.33 billion. The annual growth of private transfer was slow, 4.80 per cent against the projection of 5.10 per cent. Annual manpower export reached its peak of 238 thousand approximately in 1992/93 from 110 thousand in 1989/90 but thereafter fell below 205 thousand and was about 200 thousand in 1994/95. Annual remittances increased from \$761 million in 1989/90 to \$1.09 billion in 1994/95. Total foreign employment was 0.95 million in the terminal year of the Plan.

1.2.23 Foreign aid: The global recession after the Gulf war, the emergence of independent states in the former Soviet Union, and above all, newly emerging donor priorities adversely affected the availability of external assistance and caused a decline in the flow of foreign aid to Bangladesh. Implementation problems also adversely affected aid disbursement. During the Plan period, the total aid disbursement fell short of the target by 9.28 per cent to \$7.56 billion and accounted for 47.64 per cent of development expenditure at 1989/90 prices.

1.2.24 Debt service: The country's debt obligation consists mainly of the public sector debt which increased in nominal terms from \$10.61 billion in 1989/90 to \$16.77 billion in 1994/95 showing a growth rate of 9.60 per cent a year. Debt service payments for the public sector MLT debt rose at the rate of 9.20 per cent from \$302 million in 1989/90 to \$ 468 million in 1994/95. Against this burden, export earning grew at the annual rate of 17.50 per cent in nominal terms. As a result the debt service burden declined to 13.48 per cent of export earnings in 1994/95 compared with 19.75 per cent in 1989/90.

1.2.25 Exchange rate management: Bangladesh has been pursuing a flexible exchange rate policy to ensure its competitiveness in international trade. The Bangladesh Bank fixes its buying and selling rates of US dollar for the banks on a daily basis. While setting the buying and selling rates, changes in exchange rates and price levels of major trading partners are taken into account after due adjustments for trade weights. In other words, buying and selling rates of US dollar in terms of taka are changed with due regard to the nominal as well as real effective exchange rate (REER) index and levels of trade with its important trading partners. Bangladesh Bank has been progressively liberalising the foreign exchange restrictions in tandem with the government's reform policies for trade liberalisation, export promotion and deregulation with a view to creating an environment conducive to growth in investment and productivity. Taka has been made convertible for all transactions in the current account. In addition, several steps have been taken to activate the inter-bank foreign exchange market. The exchange rate in the secondary exchange market and the official rate have been unified since January 1, 1992. On the other hand, exporters retention rate has been increased from 20 per cent to 40 per cent since FY96. These liberalisations have strengthened the unification of the two rates. Taka was depreciated by 22.10 per cent during the Fourth Plan period which stimulated both export and workers' remittances and helped reduce Current Account gap in the external sector.

1.2.26 Money and prices: The Consumer Price Index for the middle income families in Dhaka increased roughly at an annual average rate of 4.50 per cent during the Fourth Plan period compared with the average rate of 9.80 per cent during the preceding 5 years. The inflation rate came down to as low as 1.40 per cent in 1992/93; thereafter, it began to rise and was 5.20 per cent in 1994/95. The lower inflation rate could be attributed to two major factors: the availability of consumer items including foodgrains was adequate and stable, and the money supply was contained, particularly during the first three years of the Plan period. However, the money supply (M_1) during the last two years of the Plan rose significantly which resulted in a higher inflation rate in 1994/95.

1.2.27 Employment situation: The Fourth Plan (1990-95) laid specific emphasis on employment generation to alleviate poverty. The trend in employment is shown in Table 1.10.

Table 1.10
Labour Force Employment and Unemployment During 1972 to 1997

(million person-years)

Year	Labour Force	Employment			Unemployment	Unemployment Rate (%)
		Domestic	Foreign	Total		
1	2	3	4	5	6	7
1972/73	21.38	13.09	-	13.09	8.29	38.78
1977/78	24.10	16.04	0.05	16.09	8.01	33.24
1979/80	25.29	16.09	0.05	16.14	9.15	36.18
1984/85	29.50	18.97	0.32	19.29	10.21	34.61
1989/90	34.80	22.82	0.43	23.25	11.55	33.19
1994/95	40.47	26.88	0.95	27.83	12.64	31.23
1995/96	41.70	28.18	1.14	29.32	12.38	29.69
1996/97	42.97	29.62	1.34	30.96	12.01	27.95

- Note:*
- i. Underemployment counted on the basis of duration of work.
 - ii. LFS's usual definition used.
 - iii. Estimation of labour force for 1972/73 and 1977/78 based on 1974 and 1981 census population growth respectively and for 1979/80, manpower survey of 1980 adjusted; similarly, for 1989/90 LFS 1989 adjusted.
 - iv. The rate of unemployment covers underemployment also; employment and unemployment calculated on person year basis.
 - v. Foreign employment figure shows cumulative net employment.

The labour force has almost doubled since independence growing at a rate faster than the population. Against this, employment on man-year basis has more than doubled resulting in a reduction of unemployment rate (including underemployment) from 38.78 per cent in 1972/73 to 31.23 per cent in 1994/95. During all the Five Year Plans, unemployment rate showed a decline, faster during the First Plan than during the others. However, it suffered a setback during the Two Year Plan (1978-80) when unemployment rate increased. As the domestic employment increased at an annual rate of 3.30 per cent, GDP grew at 3.90 per cent a year there was some marginal gain in the overall average productivity of labour.

1.2.28 Sectoral employment during Fourth Plan: Sectoral employment situation at the beginning and end of the Fourth Plan and the volume of employment generated during the Plan period is shown in Table 1.11. In 1989/90 agriculture accounted for 56 per cent of total domestic employment. Agriculture continued to absorb over half of the employment in 1994/95 in absence of alternative employment opportunities but its share in GDP declined to less than one-third indicating a much lower productivity of labour in agriculture than in the non-agricultural sector.

Table 1.11
Sectoral Employment During Fourth Plan Period

(million persons)

Sector	Employment in 1989/90	Employment in 1994/95	Employment Generation during Plan period
1	2	3	4
Agriculture	12.85 (56.3)	13.97 (52.0)	1.12 (27.6)
Industry	2.52 (11.0)	3.84 (14.3)	1.32 (32.5)
Construction	0.92	1.34	0.42
Power and Gas	0.05	0.09	0.04
Transport and Communication	2.18 (9.6)	2.54 (9.4)	0.36
Education	2.63 (11.5)	3.28 (12.2)	0.65 (16.0)
Trade and Other Services	1.67	1.82	0.15
Sub-Total (domestic)	22.82	26.88	4.06
Foreign Employment	0.43	0.95	0.52
Total	23.25	27.83	4.58

Note: Figures in parentheses indicate percentage share of domestic employment.

1.2.29 Reform measures: A comprehensive programme for structural reforms which was progressing in piece-meal earlier was started in the second half of the 1980s under the Structural Adjustment Facilities (SAF) loan. This was further strengthened in 1990s and aimed at liberalising the foreign trade and exchange rate regimes, restructuring the industrial sector, strengthening fiscal and monetary management, encouraging private sector participation in development and privatising the state owned enterprises (SOEs). As a result, macro economic stability was brought about with lower inflation rates, smaller fiscal and current account deficits and higher foreign exchange reserves. In 1986/87, the first year of the programme of structural adjustment with growth, the overall budget deficit was 8.40 per cent of GDP (Tk. 45.03 billion) and by the end of the decade, it was 7.70 per cent of GDP (Tk.58.10 billion). This eased somewhat the inflationary pressure of the budget. The deficit declined further during the next two years to reach around 6 per cent of GDP. It was displaced in 1994/95 to 6.80 per cent as a result of a sudden spurt in public expenditure. In 1994/95, public expenditure (revenue) grew by 18.57 per cent when revenue receipt rose by 13.16 per cent only. Net foreign financing covered the budgetary gap to a large extent (72.18 per cent), and public borrowing doubled to Tk. 22.17 billion compared to the previous year. Fiscal imbalance had been creeping back after 1992/93 when fiscal deficit in both absolute and relative terms as percentage of GDP was the lowest. As a result of fiscal operation and increased public borrowing in 1993/94 and 1994/95, there was expansion in monetary aggregates and total liquidity increased by 33.87 per cent over those years. This fuelled inflation, and the CPI (Dhaka Middle Class) began to rise in 1993/94 after falling to the lowest level (1.40 per cent) in 1992/93, partly due to fiscal and monetary restraints but mainly due to good harvest. The inflation rate rose to 5.22 per cent in 1994/95, marginally exceeding what it was in 1991/92 (5.10 per cent). Domestic imbalances (over-expenditure and inflation) had their logical effect on the external sector also; current account deficit crept up to 3.54 per cent of GDP in 1994/95, exceeding that of 1991/92 (2.43 per cent) even though export earning was about double during this period and wage earners' remittances rose by about 50 per cent. Rising imbalance in the external sector led to exchange rate depreciation.

1.3 Review of Performance During Two Years Plan Holiday (1995-97)

1.3.1 The government of that time could not draw up a new plan after the Fourth Plan. ADPs in the public sector in 1995/96 and 1996/97 were prepared on an ad-hoc basis. Private investment could not be projected in a framework of facilitation package.

1.3.2 Growth performance: During this period, the overall GDP in real terms attained modest gains. It registered a growth of 5.40 per cent in 1995/96. The growth in agriculture was 3.70 per cent in 1995/96 compared with a negative growth of 1.04 per cent in 1994/95. The growth of industry declined from 8.64 per cent in 1994/95 to 5.29 per cent in 1995/96. The contribution to GDP was 32.24 per cent by agriculture, 11.34 per cent by industry, 6.25 per cent by construction, 1.94 per cent by power, gas and water and 48.21 per cent by other services. Following the taking over charge by the democratically elected new government in June 1996, a set of co-ordinated measures were taken to increase investment in both the public and private sectors. According to preliminary estimates, GDP grew by 5.70 per cent in 1996/97 over that in 1995/96. The growth of agriculture was about 6 per cent, industry 3.60 per cent and services 6.20 per cent. The growth in agriculture was due to significant increase in major crop production. The decline in growth of the industry sector was due to shortfall in production of both large and medium scale industries.

1.3.3 Saving and investment : During 1995/96, the rate of domestic saving was 7.27 per cent and that of national saving was 11.85 per cent of GDP. Preliminary estimates of domestic and national saving rates in 1996/97 were 7.70 per cent and 14.63 per cent respectively. The rate of investment rose from 16.63 per cent of GDP in 1994/95 to 17.0 per cent in 1995/96 and to 17.37 per cent in 1996/97. In 1996/97, public sector investment was 6.52 per cent and the private sector was 10.85 per cent of GDP.

1.3.4 Financing of ADPs: In the absence of a plan, public sector's outlays during 1995/96 and 1996/97 were set through the annual development programmes (ADPs). Original ADPs of 1995/96 and 1996/97 were Tk.121 billion and Tk.125 billion respectively. Due to resource constraint, ADP of 1995/96 was reduced by 13.70 per cent to Tk.104.47 billion. The actual ADP expenditure, however, amounted to around Tk. 100.16 billion. The contributions of domestic resources to the financing of annual development programmes of 1995/96 and 1996/97 were Tk.44.14 billion (42.30%) and Tk.59.26 billion (47.40%) respectively.

1.3.5 Balance of payments situation: The country's balance of payments came under strain in 1995/96. A steep rise in imports coupled with slower aid disbursements triggered a rundown in the country's foreign exchange reserves. By the end of the fiscal year, the reserves stood at \$ 2.04 billion, equivalent to 3.6 months' imports as on June 30, 1996. The trade deficit widened by more than 27 per cent to \$ 3.0 billion after imports jumped up by 18 per cent to \$ 6.88 billion against an 11.80 per cent growth of export to \$ 3.88 billion. Several key imports like cotton, POL, rice and wheat suffered from rises in prices in the world market, significantly raising the import bill. The rise in imports came largely from a 15 per cent increase in non-food imports led by textiles, cement, POL and capital goods and a 37 percent escalation in foodgrain import. Gain in exports of knitwear and ready-made garments mainly contributed to the overall export growth during the year. But inflow of remittances from overseas workers levelled off at \$ 1.2 billion. As a result, the current account deficit widened to \$ 1.6 billion. Aid disbursements also declined by around 17 per cent to \$ 1.44 billion. All these led to the draw-down of the foreign exchange reserves.

1.3.6 The strain experienced in the external balances in 1995/96 eased, albeit marginally, in 1996/97. Faster growth of exports, aided and strengthened by a turn-around in the flow of

remittances, narrowed the current account deficit to an estimated amount of \$ 860 million (3.40 per cent of GDP) compared with \$ 1.64 billion (5 per cent of GDP) in 1995/96. With the rise in foodgrain output in 1996/97, the import demand for foodgrain was estimated to decline substantially- by more than 67 per cent to \$ 212 million. Therefore, total imports were estimated to grow at a slower rate of 1.70 per cent and reach \$ 7.0 billion. On the other hand, estimated higher export earnings from garments, knitwear, frozen food, tea and raw jute led to a 13.30 per cent rise in export earnings to \$ 4.40 billion in 1996/97.

1.4 Overall Macroeconomic and Social Development Trend

1.4.1 Macroeconomic trend: Recent macroeconomic management has achieved successes in infusing stability in the economy (Table 1.12). A number of features are noteworthy here. Firstly, GDP growth has improved in recent years. Secondly, dependence on foreign aid has been significantly reduced; foreign aid financing is less than one-sixth of investment against about two-thirds a decade ago. Thirdly, inflation has been contained. Fourthly, external sector's imbalance has been brought down to a manageable limit of available external resources due to the growth of exports and remittances. Finally, fiscal deficit has been contained and dependence on foreign aid has been reduced as a result of greater domestic resource mobilisation through tax efforts and reforms.

Table 1.12
Macroeconomic Indicators

(in million Taka)

Items	1972/73	1977/78	1979/80	1984/85	1989/90	1994/95	1995/96	1996/97 (P)
1	2	3	4	5	6	7	8	9
GDP (at 1984/85 prices)	264,555	323,015	341,298	406,933	497,527	609,793	642,441	678,753
GDP (at current prices)	49,853	145,194	196,050	406,933	737,571	1170,261	1301,600	1402,580
External Resources Balance	2,459	14,650	25,572	43,172	74,329	97,428	126,554	116,027
Import	5,484	22,855	39,588	74,361	135,751	263,133	310,913	329,328
Export	3,025	8,205	14,016	31,189	61,422	165,705	184,359	213,301
National Resources	52,312	159,844	221,622	450,105	811,900	1267,689	1428,154	1538,218
Consumption	50,811	142,674	191,646	397,438	717,473	1073,038	1206,954	1294,532
Investment	1,501	17,170	29,976	52,667	94,427	194,651	221,200	243,686
Domestic Saving	-958	2,520	4,404	9,495	20,098	97,223	94,646	108,048
National Saving	-1,383	5,407	7,755	18,414	42,628	153,245	154,288	205,171
Current Account Balance	2,884	11,763	22,221	34,253	51,799	41,406	66,912	38,515
Tax Revenue	1,866	9,842	14,363	28,070	57,120	113,640	122,330	140,740
Overall Fiscal Deficit	4,656	10,436	19,412	29,960	58,100	79,700	74,500	74,800
Rate of Inflation (% change in CPI)	47.40	12.74	18.85	11.20	9.33	5.22	4.07	3.91
Real GDP growth rate	-	7.03	1.50	3.93	6.63	4.44	5.35	5.65
Exchange Rate (Taka/US\$)	7.7808	15.1215	15.4777	26.0600	32.9323	40.2005	40.8400	42.7008
As % of GDP (at current Prices)								
External Resources Balance	4.93	10.09	13.04	10.61	10.08	8.33	9.72	8.27
Import	11.00	15.74	20.19	18.27	18.40	22.48	23.89	23.48
Export	6.07	5.65	7.15	7.66	8.32	14.15	14.17	15.21
Consumption	101.92	98.26	97.75	97.67	97.28	91.69	92.73	92.30
Investment	3.01	11.82	15.29	12.94	12.80	16.63	16.99	17.37
Domestic Saving	-1.92	1.74	2.25	2.33	2.72	8.31	7.27	7.70
National Saving	-2.77	3.72	3.96	4.52	5.78	13.09	11.85	14.63
Current Account Balance	5.78	8.10	11.33	8.42	7.02	3.54	5.14	2.75
Tax Revenue	3.74	6.78	7.33	6.90	7.74	9.71	9.40	10.03
Overall Fiscal Deficit	9.34	7.19	9.90	7.36	7.88	6.81	5.72	5.33

Note : P = Preliminary, World Bank's definition of tax differs from that of the Ministry of Finance.

Source : BBS

1.4.2 Trend in social development

- a. **Income distribution:** The average per capita GDP has doubled in about 20 years, but is still at a very low level. This has been accompanied by some improvement in the poverty situation. The percentage of population below poverty level declined from 83 per cent in 1974 to 73 per cent in 1981, to 55.60 per cent in 1985 and to 47.50 per cent in 1995 (Table 1.13). Preliminary estimate shows that in 1996, percentage of such population was 45.8. But Gini coefficient shows a deterioration in income distribution since 1985, rising from 0.372 to 0.430 in 1995. This apparent contradiction between poverty level and income distribution can be explained by targeted food distribution programme in a market economy driven by profit motive.
- b. **Economically active population:** While population has grown between 1974 and 1991 by 54.50 per cent, the economically active population has gone up by 63.90 per cent, indicating an increase in the refined activity rate from 44.30 per cent in 1974 to 69.60 per cent in 1990/91. In 1995/96, activity rate was 64.80 per cent against 48.30 per cent. Due to this growth in activity rate, the volume of unemployment increased from 0.5 million in 1974 to 1.27 million in 1995/96. But because of the shift in the structure of the economy and improvement in winter cultivation, overall employment condition improved and the unemployment and under-employment rate declined from 38.78 per cent in 1972 to 27.95 per cent in 1996/97. Agriculture has not been able to absorb increased labour force and as a result, there has been large migration from the rural to the urban areas. This is supported by phenomenal growth of over 6 per cent in urban population per annum since the 1970s. However, some of the demographic variables improved. The rate of growth of population has slowed down. Despite that, employment opportunities continued to lag behind the labour force growth.
- c. **Health and family planning:** Despite low level of per capita income Bangladesh has achieved impressive progress in the area of population planning and family welfare. The rate of population growth declined from over 2.50 per cent in 1971 to 1.80 per cent in 1996. TFR declined from 6.3 in 1975 to 3.4 in 1996, infant mortality rate declined from 140 per thousand live births in 1975 to 78 per thousand in 1996 and maternal mortality rate from 6.2 in 1981 to 4.4 per 1000 live births in 1996. Contraceptive prevalence rate went up from 8 per cent in 1975 to over 48 per cent in 1996. Life expectancy at birth rose from 45 years in 1970 to 58 in 1996. There have been some impressive achievements in the area of primary health care and sanitation also. Expanded programme of immunisation, increased its coverage from 2 per cent in 1985 to 77 per cent in 1996. Dramatic improvement in the use of oral rehydration therapy (ORT) has also improved child survival significantly.
- d. Over 90 per cent of the people in the rural areas now use safe drinking water compared with 56 per cent only in 1975. There has also been improvement in the coverage of the sanitary methods from 9 per cent in 1991 to 36.90 per cent in 1996. The trend in the ratio of population to physicians and hospital beds, although improving, is still low. Availability of nurses is very low. Therefore, there is a strong need to improve availability of physicians, hospital beds and nurses, in addition to the need for better quality of medical services.
- e. One of the major indicators, in fact, an important precondition of social development, is literacy and education. Time series of literacy shows that adult literacy rate which was 25.80 per cent in 1974 rose to 29.20 per cent in 1981 and to 35.30 per cent in 1991. This means that in about 20 years time it rose by only 13 percentage points, while 64.70 per cent of the population remained illiterate. The progress has been

Table 1.13
Social Development Indicators

Area/Indicators	1970	1974	1975	1981	1985	1991	1992	1993	1994	1995	1996
Demographic Indicators											
Population (million persons)	71.8	76.4	80.1	89.9	99.9	111.5	113.2	115.5	117.7	120.8	122.0
Population density (persons/sq. km)	486	518	543	609	677	755	767	782	798	818	832
Population growth rate (%)	2.60	2.48	2.57	2.35	2.07	1.98	1.92	1.88	1.87	1.85	1.80
Crude birth rate (per 1000 persons)	-	42	46	35	35	32	31	29	27	28	27
Crude death rate (per 1000 persons)	-	19.4	18.0	12	12	13	11	10	9	9	9
Total fertility rate (birth per woman)	-	6.3	6.3	5.04	4.7	4.3	4.2	3.8	3.6	3.4	3.4
Net reproduction rate	-	-	2.3	2.0	1.8	1.7	1.6	1.6	1.5	1.4	1.5
Contraceptive prevalence rate (% of married couple between 15-49 yrs)	-	4.7	7.7	21.8	25	40	-	44.6	46.3	48.0	48.0
Maternal mortality rate (per 1000 live births)	-	-	-	6.2	6.3	4.7	4.7	4.5	4.5	4.5	4.4
Infant mortality rate (per 1000 live births)	150	140	140	111	112	92	88	84	77	78	78
Life expectancy (National)	45	50.7	46	55	55	56.1	56.3	57.2	57.9	58.0	58.0
Male	-	51.6	47	55	56	56.5	56.8	57.8	58.1	58.1	58.1
Female	-	49.7	45	54	55	55.7	55.9	56.6	57.5	57.6	57.6
Population by age group (%)											
o-14	46.2	45.9	43.8	41.3	41.8	42.0	-	-	41.1	40.8	43.2
15-64	51.1	50.5	53.8	55.9	55.5	55.6	-	-	54.9	55.1	53.4
65+	2.6	3.6	2.4	2.8	2.7	2.8	-	-	4.0	4.1	3.4
Urban population (as % of total population)	7.6	8.8	9.3	15.2	16.2	17.2	18.0	20.0	21	22	23
Growth rate of urban population	-	4.25	6.74	6.63	6.52	-	6.30	6.27	6.22	6.09	6.03
Mean age at first marriage											
Male	-	24.0	24.5	25.8	25.3	25.2	25.2	26.6	27.7	27.9	27.6
Female	-	15.9	16.4	17.8	18.0	18.1	18.2	19.6	18.8	19.9	20.0
Health and Sanitation Indicators											
EPI coverage (% of one year old children)				1	2		69	-	74	76	77
Sanitary system of excreta disposal (% of population)						9			35	35.3	36.9
Access to safe water (% of population)			56			80			95	96	96
Persons per hospital bed	8122	6000	5110	4290	3635	3205	3254	3320	3384	3450	3307
Persons per physician	8430	10000	11350	7810	6886	4526	4596	4687	4777	4870	4915
Population per nurse	6578	-	-	-	8755	9955	10107	10312	10509	10714	8879
Daily per capita protein intake (grams)	-	51	43	-	63	-	63				65
Daily per capita calorie intake (k. cal.)	-	1892	1760	-	2191	-	2266				2244
Income Distribution Indicators											
Income ratio of highest 20% to lowest 20% of population		5.9	6.0	6.9	6.6	-	6.9				8.8
Gini co-efficient											
National		0.36		0.39	0.37		0.39				0.43
Rural		0.35		0.36	0.36		0.36				0.38
Urban		0.38		0.41	0.37		0.40				0.44
Population below poverty level: per capita calorie intake<2122 k.cal.											
National		83		73	55.7		47.5				47.5
Rural		83		74	54.7		47.6				47.1
Urban		81		66	62.6		46.7				49.7
Income per capita GDP											
in Taka		992	1594	2574	4174	7490	8001	8208	8754	9760	10660
In US\$		124	180	158	161	210	210	210	219	243	261

Contd.

Area/Indicators	1970	1974	1975	1981	1985	1991	1992	1993	1994	1995	1996
Education Indicators											
Adult literacy											
National		25.8	-	29.2	33.0	35.3	39.7	41.5	42.0	47.3	47.3
Male		37.2	-	39.7	39.7	44.3	46.8	48.1	49.4	55.6	55.6
Female		13.2	-	18.8	18.0	25.8	25.0	33.9	34.3	38.1	38.1
Gross primary enrolment ratio (6-10 years)											
National					-	76.0	-	80.0	86.0	92.0	95.0
Male					56.2	81.0	-	82.0	88.0	93.0	96.0
Female					43.8	70.0	-	78.0	84.0	91.0	94.0
Primary school completion rate (%)	-	-	-	-	-	41	53	60	61	-	-
Female labour force (as % of total labour)	-	4.1	4.5	5.8	4.1	13.6	14.5	-	-	-	18.2
Share of women in Public Service (in percentage)	-	-	-	-	6.3	8.0	8.5	8.6	9.1	-	-
Share of women in the total primary school teachers	-	-	-	9.0	12.9	20.4	21.4	23.8	25.0	26.9	27.5
Share of female members in the parliament (MPs)	-	-	-	-	-	10.3	-	-	-	-	11.2
Percentage of women participating in the national election	-	-	-	-	-	1.7	-	-	-	-	1.9
Daily newspaper in circulation (copies per 1000 persons)	-	--	-	-	-	-	-	14.9	17.3	18.5	19.0
T.V. Receivers (sets per 1000 persons)	-	-	-	-	-	4.5	4.5	4.5	4.7	5.2	5.3

Source: BBS/Planning Commission

extremely slow. Historical observations of gross enrolment of primary education indicate that, it in fact, went down in the 1980's, implying that primary education failed to enjoy due importance and that enrolment did not keep pace with the growing population. However, recently the government has not only made primary education compulsory but has also given a big push to the development of primary and mass education. It has allocated higher amounts and adopted innovative programmes like Food for Education for rapid expansion of primary and mass education. As a result, the gross primary enrolment ratio has gone up, particularly among girls. Gross secondary enrolment ratio also rose from 17 per cent to 19 per cent during the period of 1986-92.

- f. **Indicator of male-female gap** : Labour force participation rate of the females increased from 4.10 per cent in 1974 to 18.20 per cent in 1996. Life expectancy of the females is hardly different from that of the males. These went up from 51.6 and 49.7 in 1974 to 58.1 and 57.6 in 1996 for males and females respectively. Literacy ratio of the females as percentage of the males has gone up from 35.50 per cent in 1974 to 68.50 per cent in 1996. Primary school enrolment of the females as a percentage of the males has also gone up steadily.
- g. Access to credit and employment of women is also on the rise. Women are increasingly entering into industrial employment. The percentage of female workers rose from 24 per cent in 1984/85 to 38 per cent in 1995/96. Ninety per cent of the workers in garment industries are presently women. Share of women in public service went up from 6.30 per cent in mid 1980s to 9.10 per cent in 1994.

1.5 Sectoral Performances

1.5 .1 Agriculture : Agriculture accounts for about one-third of GDP and nearly 63 per cent of the total employed persons in 1995/96. It attained modest growth and experienced slow transition during the two decades since independence, though the development goal of the sector was to transform the traditional and vulnerable agriculture into a modern one capable of sustained growth. Since the First Five Year Plan, all the Plans emphasised the overall development of the rural economy with food and agriculture as its centrepiece. The average annual growth rate of the agriculture sector was 1.86 per cent from 1972/73 through 1979/80 and 2.17 per cent from 1980/81 through 1990/91.

1.5.2 The target of foodgrain production in the First Plan was set at 15.14 million metric tons (mt) against the benchmark of 10.02 million mt in 1972/73. However, production in the terminal year, 1977/78 was 13.11 million mt which was 15 per cent less than the target. The shortfall in crop production is mainly attributed to natural calamities and slow expansion of the modern technology. Only 2.87 million acres of cultivable land could be covered under mechanised irrigation by the terminal year of the First Plan against the target of 4.92 million acres.

1.5.3 During the Second Plan, the target of food production was 17.5 million mt. The growth of foodgrain production was modest and reached the level of 15.8 million mt against 13.5 million mt in 1979/80 though an input-based medium term food production plan was undertaken in 1981 for accelerated production of foodgrain. The shortfall in production was mainly due to frequent floods and droughts, inadequate irrigation facilities and shortfalls in fertiliser distribution. The area under irrigation reached 6.12 million acres only against the target of 7.21 million acres and fertiliser distribution was 1.26 million mt only against a target of 1.6 million mt. The performance of the cash crops was also not satisfactory.

1.5.4 The Third Plan accorded priority to agriculture as the strategy for development of domestic resources and accordingly, allocated about 30 per cent of the total Plan outlay to the sector, including development of water resources and rural institutions. Moderate growth was achieved in the sector with foodgrain production increasing to 18.75 million mt against the benchmark of 15.8 million mt. The target of 20.6 million mt could not be attained because of two consecutive severe floods in 1987 and 1988 though privatisation of fertiliser distribution and liberalisation of import of minor irrigation equipment helped raise their use. The annual growth rate of the agriculture sector was 2.5 per cent only as against a target of 4 per cent.

1.5.5 Agriculture accounted for 38 per cent of GDP in 1989/90. Of this, crop sub-sector contributed 30 per cent to GDP, forestry 2.50 per cent, livestock 2.80 per cent and fisheries 2.60 per cent. At the end of the Fourth Plan, agriculture still accounted for about one-third of GDP. Forestry, fisheries and livestock, each contributed about 3 per cent of GDP, while crop sector's share declined to about 24 per cent. Inadequate quality seeds, irrigation facilities and extension services coupled with natural calamities like floods, droughts, salinity, etc., contributed largely to the sluggish growth of agriculture during the Fourth Plan period.

1.5.6 Food and crops: One of the prime goals of the Fourth Plan was to attain self-sufficiency in foodgrain along with increased production of other nutritional crops. The foodgrain production target of the Plan was set at 21.98 million mt against the benchmark production of 18.85 million mt in 1989/90. The annual target of growth of the agriculture sector was set at 3.60 per cent for the Plan period. The strategy for achieving the crop production target put more emphasis on increasing yield per acre rather than increasing crop acreage.

1.5.7 Foodgrain production however progressed slowly to reach the peak level of the Plan of 19.60 million mt in 1992/93- an increase of less than a million mt over 3 years. The increased foodgrain production largely came from aman crop. This resulted from increase in HYV acreage from 4.86 million acres in 1991/92 to 5.76 million acres in 1992/93. The flood in 1993 and severe drought in 1994 along with depressed harvest prices, however, affected foodgrain production in 1993/94 and 1994/95. Foodgrain production declined to 19.25 million mt in 1993/94 and to 18.17 million mt in 1994/95. Acreage under rice also declined

from 25.88 million acres in 1989/90 to 24.52 million acres in 1994/95. Acreage under wheat marginally increased from 1.46 million acres in 1989/90 to 1.58 million acres in 1994/95 but production of wheat increased by 40 per cent to 1.25 million mt in 1994/95 from the benchmark production of 0.89 million mt. Table 1.14 shows production of rice and wheat during the Fourth Plan period.

Table 1.14
Production of Foodgrain During Fourth Plan

(in million m.ton)

Crops	1989/90 (Benchmark)	Plan Target (Terminal Year)	1990/91	1991/92	1992/93	1993/94	1994/95
1	2	3	4	5	6	7	8
Aus	2.49	2.42	2.33	2.18	2.08	1.85	1.79
Aman	9.20	11.00	9.17	9.27	9.68	9.42	8.50
Boro	6.17	7.20	6.36	6.80	6.59	6.77	6.54
Wheat	0.89	1.20	1.00	1.07	1.17	1.13	1.25
Total (Rice and Wheat)	18.75	21.82	18.86	19.32	19.52	19.17	18.08
Other Coarse grain	0.10	0.16	0.08	0.08	0.08	0.08	0.09
Total Foodgrain	18.85	21.98	18.94	19.40	19.60	19.25	18.17

Source : Ministry of Agriculture

1.5.8 The failure to achieve production targets was due to shortfalls in both area and yield. Yield levels continued to reflect past trends rather than the accelerated improvements envisaged in the Plan. The production of aus, aman and boro rice — all fell short of their respective targets.

1.5.9 The growth of the agriculture sector as a whole during the Fourth Plan fell short of the rate envisaged. Annual average growth rate attained was 0.98 per cent against the target of 3.60 per cent. It declined through the Plan period and suffered a serious setback during 1993/94 (0.30 per cent) and 1994/95 (-1 per cent). The crop sector declined in both the years. Although the adoption of modern varieties increased, their yields have fallen in recent years. The main reasons for this were inadequate supply of high quality seeds and loss of vigour of the HYV seeds. The expansion of minor irrigation also slowed down. Non-availability of fertilisers at the farm level in time also emerged as a vexing problem. The unbalanced use of fertilisers and depletion of organic matter affected soil fertility and yield. Increasing land erosion, soil degradation, water logging and salinity, frequent floods and droughts and declining ground water level in several areas remained as the main problems for increasing production.

1.5.10 The thrust on foodgrain self-sufficiency was maintained during 1995/96 and 1996/97 and crop diversification programme of the Fourth Plan was continued. Total foodgrain production during 1995/96 was somewhat better than that in the previous two years though still below the 1992/93 peak of 19.6 million mt. Aus crop suffered from inadequate rainfall and was 1.68 million mt — 0.11 million mt less than that of the terminal year of the Fourth Plan. This shortfall was made up by aman harvest of about 8.8 million mt. Production of boro rice was 7.2 million mt. Total rice production was 17.69 million mt. With the wheat production of 1.37 million mt, total foodgrain production was 19.14 million mt in 1995/96, but still below the 1992/93 level. The estimate for total cereal production during the year 1996/97 was at 20.43 million mt, the highest ever production of cereals. The aman production rose to 9.59 million mt while aus, boro and wheat gained marginally only to 1.87 million mt, 7.42 million mt and 1.45 million mt respectively.

1.5.11 Food management: The main objective of the “Food Policy” is to ensure food security to all the households. During the Fourth Plan, food management underwent major changes. With the growth in foodgrain production as well as development of infrastructure, marketing of foodgrain improved. Growth in private foodgrain trade enabled the government to moderate its intervention in the foodgrain markets. All restrictions and obstacles to participation of the private sector in foodgrain trade and management were removed. The level of commercial operation of the Public Food Distribution System (PFDS) declined. Simultaneously, foodgrain distribution through various safety net programmes was intensified along with some improvements and enlargements of targeted intervention programmes such as the Food for Education.

1.5.12 During the Fourth Plan period, the year-end stock of foodgrain with the PFDS was maintained at around 0.8 million mt. Procurement of foodgrain from the farmers decreased from 0.78 million mt in 1990/91 to 0.28 million mt in 1994/95 as the production remained below the record level of 1992/93. During the same period, off-take of foodgrain through PFDS also declined from 2.37 million mt in 1990/91 to 1.57 million mt in 1994/95.

1.5.13 The foodgrain storage capacity increased from 1.02 million mt to 1.86 million mt at the end of the Third Plan. The same level of storage capacity was maintained upto the end of the Fourth Plan. In order to retain foodgrain storage capacity at the level of around 1.86 million mt and to ensure quality of stock, the government undertook various projects for rehabilitation and reconstruction of food godowns and modernisation of the food management system.

1.5.14 While rehabilitation and reconstruction of food godowns and modernisation of food management system were continued, some policy oriented projects for efficient monitoring and forecasting of the country’s food situation were also undertaken to cope with unexpected price and supply situations.

1.5.15 Forestry : Forest is ecologically important and plays an important role in the economy of Bangladesh. The forestry activities contribute nearly 3 per cent of the GDP and about 2 per cent of the total labour force is employed in this sub-sector. An estimated 2.45 million ha (17 per cent) of the total land of the country is under forests or potential forests. Out of this, 2.18 million ha is owned by the government as classified and unclassified forests and the rest 0.27 million ha is controlled privately, e.g. by homesteads, tea gardens, rubber plantations, etc.

1.5.16 The major emphasis during the earlier Plans was quantitative expansion of forests for providing increased supplies of wood and wood products and qualitative improvement of the natural forests through afforestation. During the Fourth Plan, extraction of forest resources was discouraged for environmental conservation and afforestation of newly accreted land received priority. However, the major thrust during the Fourth Plan was people’s participation and private sector investment in the management and development of forests.

1.5.17 The physical target for forest plantation during the Fourth Plan was 46,947.5 ha; against this 43,619.84 ha were brought under actual plantation. Coastal afforestation was more or less fully achieved (19,565 ha). Similarly, the Plan target of 16,158 km. of strip plantation was achieved by almost 100 per cent by the end of the Fourth Plan. Rubber plantation covered 1,261.78 ha of land under BFIDC and production of rubber was 7.83 million kg. against the target of 11.03 million kg.

1.5.18 The main objective of the forestry sub-sector during 1995/96 and 1996/97 was to expand forest resources, make the forests adequately productive, develop institutional capabilities including human resource and involve local people as much as possible in forestry activities. People oriented programmes covering forestry on marginal lands, char lands, road sides, etc. got momentum during these years.

1.5.19 The coastal afforestation programme covered about 2,730 ha against the target of 3,010 ha. Targets for industrial and strip plantations during 1995/96 were to cover 4,239 ha and 1,778 km respectively. The former target was fully realised but the latter covered 1,665 km. During 1996/97, targets for coastal afforestation, industrial plantation and strip plantation were set at 2800 ha, 3895 ha and 3295 km respectively.

1.5.20 Livestock: The contribution of the livestock sub-sector to the country's GDP is around 3 per cent and to agricultural GDP around 9 per cent. The latter share has been rising steadily in recent years. Livestock contributes 95 per cent of draught power to agriculture and provides full-time employment to about 20 per cent of the rural population generating cash income for the rural poor with a small amount of investment. This sub-sector earns also significant amount of foreign exchange through export of hides and skins, leather products, bones, horns, etc.

1.5.21 Keeping these in view, the programmes undertaken during the Fourth Plan period were: (a) feed and fodder development for poultry and cattle, (b) animal health and disease control by treatment and vaccination, (c) improving breed and breed multiplication, (d) marketing, (e) credit, (f) research, and (g) extension services, training and education.

1.5.22 Targets and achievements in some of the areas of the livestock sub-sector during the Fourth Plan are shown in Table 1.15. Production of dairy and poultry remained below their respective planned targets.

Table 1.15
Targets and Achievements of Livestock Sub-sector During Fourth Plan

Item	Unit	1989/90 (Benchmark)	1994/95 (Terminal Year)	
			Target	Achievement
1	2	3	4	5
Milk	'000' metric tons	1,326	1,480	1,412
Meat	'000' metric tons	435	510	505
Egg	million number	1,910	2,600	2,539
Vaccines	million doses	220	300	370
Artificial Insemination	million cases	0.8	1.5	1.4

Source : Department of Livestock

1.5.23 The livestock sub-sector continued the programmes during these two years following the objectives and strategies of the Fourth Plan like genetic upgradation of livestock, development of dairy and poultry enterprises and expansion of employment opportunities. During 1995/96, livestock sub-sector provided 1,472 million doses of liquid semen, 0.35 million doses of frozen semen, 1.32 million artificial inseminations, 4.1 million day-old chicks and 19.58 million doses of vaccines. Dairy and poultry outputs were 1.07 million litres of milk and 2.6 billion eggs. Production during 1996/97 were 1.54 million litres of milk, 3.25 billion eggs and 8.36 million day-old chicks.

1.5.24 Fisheries : Fisheries accounts for about 9 per cent of agricultural GDP and contributes about 60 per cent of the nation's protein intake. It provides full time employment

to about 1.2 million people and also generates part time employment for some 11 million people. About 10 per cent of total export earnings come from fisheries. Increased production, export and creation of employment opportunities have been the main focus of development activities in the sub-sector over the years.

1.5.25 The Fourth Plan laid emphasis on the development of fisheries sub-sector with major objectives such as (a) increasing fish production for domestic consumption; (b) improving the socio-economic conditions of the fishing community; (c) enhancing the fisheries resource base; (d) improving management technology; and (e) increasing foreign exchange earnings through export of fish and fish products.

1.5.26 The Fourth Plan envisaged fish production of 1.20 million mt in 1994/95 as against the actual production of 0.85 million mt in 1989/90. Total fish production at the terminal year of the Plan was 1.17 million mt (inland fish production 0.91 m.mt and marine, 0.26 m.mt) as against the target of 1.20 million mt (inland, 0.94 m.mt and marine, 0.26 m.mt).

1.5.27 The total export earnings from fisheries during 1994/95 stood at \$315.69 million (at current dollars). Export earnings from frozen food was \$226 million exceeding the Plan target of \$158 million by 43 per cent (at constant \$ of 1989/90).

1.5.28 Fisheries sub-sector continued to get priority during 1995/96 and 1996/97. Aquaculture was given high priority because of shortfall in inland fishing during the Fourth Plan as well as its potential. This included fish culture in derelict fish ponds, paddy fields, open water areas and other water bodies.

1.5.29 In 1995/96, 1.24 million mt of fish was produced against a target of 1.26 million mt. The target of fish production for 1996/97 was set at 1.37 million mt. The hatching in 1995/96 was 3,500 kg as against the target of 3,000 kg from the government fish seed multiplication farms and hatcheries. In 1996/97, the hatching rose to 3,800 kg. Export earnings during 1995/96 was Tk.13.41 billion from the export of 38,929 mt of fish and fish products. The target of export earnings in 1996/97 was set at Tk.16 billion.

1.6 Water Resources

1.6.1 The key strategy for the water resources development was the expansion of irrigation coverage through water conservation measures, conjunctive use of both surface and ground water resources along with optimum utilisation of available flows of major/minor rivers in a phased manner.

1.6.2 In order to achieve a sustained growth of 3.60 per cent in the agriculture sector, it was planned to bring about 4.8 million ha of land under irrigation by the terminal year of the Fourth Plan. To achieve this target, BWDB undertook gravity irrigation mainly under flood control, drainage and irrigation (FCDI) projects in order to cover 0.5 million ha, while the remaining areas were to be covered by minor irrigation equipment and traditional methods. Schemes were drawn up to bring about 3.64 million ha of land under flood control and drainage during the Plan period.

1.6.3 Surface water irrigation: The surface water irrigation consisting of gravity flow, LLP, floating pumps, etc. was carried out during the Plan period by both the public and the private sectors. The cumulative target for surface water irrigation coverage in 1990-95 was estimated at 1.79 million ha against which 1.14 million ha was covered at the end of the Plan period.

1.6.4 Ground water irrigation: Ground water irrigation programmes through DTW, STW, HTW and other technologies were under implementation mainly by the private sector since late 1980s. Subsidies on DTW were withdrawn and minor irrigation was entirely privatised. The cumulative target for ground water irrigation during 1990-95 was set at 3.02 million ha. As against this target, the cumulative achievement at the end of June, 1995 was 2.17 million ha.

1.6.5 Minor irrigation development programmes were also carried out by LGED and other concerned organisations. Taking into account all these activities, the cumulative irrigation target for the Fourth Plan was 4.81 million ha. Against this target, actual achievement at the end of the Plan period was estimated to be 3.33 million ha. Shortfall occurred mainly due to poor command area development, lack of motivation and people's participation, shortage of water in the dry season, damage to irrigation infrastructure by floods, cyclones and natural calamities, etc. Other major problems that hindered the achievement of irrigation target were the threat from saline water intrusion and a lack of effective water-sharing of the common rivers, particularly of the Ganges.

1.6.6 Flood control and drainage: BWDB constructed 7,900 km. of embankments to protect valuable crops, lives and properties in different areas. The flood control and drainage targets for the Fourth Plan was to cover an area of 3.64 million ha. Against this, about 3.84 million ha. was brought under flood control and drainage facilities by the terminal year of the Plan. Irrigation, flood control and drainage coverage during the Fourth Plan against their targets are shown in Table 1.16.

Table 1.16
Targets and Achievements of Irrigation and Flood Control
During Fourth Plan

(in million hectare)

Programme	1989/90 (Benchmark)	1994/95 (Terminal Year)	
		Target	Achievement
1	2	3	4
I. Irrigation			
A. Surface Water Irrigation			
i) Gravity Flow	0.21	0.50	0.35
ii) LLP	0.78	1.09	0.54
iii) Traditional	0.30	0.20	0.25
Sub-Total A	1.29	1.79	1.14
B. Ground Water Irrigation			
i) STW	1.25	2.20	1.64
ii) DTW	0.50	0.76	0.50
iii) HTW	0.05	0.05	0.02
Sub-Total B	1.80	3.01	2.16
C. Others	-	-	0.02
Total (A+B+C)	3.09	4.80	3.32
II. Flood Control and Drainage	3.24	3.64	3.84

Source: i. National Minor Irrigation Census, 1995/96
ii. Bangladesh Water Development Board.

1.6.7 Flood Action Plan (FAP) : The unprecedented floods of 1987 and 1988 caused a major setback to the economy. A number of countries offered help for finding ways to mitigate the effects of natural disasters. At the request of the Government of Bangladesh, the World Bank

co-ordinated various efforts and prepared a programme of studies and pilot projects in order to get a better understanding of the flood problem. The Flood Action Plan started with 11 main components and 15 supporting studies and pilot projects for implementation during 1990-95.

1.6.8 Most of the original programmes of studies under FAP have been completed. The regional studies identified and evaluated a number of projects at prefeasibility stage, and some possible flood mitigation projects have been identified in the regional context. A few priority projects such as the protection of Dhaka city and a number of secondary towns, erosion protection on the Brahmaputra right bank and the rehabilitation of the coastal embankments are currently under implementation. Work on a number of important long-term studies and pilot projects are still going on.

1.6.9 The sectoral development activities were continued in 1995/96 and 1996/97 on the basis of the Three Year Rolling Investment Programme and Annual Development Programmes (ADPs). During these two years, most of the Flood Action Plan (FAP) studies were completed and the Second Phase of Bangladesh Water and Flood Management Strategy was approved to prepare a Water Sector Master Plan and implement selected projects to follow-up earlier FAP studies. As regards sectoral performance in 1995-97, irrigation coverage at the end of June, 1997 was about 4.0 million ha. On the other hand, area coverage under flood control and drainage improvement was 4.20 million ha upto June, 1997.

1.7 Rural Development and Institutions

1.7.1 Although alleviation of poverty was the principal objective of all successive plans, no appreciable improvement could be achieved; consequently, poverty in Bangladesh still remains pervasive, and particularly conspicuous in rural areas. Keeping the overall perspective of the poverty situation in view, the main objectives and targets in the RDI sector for the Fourth Plan were:

- a. generating employment for the poor by 0.53 million by the year 1995, mostly self-employment through co-operatives;
- b. development of physical infrastructure such as rural roads, culverts, hats and bazars to create necessary infrastructural facilities and at the same time, generate employment opportunities to the tune of 133.1 million man-days during the Plan period; and
- c. development of irrigated agriculture, drainage and minor flood control schemes.

1.7.2 The important programmes envisaged for achievement of these objectives included production and employment programmes for the poor and development of rural physical infrastructure. The strategy was adopted to cover a minimum of one full district with one or more of these components.

1.7.3 Poverty alleviation and employment generation: During the Plan period, mobilisation of the rural poor, training for awareness raising, skill development, leadership, management capability, i.e., human resources development and access to credit were provided through co-operative activities, particularly by BRDB. About 0.79 million members were enrolled in various newly formed co-operatives out of which 60 per cent were women. The activities under RDI made a good impact on human resources development, particularly among women with focus on environmental problems, sanitation and safe drinking water, and nutritional situation. The Ministry of Land established some 384 self-reliant ideal villages to rehabilitate 17,315 landless and rootless families.

1.7.4 Infrastructure : Under LGED 3,709 kms. of roads were constructed against the target of 2,399 kms. About 42,000 metres of bridges and culverts were either constructed or

rehabilitated against the target of 30,000 metres. Against the target of development of 316 growth centres, 277 were developed through construction of sheds, internal roads, trading areas, etc. In the course of implementation of infrastructure programmes, LGED generated over 112.00 million person-days of seasonal employment which was 84 per cent of the target.

1.7.5 Rural Development sub-sector continued its focus on poverty alleviation through production and employment programmes (PEP) and development of physical infrastructures along with irrigated agriculture. Under the PEP, 0.39 million persons were targeted to be employed by the end of 1996/97 through self-employment of the members of the co-operatives, and formal and informal groups formed for self-employment. Under the infrastructure programme, 2,856 kms of pucca roads and 20,800 metres of bridges and culverts were to be constructed. Apart from these, 163 growth centres were planned to be developed.

1.8 Industry

1.8.1 Review of past performance: Industries sector plays a pivotal role for accelerated economic growth as well as productive employment generation. As the agricultural sector is constrained by land and under-employment situation resulting in a relatively low output - labour ratio, industry will have to become the engine of development. A breakthrough in industrial development is also called for to achieve the desired structural change in the economy in order to reduce its dependence on nature.

1.8.2 The growth rate of the manufacturing sector fluctuated largely during the past Plan periods. The annual average growth rates of the manufacturing sector during the First Plan, the Two Year Plan, the Second Plan and the Third Plan were 7.35, 6.21, 0.93 and 4.22 per cent respectively.

1.8.3 Development policies and programmes in the initial years after independence concentrated on repairs, rehabilitation and consolidation to restore the sector at the pre-independence level with some new investments in priority areas. The First Plan mainly aimed at better utilisation of the existing capital stock. These yielded good results. In both the Second and Third Plans, the primary objectives of industrialisation were to support the agricultural sector, meet basic needs of people and strengthen the balance of payments position.

1.8.4 With the introduction of the New Industrial Policy (NIP) of 1982 and the Revised Industrial Policy (RIP) of 1986, a number of changes and improvements were made in various procedures and incentive structures to promote private investment in industry. As a result, non-traditional export industries, viz. ready-made garments, frozen food, etc. became important sources of industrial growth. Export earnings from manufacturing rose from a level of US\$ 617.81 million in 1984/85 to US\$ 1.2 billion in 1989/90. The share of export of non-traditional items increased from 35.8 per cent in 1984/85 to 67.74 per cent in 1989/90.

1.8.5 During the Third Plan, a total of 39 public enterprises were disinvested and transferred to the private sector in order to create more confidence among the private entrepreneurs about the industrial policy and to boost up private investment. However, the payment of purchase price instalments by the privatised enterprises has been very poor.

1.8.6 Performance during Fourth Plan: During the Fourth Plan period, the annual growth rate of industry was 7.05 per cent. This was below the targeted growth rate of 9.02 per cent. During this period, the industrial sector provided employment to 1.32 million persons against the benchmark of 2.52 million persons. The private sector largely provided the new

employment opportunities. During the Plan period, production of jute goods, fertiliser, cement, paper and newsprint and sugar was more or less close to their respective targets. Due to various reasons like mismanagement, obsolete machinery, lack of fund and proper planning, industrial unrest, power failure, etc. growth in this sector was impeded. In current prices, foreign exchange earnings from major industrial products increased continuously though slowly. During the Plan period, the aggregate level of private investment was about Tk.99 billion against the public sector investment of Tk.5.03 billion at 1989/90 prices. Most of the public corporations of this sector incurred losses during the Plan period; hence, the government emphasised the policy of privatisation.

1.8.7 Reforms and privatisation: A number of reform measures in the industrial, financial and trade sectors were undertaken during the Plan period in pursuit of a more open and competitive economy. In the industrial sector, the reform measures may be categorised as under :

- a. Reorganisation of public sector
- b. Privatisation
- c. Liberalisation

1.8.8 In order to improve operational efficiency and economic viability of the state owned enterprises (SOE), a number of measures were undertaken. The issue of conversion of enterprises into public limited companies and holding companies was a very widely discussed subject. However, the policy could not be implemented. The pace of other reform measures including performance evaluation of the corporations against set targets, operation of the enterprises in accordance with company laws, induction of experienced personnel in the board of directors, etc., were either slow or at a stand-still.

1.8.9 There was a stiff resistance particularly from the workers against privatisation. There was also no clear policy as to whether the losing enterprises or the profitable ones would come first for privatisation. Decision was taken to privatise 22 jute mills and 20 textile mills. So far, one jute mill and 3 textile mills have been privatised and 3 units of the Chemical Industries Corporation were sold to the private sector.

1.8.10 Jute: The jute industry is the most important sub-sector of the economy of Bangladesh. But due to unfavourable international demand, the industry has been incurring losses facing severe liquidity crisis. The Fourth Plan set the production target of jute goods at 715 thousand mt — 410 thousand mt in the public sector and 305 thousand mt in the private sector in the terminal year of the Plan. Bangladesh Jute Mills Corporation (BJMC) produced 272 thousand mt of jute goods and the private sector produced 150 thousand mt.

1.8.11 A total of 154,933 persons were employed by BJMC in 1989/90. The size of manpower was reduced to 121,338 persons at the end of the Fourth Plan, following government policy for reduction of manpower in public enterprises. The total export earnings of BJMC during the Fourth Plan were Tk.26.28 billion from exports of 1,285 thousand mt of jute goods. On the other hand, member mills of the Bangladesh Jute Mills Association (BJMA) exported about 614 thousand mt of jute goods.

1.8.12 Textiles: The main focus of the textile sector during the Fourth Plan period was on generation of employment, private investment, export, rationalisation of tariffs, providing monetary and fiscal incentives, product diversification and horizontal market expansion, etc. Production targets were 204 million kg. of yarn and 1.93 billion meters of cloth. Actual production during 1994/95 was 96.50 million kg. of yarn and 1.04 billion metres of cloth.

1.8.13 During the Fourth Plan the Ministry of Textiles and its agencies focused their programmes on balancing, modernisation, replacement and expansion of the selected old mills. Private investment was given preference in the field of spinning, weaving, knitting, dyeing and finishing and garments making.

1.8.14 The target set for employment generation in the textile sector was 1.79 million numbers. As against this target, only 0.80 million people were employed. High prices of inputs, stiff external competition in yarn and fabric markets and weak institutional back-up were responsible for the slow response of the textile sector excluding garments. As a result, textile sub-sector was not able to generate the targeted employment.

1.8.15 Chemical industries: The most important entities of this industrial sector are the urea factories of the Bangladesh Chemical Industries Corporation (BCIC). Out of such six factories, five are in the public sector. During the Fourth Plan, fertiliser output grew at an annual rate of 5.75 per cent and the overall growth of chemical industries including pharmaceuticals was 9.92 per cent. During the Plan period, the Corporation was however financially strained due to official regulation of their product prices such as for urea and newsprint.

1.8.16 Small and cottage industries (SCI): Promotion of small, cottage and rural industries was given high priority during the Fourth Plan period. The public sector programmes of this sub-sector were focused on promotional measures like development of industrial estates, training, extension and research, market promotion, supply of institutional credit, equity support, etc.

1.8.17 In order to achieve the objectives and targets set forth in the Plan, a comprehensive programme both for the public and private sectors was undertaken with an allocation of Tk.2.54 billion to the public sector and Tk.13.6 billion to the private sector. Allocation was subsequently revised to Tk.2.02 billion to the public sector and Tk.17.55 billion to the private sector.

1.8.18 The public sector spent Tk.1,391.7 million. Estimated private investments in small and cottage industries during the Plan period were Tk.17.91 billion and Tk.582.2 million respectively. During the Fourth Plan period 47,982 units of small and cottage industries were established against the target of 50,723 units.

1.8.19 At the end of the Plan, actual contribution of the SCI sector to GDP was 5 per cent against a target of 7.5 per cent. Target for employment generation was 0.4 million against which about 0.30 million employment opportunities were created.

1.9 Power and Gas

1.9.1 The Fourth Plan had an investment allocation of Tk.64.5 billion at 1989/90 prices for the power sector. This allocation was inadequate compared to the production targets. Due to the shortage of both local and external resources the Plan allocation as well as Plan targets had to be revised downward. The revised allocation for the power sub-sector was Tk.45.36 billion at 1989/90 prices against which Tk.67.48 billion was spent at current prices. Major physical targets as well as achievements during the Plan period are shown in Table 1.17.

Table 1.17
Targets and Achievements of Power Sector During Fourth Plan

Agency	Particulars	1989/90 (Benchmark)	1994/95 (Terminal Year)		
			Target	Achievement	
				New addition	Cumulative position
1	2	3	4	5	6
BPDB	Installed capacity (MW)	2,352	2,878	581	2,908*
	Capabilities (MW)	1,834	2,743	581	2,133**
	Transmission line (km) 230 KV, 132 KV, and 66 KV	2,652	3,151	507	3,159 (including DESA)
	Grid Substation capacity (MVA) 230 KV, 132 KV and 66 KV	4,750	2,621	2,369	7,119
	Distribution line (km) 33 KV and below	33,441 (excluding DESA)	36,734	1,252	34,693
	Consumer connection (No.)	850,438	1,050,000	225,296	1,075,734
REB	Distribution line (km)	35,333	64,333	29,853	65,186
	Electrified village (No.)	8,545	14,530	7,939	16,484
	Consumer connection (No.)	495,565	978,565	679,006	1,174,571
DESA	Transmission line (km) 132 KV	403	-	45	448
	Distribution line (km)	3,465	6,765	1,995	5,460
	Consumer connection (No.)	324,134	570,000	192,326	516,460

Note: * 2352 MW+581 MW new - 25 MW retired/standby = 2908 MW

** 1834 MW+581 MW new - 11 MW retired - 271 MW derated/decrease for maintenance and rehabilitation = 2133 MW

1.9.2 The forecast peak demand of 2,485 MWs for the terminal year of the Fourth Plan could not be met due to shortage of available generation capacity. The peak demand served by the end of the Plan period was 1,970 MWs. This gave an annual growth of 4.80 per cent. The targeted generation in the Plan period was 55,735 GWh and achievement was 46,962 GWh. As a result, there followed load shedding.

1.9.3 The system loss in BPDB, REB and DESA was 41.11 per cent, 16.27 per cent and 35.55 per cent respectively in the first year (1990/91) of the Fourth Plan. The combined system loss envisaged in the Fourth Plan was 25 per cent. To reduce the system loss, some measures were taken such as creation of DESA and introduction of incentive/punishment scheme to improve overall performance as well as introduction of a new commercial operation system.

1.9.4 During the Fourth Plan period, total ADP allocation for Bangladesh Oil, Gas and Mineral Corporation was Tk.23.98 billion. The actual utilisation against the financial target was Tk.15.32 billion. Petrobangla produced 247 BCF of natural gas in 1994/95 as against the target of producing 275 BCF but consumer connections (631,710 customers) exceeded the Fourth Plan target. BOGMC continued its exploration, appraisal, seismic survey activities, etc., as per their programmes.

1.10 Transport and Communication

1.10.1 Transport and communication play a vital role in facilitating the growth of the economy as they provide the essential services for movement of people and goods and help exchange business information.

1.10.2 Transport : During the First Plan, rehabilitation was the main focus of the transport sector programme to regain the pre-liberation operational efficiency as well as to meet the rising traffic demand of the economy. Tk.5.28 billion was allocated for this sector during the

Plan period. Major physical achievements were reconstruction and rehabilitation of war-damaged bridges and roads and construction of 8 new major road bridges, pavement of about 500 miles of new roads, construction of two new airports (Dhaka International Airport and Saidpur Airport), reconstruction of 6 old jetties of the Chittagong sea port, procurement of locomotives, coaches and wagons for the Bangladesh Railways and procurement of over 500 new buses by the Bangladesh Road Transport Corporation to augment urban transport.

1.10.3 Due to shortage of funds, a large number of on-going projects spilled over to the Two Year Plan (TYP) and the major objective of the TYP was to complete those on-going projects.

1.10.4 During the Second Plan period, the allocation to the transport sector was Tk.12.86 billion (1980 prices). In Railway sub-sector, 684 km of tracks were renewed. Railways have been persistently incurring losses since liberation except in the years 1973/74, 1975/76 and 1978/79, which affected maintenance programme adversely as well as efficiency. The most important development in the road sub-sector was the construction of Khulna-Mongla Road and upgrading of the Dhaka-Chittagong and Dhaka-Aricha Road. Out of 19 war-damaged bridges, 11 were rehabilitated.

1.10.5 During the Third Plan period, a total of Tk.30.02 billion was allocated to the transport sector (at 1984/85 prices). The share of various sub-sectors were: Railway Tk.8.36 billion (27.85%); roads Tk.11.85 billion (39.48%); water transport Tk.5.71 billion (21.65%) and air transport Tk.2.10 billion (6.99%). The salient feature of the road sector programme was undertaking the Bangabandhu Bridge. Some 744 km of paved road and 10,249 metres of bridges and culverts were constructed.

1.10.6 Under the Fourth Plan, the total allocation to the transport sector was Tk.63.73 billion (including the Bangabandhu Bridge). An allocation of Tk.10.0 billion in 1989-90 prices was earmarked for the Bangabandhu Bridge. Some 4,650 km of paved roads and 29,000 metres of bridges and culverts were constructed/reconstructed. Most importantly, 3 bridges on major rivers were completed. Under Railway sub-sector, 693 km Metre Gauge (MG) and 287 km Broad Gauge (BG) railway track were rehabilitated, 84 Narrow Gauge (NG) and 24 BG bridges were completed and a new railway station was constructed at Tarakandi in 1992 for transportation of fertiliser from the Jamuna Fertiliser Factory. A modern workshop for heavy repair and major overhauling services with an annual target of 120 locomotives was set up at Parbatipur in 1992. During the Plan period, 21 BG passenger carriages, 3 (2 MG and 1 BG) cranes and 9 MG locomotives were procured.

1.10.7 In the Fourth Plan period, the Civil Aviation Authority of Bangladesh took up projects for strengthening of runways, extension of international passenger terminal, construction of cargo complex, installation of boarding bridge and construction and development of airports and related facilities.

1.10.8 The sectoral allocation during 1995/96 was Tk.21.53 billion. Against this allocation, utilisation during this year was Tk.20.10 billion. In 1996/97, allocation was Tk.23.32 billion, against which utilisation up to January 1997 was Tk.9.68 billion.

1.10.9 Communication: During the First Plan, the total allocation for the communication sector was Tk.1.18 billion out of which Tk.1.07 billion was utilised. The targets could not be achieved due to fund shortages.

1.10.10 During the Two Year Plan period, the total allocation for the communication sub-sector was Tk.1.3 billion and the expenditure was Tk 940 million. The task of the Two Year Plan was mainly to complete the unfinished works of the First Plan.

1.10.11 During the Second Plan, the allocation for this sector was Tk.3.41 billion but the actual expenditure was Tk.3.47 billion. A sum of Tk.390 million was provided for the Thanas and Chittagong Hill Tracts development.

1.10.12 The total allocation during the Third Plan period was Tk.3.88 billion and the actual total expenditure was Tk.6.38 billion. During the period, 59,190 telephone lines were installed against the target of 75,000 lines. Automatic telephone exchanges were established in 28 important Thana towns as against the target of 42 exchanges. In the post-office sub-sector, Tk.370 million was spent against the allocation of Tk.380 million. Three hundred and fifty eight new post-offices were set up against the target of 500.

1.10.13 The total allocation for the Fourth Plan period was Tk.6.52 billion of which Tk.12.13 billion was utilised. During the Plan period, the objectives of the communication sector were expansion of services including that in the rural areas and modernisation of the telecommunication system. A total of 72,507 telephone lines against the target of 103,658 was installed. But the services expanded mainly in the urban areas although 4,706 manual lines against the target of 2,758 were installed in the rural areas.

1.10.14 The sectoral allocation during 1995/96 was Tk.3.52 billion, against which utilisation was Tk.2.90 billion. In 1996/97, the allocation was Tk.2.25 billion; against this allocation utilisation up to January 1997 was about Tk.1.05 billion.

1.11 Physical Planning Water Supply and Housing

1.11.1 In order to provide different services to the growing urban population an amount of Tk. 2.72 billion was allocated for the physical infrastructures during the First Plan, out of which Tk. 2.7 billion was spent. During the Two Year Plan, the amount allocated was Tk.2.5 billion against which Tk.2.41 billion was spent. The expenditure was mainly for construction of public servants housing, office buildings, etc. However, about 1,50,000 squatters were relocated; 3,00,000 shallow drinking tube-wells were sunk and 8,456 housing units and 2000 plots were developed till 1979/80.

1.11.2 During the Second Plan, Tk.8.2 billion was allocated against which Tk.7.39 billion was utilised. In addition, Tk.3.19 billion was spent for development of infrastructure facilities like construction of offices and residential buildings at the thana centres for supporting administrative reform.

1.11.3 Third Plan allocation for this sector was Tk.5.5 billion. Actual allocation through ADPs was Tk.9.27 billion at current prices and the amount spent was Tk.8.6 billion. In addition, Tk.6.96 billion was provided for the development of Zilla and Thana infrastructure from the bloc allocation. The entire amount was spent.

1.11.4 An amount of Tk.18.42 billion (at 1989/90 prices) was allocated in the Fourth Plan, but Tk.20.58 billion (at current prices) was allocated through ADPs and Tk. 20.94 billion (at current prices) was spent. Land Use Master Plan for 398 thanas and 60 district towns were completed. Core house for 1000 squatter families was provided and 5000 service plots in Dhaka and 4100 in Chittagong were developed. In addition, 3000 government quarters and 44 circuit houses in 44 newly created districts and 3000 quarters in Dhaka were constructed. Installation of water supply and sanitation facilities were taken up in different thanas. Sanitation coverage in rural Bangladesh went up to 36 per cent. Against the target of 105

MGD water production in the district towns, the achievement was 65 MGD. In case of rural water supply, the coverage of person per tubewell was improved to 107 in 1995 against 125 in 1990.

1.12 Education

1.12.1 Education is one of the basic needs for developing human capabilities. In Bangladesh, educational development was not adequate in the past to meet this human need. In 1981, only 19.70 per cent of the population was counted as literate against 17.00 per cent in 1961. The gap of literacy rate between the urban and rural areas was also striking - 35 per cent in urban and 17 per cent in rural areas in 1981. Gender difference in attaining literacy also was no less striking. The female literacy rate was 13.20 per cent in 1981 while that among men was 26 per cent.

1.12.2 Past performance: The Plan allocation for education during the First Plan and the Two Year Plan (TYP) periods together was Tk.4.54 billion but because of resource shortfall, allocation was later on reduced to Tk.2.59 billion.

1.12.3 The Second Plan accorded top-most priority to the introduction of the Universal Primary Education (UPE) programme. The outcome was not satisfactory. Against a target of 13 million primary enrolment, actual achievement was 8.92 million. This was mainly due to the inability to create adequate physical facilities. The Mass Education Programme also suffered due to lack of motivation as well as weak supervision. Only 0.7 million people in the age group 10-45 could be made literate while the target was 4.0 million. Community schools were run to impart vocational and technical training to the adult population.

1.12.4 During the Third Plan, the major objective of the primary education sub-sector was to enrol 11.60 million school age children by 1990. Against an estimated primary age-group population of 14.9 million in June, 1990, schools enrolled 80.54 per cent compared with 52 per cent in June, 1985. A total of 1000 non-government primary schools were nationalised to add to the 36,881 government primary schools existing upto June, 1985. The floods of 1987 and 1988 caused serious damage to the educational institutions, particularly in rural areas. In 1987-90, two major rehabilitation programmes were implemented covering about 1,430 educational institutions. The number of secondary education institutions increased to 10,448 in 1990 from 9,440 in 1985. The enrolment in schools also increased from 2,583,311 in 1985 to 2,993,730 in 1990. In the course of the Third Plan, 13 new departments/institutes were established in different universities of the country with an added enrolment of 2,253. Two new universities, one each at Sylhet and Khulna, were also established to provide higher education.

1.12.5 Primary and mass education: The Fourth Plan objectives for expanding primary and mass education were to introduce compulsory primary education, reduce mass illiteracy, ensure optimum use of existing facilities, maintain regional balance in respect of the growth of educational facilities, ensure enhanced participation of women and inculcate ethical values in the society.

1.12.6 The major strategy in the field of primary education was the introduction of compulsory primary education (CPE). In order to provide effective administrative and policy support to primary and mass education, the Primary and Mass Education Division started operation in September 1992. The enrolment in primary schools increased from around 12.0 million in 1990 to 17.3 million in 1995. Completion rate of primary education cycle increased from 41 per cent in 1991 to 60 per cent in 1995. Food for Education was an important programme to increase enrolment and reduce drop-out among the poor children.

1.12.7 Two major projects in the primary education sub-sector, namely, 'Development of Primary Education in Dhaka, Rajshahi and Khulna Divisions' and 'Development of Primary Education in Chittagong Division' were taken up. Under these two projects, a total of 1,134 low cost schools were constructed, 5,082 government primary schools were reconstructed and 3,932 schools were repaired, 39 District Primary Education Office (DPEO) and 52 Primary Teachers Training Institutes (PTI) were developed. Besides, under the flood rehabilitation projects, 1,620 flood-affected government primary schools were reconstructed and 4,152 schools were repaired during 1991-95. Under the cyclone rehabilitation projects, reconstruction work of 897 and repair work of 1,695 government primary schools were completed till June 1995. In addition 20 government primary schools in flood-free areas were completed under the Government Primary School Rehabilitation Project during the Plan period.

1.12.8 In order to meet the growing demand for universalisation of primary education, a development programme for the reconstruction of 7,832 and repair of 998 registered non-government primary schools was under implementation with domestic resources. Up to June 1995, reconstruction of 7,232 and repair of 580 registered non-government primary schools were completed while the work on 718 registered schools remained at various stages of development. Besides, 689 government primary schools were reconstructed and 1,518 primary schools were repaired.

1.12.9 Due to the introduction of CPE, social mobilisation programmes and 'Food for Education Programme' coupled with infrastructural development and improvement of school management and supervision system, the enrolment rate at the primary level increased to 92 per cent (17.3 million) in 1995 while the rate was 70 per cent (12.1 million) in 1990. Participation of girl students at all levels increased. The girls' enrolment at the primary and secondary levels increased particularly due to the introduction of free education for girls up to grade 10 and provision of stipends for girls in the rural areas. In primary education, the number of girl students increased from 5.4 million to 8.2 million while in the secondary level, the number increased from 1.05 million to 2.40 million. The percentage of female teachers increased from 21 per cent in 1990 to 27 per cent in 1995 as a result of the amendment of the recruitment rule requiring 60 per cent of the posts of the primary school teachers to be filled up with the female teachers. Under the mass/non-formal education programme, projects were undertaken for 1.6 million targeted beneficiaries.

1.12.10 Secondary and higher education: The government had taken up expansion programmes at the secondary and higher secondary levels in order to accommodate increased number of students. As such, the allocation for educational programmes through ADPs also increased to Tk.14.45 billion which was 31 per cent higher than the Plan allocation. Enrolment at the secondary level increased from around 3.0 million in 1990 to 4.4 million in 1995 and that at the college level from 0.9 million to 1.46 million. In technical education, enrolment nominally increased from 6,685 to 7,255. Though there had been a quantitative expansion in different areas of secondary and higher education, qualitative improvement of education could not reach a satisfactory level.

1.12.11 Enrolment at the university level increased from 34,902 in 1990 to 60,000 in 1995. An amount of Tk. 2.29 billion was spent mostly for civil works in 11 public universities, but important programmes such as curricula development/reform, modernisation of laboratories/equipment, training of teachers, development of libraries etc., fell short of their targets. However, a number of private universities were permitted to start their activities.

1.13 Population and Family Welfare

1.13.1 During the period of 1969-72, the family planning programme was virtually at a standstill owing to political disturbance, war of liberation and resettlement problems in the early post-Independence period. During the next two years, not much could be done in this sector because of the nation's pre-occupation with the rehabilitation and reconstruction of the economy. In November 1974, however a separate Population Control and Family Planning Division with elaborate field and national structures was set up.

1.13.2 In the First Plan (1973-78), a nation-wide population control programme was drawn up at an estimated cost of Tk. 700 million which was revised up to Tk. 900 million at the time of preparation of the Hardcore Programme (1975-78). For the Two Year Plan (1978-80), an allocation of Tk. 1.0 billion was made.

1.13.3 In view of the fast growing population adversely affecting socio-economic progress, population control and family planning received the highest emphasis during the Second Plan. This led to very ambitious targets also in terms of population growth rate, contraceptive prevalence rate (CPR) and net reproduction rate (NRR). The Plan envisaged to reduce population growth rate to 1.80 per cent in 1984/85 and to increase CPR to 47 per cent with a view to reaching NRR-1 in 1990. The actual achievements in all these areas were far below the targets envisaged. The growth rate of population was around 2.40 per cent, CBR was 39/1000 population and CPR was 25 per cent only in 1984-85.

1.13.4 Nevertheless, efforts of the Second Plan began to yield their long term effects. Over the Third Plan period, the rate of population growth declined from 2.40 per cent in 1985 to 2.15 per cent in 1990 as against the target of 1.82 per cent. During the same period, the CPR increased from 25 per cent to 39.00 per cent against the target of 40 per cent. Consequent upon intensive efforts, infant mortality and maternal mortality rates reduced to 94 and 6.0 respectively per 1000 live births in 1990.

1.13.5 In the Fourth Plan period, the rate of population growth declined from 2.15 per cent in 1990 to 1.85 in 1995. The results of various population planning and family welfare programmes are shown in Table 1.18.

Table 1.18
Demographic Achievements During Fourth Plan

Indicators	1990	1995 (Target)	1995 (Achievement)
CBR (per 1000 population)	33.50	28.90	27.50
CDR (per 1000 population)	12.00	10.70	9.00
Population Growth (%)	2.15	1.82	1.85
IMR (per 1000 live births)	94	80	78
MMR (per 1000 live births)	6.00	4.50	4.50
CPR (%)	39.00	50.00	48.00
TFR (per woman)	4.90	4.00	3.40
Life expectancy at birth	54	58	58

1.13.6 In 1995/96, a total of 44 projects spilled over from the Fourth Plan. The number of projects in 1996/97 stood at 46 of which 35 projects will spill over to the Fifth Plan. During 1995-97, allocation was Tk.9.69 billion (at current prices) and the estimated expenditure was Tk.8.33 billion (at current prices).

1.14 Health

1.14.1 Health is one of the basic requirements to improve the quality of life. Since Independence, the government has been consistently attempting to formulate policies for providing essential/minimum health care to all, particularly to the underprivileged.

1.14.2 During the Second Plan, the government adopted the goal of "health for all by 2000 AD". At the beginning of the Plan, only 30 percent of the population was covered by essential health care services. However, some major epidemics and endemic diseases were eradicated (e.g., small pox) or were virtually brought under control (e.g. cholera). The Second Plan emphasised the development of health infrastructures in rural areas. A drug policy was adopted in 1982 to make drug supply cheaper.

1.14.3 Health sector programme in the Third Plan was based essentially on Primary Health Care (PHC) for providing a minimal level of health care to all. In order to achieve this, 374 Thana Health Complexes (THC) against the target of 397 were made functional. To increase availability of health facilities the number of hospital beds in the country were increased to 34,488 (24,501 in the public sector) giving a bed-population ratio of 1:3200. Under the immunisation programme, the coverage achieved was 75 per cent for BCG, 68 per cent for DPT, 50 per cent for measles, 68 per cent for polio and 45 per cent for TT (pregnancy).

1.14.4 In the absence of a comprehensive national health policy, the development programmes of the health sector during the Fourth Plan was guided by the policies pursued in the previous Five Year Plans. The review of the Fourth Plan revealed both progress and shortfalls in achievements compared to the targets. Infant mortality rate per thousand live births declined from 94 in 1990 to 78 in 1995; the maternal mortality rate declined from 4.7 in 1992 to 4.5 in 1995 and life expectancy at birth increased from 56.1 in 1991 to 58 years in 1995. There were however shortfalls in achievements compared to the targets in immunisation coverage, primary health care, delivery services by trained medical persons, ante-natal care, development and deployment of trained manpower, infrastructure building construction (Thana Health Complex, FWC), etc.

1.14.5 During the Fourth Plan, allocation for the health sector was Tk. 10.6 billion. Against this allocation, a total of Tk.12.10 billion (at 1989/90 prices) was made available through the ADPs of which Tk.9.83 billion was utilised .

1.14.6 On completion of the Fourth Plan, 76 projects spilled over to 1995/96 and the major programmes continued with an allocation of Tk.4.17 billion. The amount spent during the year was Tk.2.76 billion. In 1996/97, the allocation was Tk.5.85 billion and the expenditure was Tk.5.0 billion.

1.15 Sports and Culture

1.15.1 Sports: Sports is considered as one of the major elements needed for developing sense of discipline, good physical and mental health and character of the citizens.

1.15.2 The First Plan laid the foundation for development of essential elements of physical education. During the Plan period, a number of development projects were undertaken mostly for repair and renovation of existing sports facilities to make them functional and creation of new physical facilities in the country. During the Second Plan some measures were adopted for qualitative improvement as well as for quantitative expansion of sport facilities. During this period, 14 gymnasium-cum - coaching centres at District Headquarters and a National Tennis Complex at Dhaka were built. In addition 33 sub-divisional stadia were made

functional and the construction of stadia at Chittagong, Rajshahi and Khulna Divisional Headquarters and Bangladesh Krira Shikkha Protisthan (BKSP) was started.

1.15.3 During the Third Plan, construction of 6 gymnasium-cum-coaching centres at District Headquarters, National Stadium-2 with flood light and shifting of 7 clubs from National Stadium-1 area to other places were completed. In addition, two physical colleges at Dhaka and Rajshahi were completed. Bangladesh Krira Shikkha Protisthan (BKSP) started its krira college.

1.15.4 During the Fourth Plan, an allocation of Tk.760.0 million was made for this sub-sector and measures were taken for further qualitative improvement and quantitative development of sports and games. Projects taken included further development of 52 district stadia, construction of one International Standard Swimming Pool and Indoor Stadium, vertical extension of Hockey Stadium with synthetic turf, laying of synthetic athletic tracks in National Stadium-2, modernisation of Gulshan shooting range in Dhaka and development of tennis complexes in Dhaka and Rajshahi. During the Plan period, the third phase of Bangladesh Krira Shikkha Prothisthan (BKSP) was completed at a cost of Tk.150.0 million. The most important event was the 6th SAF games organised successfully in Dhaka during this Plan period.

1.15.5 During 1995-97, a total of 21 projects were under implementation of which 13 projects spilled over from the Fourth Plan and an amount of Tk.192.31 million was spent upto June 1996. In 1996/97, the total number of projects included were 21 and the allocation during the period was Tk.373.90 million.

1.15.6 Culture: Cultural development is one of the indicators of overall development of a nation. Development programmes for this sub-sector were first initiated from the period of the Second Plan. During that period, some infrastructure facilities were developed and some publications of Bengali text books for higher education were made. Besides, research work on Bengali language and literature was emphasised. During the Third Plan period, some more infrastructural facilities were provided.

1.15.7 An amount of Tk.700.0 million was allocated for this sub-sector during the Fourth Plan period and Tk. 533.11 million was utilised. Programmes emphasised: (a) research and publication on Bangla language and literature, and use of Bangla for higher education, (b) library development; (c) promotion of fine and performing arts; and (d) conservation, preservation and presentation of folklore, history and heritage, etc.

1.15.8 During 1995-97 an amount of Tk.347 million was allocated out of which Tk.298.70 million was spent upto June, 1997. During the period 1995-97, major programmes of the Fourth Five Year Plan continued and a total of 5 projects were completed.

1.16 Social Welfare Women Affairs and Youth Development

1.16.1 Social welfare: Social service programmes assist and empower socio-economically disadvantaged people like the poor, the landless, the unemployed, children in especially difficult circumstances, the disabled and distressed people and the vagrants and orphans. Attempts were made during the First Plan to give due emphasis on the role of the social welfare sector in the overall socio-economic development of the country and to adopt programmes for the benefit of those who were unable to find a place for themselves in the society. Forty rural thanas were covered under rural community development programmes to make the disadvantaged groups and the landless people more productive through skill training and production-oriented programmes. Under the urban community development programmes,

68 centres were established to render vocational training to slum dwellers. During the First Plan period, Tk.122.8 million was allocated which was almost fully utilised. During the Two Year Plan, an allocation of Tk.136.0 million was made to complete the on-going projects against which Tk.112.98 million was utilised. During the Second Plan, an amount of Tk.590.0 million was allocated and Tk.391.0 million was utilised. During this Plan period, a rural community development programme was undertaken with the focus on disadvantaged groups including women for skill training and education. The programme covered 104 thanas and established 196 community centres.

1.16.2 A total of Tk. 750.0 million was allocated for the social welfare programmes in the Third Plan. The expenditure was Tk. 630.0 million. The programmes undertaken during the Third Plan period emphasised provision of institutional services for the rehabilitation of the orphans and the physically handicapped. A total of 18,000 handicapped persons and 12,000 orphans were provided with institutional services during the Plan period.

1.16.3 In the social welfare sector, the major theme of the Fourth Plan was poverty alleviation and human resources development. A total of Tk.1.32 billion was allocated through ADPs to the social welfare programmes during the Plan period and the expenditure was Tk.1.15 billion. The most important project of social welfare sector was "Rural Social Service" which included group organisation, skill development training, income and employment generation through various financial support in the form of interest free loans, promotion of self-supporting funds, motivational programmes for family development and population planning, social forestry, social education, etc. Approximately, 1.5 million people benefited as a result. In many urban areas, a programme for welfare of children in specially difficult circumstances was initiated through which about 15,000 children were benefited. Under institutional services, projects covered the welfare of 4,000 orphans, 400 disabled, 150 juvenile delinquents, 2,700 vagrants and destitutes. Joint programmes with NGOs benefited about 1 million distressed and disabled people.

1.16.4 During 1995-97, a total of 30 projects including 13 spillover projects were financed and an amount of Tk.973.0 million was allocated. The expenditure during the period was Tk.899.54 million. During the period of 1995-97, implementation of major programmes of the Fourth Plan continued.

1.16.5 Women and children affairs: During the First Plan, a programme, entitled "Rehabilitation of War Affected Destitute Women and Children" was undertaken under the social welfare sector. In the Two Year Plan, women's development received special priority and Tk.105.6 million was allocated. The Second Plan emphasised training and creation of employment opportunities for women. An amount of Tk.310.0 million was allocated.

1.16.6 During the Third Plan, the programmes on women's affairs aimed at promoting activities for overall development of women and children. To increase female employment in the public and private sectors, a number of measures were taken by the government which included reservation of 15 per cent jobs for women in the public sector and raising the age limit for entry into public service up to 30 years. Under the women's affairs sub-sector, around 60,000 women were trained in different vocational skills and other human resources development activities; about 0.2 million women were given non-formal education and 20,000 women were provided with credit facilities for self-employment.

1.16.7 To help increase women's participation in development activities and to realise the ultimate goal of equality, development and peace of the UN Decade the Fourth Plan attempted to integrate women's development into the macro framework for multi-sectoral

thrust in order to bring women in the mainstream of socio-economic development. But a comprehensive national policy for women's development was missing. Though a National Council for Women's Development (NCWD) was formed during the Fourth Plan for inter-ministerial co-ordination and monitoring the WID activities, satisfactory progress could not be made due to lack of co-ordination among different government organisations and between government and NGOs. The Ministry of Women and Children Affairs has identified and designated focal points in 32 ministries/ agencies for WID activities.

1.16.8 Under various projects, 63,127 women were trained in different vocational skills and other human resources development activities, about 86,304 women were given non-formal education and other services and 34,629 distressed women were brought under credit facilities programme for self-employment. A total amount of Tk.1.28 billion was distributed as loan on easy terms. In addition, a loan amount of Tk.2.85 billion was distributed among 9,080 poor women under the Prime Minister's Special Fund. Besides, there was a separate allocation of Tk.100 million for Bangladesh Shishu Academy for undertaking development activities for children all over the country. Food for Work (FFW), Vulnerable Groups Development (VGD) and Rural Maintenance Programme (RMP) employing destitute women were also undertaken. The total revised allocation for the Ministry of Women and Children Affairs was Tk.550.0 million in the Fourth Plan out of which Tk.545.0 million was utilised upto June 1995.

1.16.9 During 1995-97, an amount of Tk.659.20 million was allocated and Tk.651.12 million was spent upto June, 1997. A total of 20 projects were undertaken and two of them were completed.

1.16.10 Youth development: Separate youth programme at government level started in 1979. During the Two Year Plan, an amount of Tk.95.0 million was provided for youth development programmes out of which Tk.70.10 million was utilised. The physical target fixed for the Two Year Plan was to train 42,255 unemployed youths against which 36,200 were trained.

1.16.11 During the Second Plan, an amount of Tk.255.0 million was allocated for youth development. A total number of 163,070 youths received training in different vocational trades, livestock and poultry farming, telecommunication, secretarial science, agriculture, fisheries, driving auto-rickshaws, etc. About 3000 trained youths undertook self-employment projects.

1.16.12 An amount of Tk.170.0 million was allocated for youth development activities during the Third Plan. An additional amount of Tk.760.0 million was allocated for implementation of a new project named "Thana Resource Development and Employment Project" (TRDEP). In two phases, 32 thanas came under this project. During the Third Plan period, 42,937 unemployed youths were trained in different trades against the target of 43,935 and 17,739 youths took up self-employment programmes till June, 1990 against the target of 18,830.

1.16.13 During the Fourth Plan period projects/programmes were undertaken to provide unified direction and co-ordination of youth development programmes. The Plan envisaged programmes for the youth for poverty alleviation, skill development training, self-employment promotion, and community development through voluntary youth organisations. A total of 254,074 unemployed youths were trained and 50,808 youths were self employed.

1.16.14 During 1995-97, a total of 10 projects were included in the ADP of which 5 projects spilled over from the Fourth Five Year Plan and an amount of Tk.907.79 million was spent upto June,1997 at current prices against an allocation of TK.1.34 billion.

1.17 Mass Media

1.17.1 A total of Tk.500.00 million was allocated in the Third Plan of which an amount of Tk.342.4 million was spent during the Plan period. A project entitled "Establishment of 3 Low Power Transmitters" was undertaken to establish 3 radio stations at Comilla, Rangpur and Thakurgaon. The project "Establishment of 100 kw Transmitter in the Northern Zone, Bogra" was commissioned during this period. Besides, the project entitled "Further Development of BTV including construction of office building/ Garage-cum-Workshop" was completed.

1.17.2 During the Fourth Plan, an amount of Tk.1230 million was allocated for the sub-sector and 21 projects were undertaken. The amount spent was Tk.1.36 billion at current prices. For various reasons, only two projects of Bangladesh Betar could be completed.

1.17.3 In 1995-97, a total of 29 projects were included in the ADP of which 13 projects were spilled-over from the Fourth Plan. The expenditure during the period was Tk.506.0 million at current prices. During the period 1995-97, major programmes of the Fourth Five Year Plan continued and only 5 projects were completed.

1.18 Science and Technology

1.18.1 Breakthrough in science and technology is the key to rapid economic development in modern world. As such, the government has consistently tried to formulate appropriate science and technology related policies. One of the basic elements of these policies is to encourage research and development. Main institutional facilities were built up during the Second Plan for these purposes, while the Third Plan focused on research activities.

1.18.2 During the Fourth Plan period, an amount of Tk.540 million was allocated for this sub-sector out of which Tk.518.70 million was spent. Bangladesh Atomic Energy Commission (BAEC) established 4 Nuclear Medicine Centres (NMC) at Khulna, Mymensingh, Rangpur and Barisal. It also continued its research activities in different fields like food irradiation and preservation, isotope production, etc. The other important project on which BAEC started work was "Renovation of Beach Sand Exploitation Centre at Cox's Bazar and Balancing, Modernisation, Rehabilitation and Extension of Pilot Plant". Research activities carried out by the Bangladesh Council of Scientific and Industrial Research (BCSIR) during the period were on fuel, herbal medicine, foodgrains, etc.

1.18.3 During the Fourth Plan period, Bangladesh Computer Council (BCC) provided computers to one hundred secondary schools for conducting training on computer.

1.18.4 During 1995/96, an allocation of Tk.275.0 million was made available for 33 projects of which 25 were spill over from the Fourth Plan. A total of 4 projects were completed and the expenditure during the period was Tk.159.50 million. In 1996/97, an allocation of Tk.380.20 million was made available for 34 projects.

1.19 Labour and Manpower

1.19.1 Development of skill and its optimum utilisation constitute one of the basic elements of economic growth and income generation. Increasing productive employment is an important goal of development. However, in the process of growth, such opportunities will increasingly depend on both deepening and widening of human skills.

1.19.2 Prior to the First Plan, Bangladesh had only a small institutional network consisting of one Industrial Relations Institute (IRI), 18 Labour Welfare Centres, 5 Employment Exchanges, 4 Vocational Guidance and Youth Employment Units, one Management Development Centre and 5 Technical Training Centres. These facilities and institutional arrangements were equipped, managed and run under severe constraints of both financial and human resources. Against this background, the First Plan allocated Tk.276.90 million with the objectives of expanding facilities for training engineering craftsmen, raising the volume of employment, enhancing labour welfare facilities and cultivating healthy labour relations. Subsequently, due to financial constraints, the allocation was reduced to Tk.120.00 million in the Hard-core Programme and still further through the revised ADPs.

1.19.3 As financial performances had severe shortfall, the physical progress also remained unsatisfactory. During the Second Plan, Tk.1.12 billion was allocated for strengthening the institutional network for skill development, expansion of the institutional infrastructure for overseas as well as in-country employment promotion including self-employment, enhancement of labour welfare, improvement of industrial relations and manpower research and evaluation. During the Third Plan, priority was given to training programmes for skill development through the institutional network of 12 Technical Training Centres (TTC) including the Bangladesh Institute of Marine Technology (BIMT). By the end of the Third Plan, the country had a network of 21 District Employment and Manpower Offices (DEMO) to operate as facility centres for promotion of employment both at home and abroad.

1.19.4 Skill development training, promotion of self-employment and foreign employment, sound labour/industrial relations, labour welfare and maintenance of industrial peace were the major activities in the labour and manpower sector during the Fourth Plan period.

1.19.5 During Fourth Plan, BMET imparted institutional training to 14,396 persons, apprenticeship training to 1,731 persons and language training to 479 nurses. During the same period, BMET, under its employment services programme, provided self-employment opportunities to 9,450 persons and foreign employment to 911,836 persons. Department of Labour took programmes to promote sound industrial relations and labour welfare and to maintain industrial peace in order to attract foreign and domestic private investment.

1.19.6 During 1995/96, an allocation of Tk.74.60 million was made to 16 projects of which 10 were spill-over projects from the Fourth Plan. The expenditure during the year was Tk. 50.31 million, and only 2 projects were completed. In 1996/97, a total of 15 projects were included in ADP with an allocation of Tk.90.0 million. The estimated expenditure during the year was Tk.71.10 million approximately.

1.20 Public Administration

1.20.1 As a developing country Bangladesh has given serious attention to rationalise its administrative organisations, financial and personnel systems and rules and procedures for achieving efficiency and transparency in public service commensurate with the country's socio-political and economic aspirations. In the First Plan, public administration sub-sector had a modest allocation of Tk.131.20 million. Out of the above allocation, only an amount of Tk.40.60 million was spent. In the Two Year Plan an allocation of Tk.111.20 million was made of which Tk.89.80 million was utilised. Sectoral programmes during the period concentrated mostly on training, research and related activities.

1.20.2 The Second Plan envisaged a much wider scope of development covering the entire spectrum of administration and management. During the Third Plan, creation of an efficient

public administration system was one of the major objectives. Enhancement of job related knowledge and skills of the public officials through systematic training, establishment of training institutes for such purposes, improvements of personnel administration in the government, semi-government and autonomous bodies, streamlining of administration through simplification of accounts, budgeting and financial and administrative procedures and restructuring of government offices and agencies were some of the major efforts undertaken towards improving efficiency in administration.

1.20.3 Projects taken up in the public administration sector during the Fourth Plan were broadly in the fields of (a) development of administration and management training; (b) project planning, implementation and monitoring; (c) organisational development; (d) system improvement; and (e) administration and financial reforms. These could not yield better administration as the system was abused by the power that be.

1.20.4 Several institutes are functioning in the country for imparting training in public administration and management. Notable of them are Public Administration Training Centre (PATC), Regional Public Administration Training Centres (RPATC), Bangladesh Civil Service Academy, Institute of Chartered Accountants of Bangladesh (ICAB), Institute of Cost and Management Accountants of Bangladesh (ICMAB), Institute of Bank Management (IBM) and Academy for Planning and Development (APD). The projects during the Fourth Plan were mostly meant for strengthening the training efforts of these institutes. Projects were also undertaken during the Fourth Plan for institutional development of BCS (Admn.) Academy and establishment of a Statistical Training Institute. Bangladesh Institute of Administration and Management (BIAM) was established during this Plan period.

1.20.5 During the Plan period, the mechanism of collection of household expenditure survey and local level data system was modernised and the examination system of the Public Service Commission (PSC) was improved. Disaster Management Bureau (DMB) was established. Besides, a number of studies were undertaken on administrative reforms and a committee was formed to look into the study reports. The studies were undertaken by UNDP, ODA, World Bank and USAID.

1.20.6 During the Fourth Plan, 71 projects were taken up, out of which 21 were completed. During the same period, the sector was provided with an allocation of Tk. 2.01 billion out of which Tk.710.0 million was utilised.

1.20.7 During 1995/96, an allocation of Tk.1.76 billion was made available for 61 projects of which 50 were spill-over projects from the Fourth Plan. A total of 14 projects were completed and an amount of Tk.1.55 billion was spent. In 1996/97, an allocation of Tk.956.20 million was made to 50 projects including 3 new projects; out of these 16 projects were likely to be completed. The expenditure during the year 1996/97 was Tk.698.30 million.

CHAPTER II

OBJECTIVES AND STRATEGIES

2.1 Introduction

2.1.1 Bangladesh is one of the poorest countries of the world with a per capita income of US \$ 240. Its people have a life expectancy of only 58 years. Mortality rate of children under 5 in Bangladesh is one of the highest in the world. About 60 per cent of the children experience moderate to severe malnutrition. The population suffers from endemic health problems. Approximately 53 per cent of the population is illiterate. As a result, about one-half of the population cannot contribute to the country's development efforts. The Sonar Bangla that the Father of the Nation Bangabandhu Sheikh Mujibur Rahman dreamt of still remains the unrealised vision for the nation. The overwhelming problems of poverty, hunger, malnutrition, illiteracy, unemployment and under-employment, particularly in rural Bangladesh, persist as a challenge for all development planners.

2.1.2 The closing decade of the twentieth century has been witnessing milestone of events - the collapse of communism, end of the Cold War and relaxation in the East-West tension, creation of a new World Trade Organisation (WTO) for promoting rule-based free and fair trade and economic opportunities at local, regional and sub-regional levels, global nurturing of greater respect for democratic systems, norms and values, erosion of interventionist philosophy and practice hitherto pursued by many countries of the world for their socio-economic development, ascendance of market forces as the dominant allocator of resources, and emergence of a global consensus for increasingly greater partnership between the governments and civil societies in the decision - making process. These developments have resulted in what is now known as the new international order characterised by globalisation of economies at different stages of development. The WTO along with the IMF and the World Bank, will nurse and promote this globalisation through coherence of policies and strategies relating to trade, money, finance and development. These will have far reaching effects in shaping not only the destiny of the people of individual nations but also that of mankind as a whole.

2.1.3 Governments all over the world are coming to terms with the new international order. The rapid pace of political and technological change and fast-moving globalised markets are posing fundamental questions as to the role of the government and how it can lead nations to respond to changing circumstances. The relationships and balances between governments, the private sector and non-government organisations (NGOs) are rapidly changing. Performance of the government in all sectors is subject to greater scrutiny and accountability. Situation as obtaining in Bangladesh today warrants a new vision to accelerate and sustain growth, alleviate poverty, take advantage of new opportunities and meet challenges of the future, and enable the private sector to realise its full potential and play its rightful role in a competitive global market. In this context, Bangladesh will have to redefine the role of the government; overhaul the rules and processes by which the government conducts its policy and decision making functions; streamline the regulations, laws and processes through which the government interacts and regulates citizens and the private sector, maintains an honest, efficient, committed and professional public service and enhances accountability and responsiveness of public agencies to citizens they are mandated to serve.

2.1.4 Until recently, it was a common practice to compartmentalise human activities and their effects within nations, within sectors (agriculture, industry, energy, trade, services, etc.)

and within broad areas of concern such as economic, social and environmental issues. Now, these compartments have begun to dissolve. Today, all have come to realise that impoverishing the local resource base can impoverish wider areas, even beyond the borders of countries. Deforestation in the highland causes destructive flooding in the lowland and adversely affects downstream nations. Fertilisers used for boosting agricultural production, pesticides used for protecting plants and crops and pollution from factories destroy fishery and rob fishermen of their means of livelihood. Degradation of agricultural land drives millions from their rural homesteads not only towards urban centres but also across national boundaries, thus turning them into economic refugees. Sustainable long-term development must address these environmental and social concerns.

2.1.5 Over the past few decades, life threatening environmental concerns have surfaced. Rural arable lands are coming under pressure from increasing number of farmers and the landless. Cities are being increasingly crowded with people, automobiles and factories. A significant part of GDP is derived from agriculture, forestry, energy production and mining as well as export of natural resources. There is, thus, enormous economic pressure, both domestic and international, to overexploit the natural resource base.

2.1.6 New technology is the mainspring of higher economic growth through increases in productivity and income. Access to it not only improves the efficiency and shifts the competitive edge of a nation but also offers the potential to economise the consumption of rapidly depleting resources. However, at the same time, it also contains risks, including new forms of pollution. Introduction of genetic engineering could have far reaching effects on the mankind. Time has come to revisit the conventional 'green-revolution' technologies that depend upon the intensive use of energy, chemicals such as fertilizers and pesticides, for boosting agricultural production which, experience has shown, cannot be sustained at high level indefinitely. Progressively increased recourse to organic input-based bio-technologies, which will have the advantage of being ecologically sound and sustainable over a longer period of time, is the imperative of the hour.

2.1.7 For women, it is still an unequal world. This inequality varies from country to country as it does from society to society. It is true that after centuries of neglect, the past two decades, as part of an integrated approach to human development, have witnessed the demonstration of great awareness and considerable concern for closing the gender gap through building women's capabilities. Despite this, disparity between women and men persists - in their access to education, health and nutrition, in their right to life and property and protection by their societies and legal systems. This determines the pace of progress of a nation and how much women can contribute to and benefit out of this progress.

2.1.8 The Constitution of the Republic provides clear directives which the government has to take into account while formulating development goals, objectives and strategies. Fundamental Principles of State Policy, as embodied in the Constitution, while addressing the issue of meeting the basic needs of the people, vest on the state the responsibility to attain, through planned economic growth, a constant increase of productive forces and a steady improvement in the material and cultural standard of living of the people, with a view to securing to its citizens:

- a. the provision of the basic necessities of life, including food, clothing, shelter, education and medical care;
- b. the right to work, that is the right to guaranteed employment at a reasonable wage having regard to the quantity and quality of work;

- c. the right to reasonable rest, recreation and leisure; and
- d. the right to social security, that is to say, to public assistance in cases of undeserved wants arising from unemployment, illness, or disablement; or, suffered by widows or orphans, or in old age, or in other such cases¹.

2.1.9 On the question of equity, the Constitution unequivocally undertakes that the State shall endeavour to ensure equality of opportunity to all citizens and shall adopt effective measures to remove social and economic inequality to ensure equitable distribution of wealth among citizens and of opportunities in order to attain a uniform level of economic development throughout the Republic².

2.1.10 With regard to rural development, the Constitution provides that the State shall adopt effective measures to bring about a radical transformation in the rural areas through promotion of an agricultural revolution, provision of rural electrification, the development of cottage and other industries, and improvement of education, communications and public health, in those areas, so as to remove progressively the disparity in the standards of living between the urban and rural areas³.

2.1.11 On the issues of promoting local government institutions and mainstreaming of women in development, the Constitution commits that the state shall encourage local government institutions composed of representatives of the areas concerned with special representations, as far as possible, of peasants, workers and women; and that steps shall be taken to ensure participation of women in all spheres of national life⁴.

2.1.12 Regarding human resources development, the Constitution requires the State to adopt effective measures for the purpose of establishing a uniform, mass-oriented and universal system of education and extending free and compulsory education to all children to such stage as may be determined by law, relating education to the needs of society and producing properly trained and motivated citizens to serve those needs, and removing illiteracy within such time as may be determined by law. In this context, the Constitution further provides that the State shall regard raising the level of nutrition and improvement of public health as among its primary duties⁵.

2.1.13 On the establishment of a corruption free society, creating and sustaining equal opportunities, the Constitution provides that the State shall endeavour to create conditions in which, as a general principle, persons shall not be able to enjoy unearned incomes⁶.

2.1.14 Towards the objective of good governance, the Constitution provides for separation of the judiciary from the executive organs of the State and establishment of a pro-people public service system, every member of which, will strive at all times to serve the people⁷.

Notes: Paragraphs with subscripts 1, 2, 3, 4, 5, 6, and 7 correspond to Articles 15, 19, 16, 9 and 10, 20(2) and 22 and 21(2) of the Constitution of the People's Republic of Bangladesh, respectively.

2.2 Nature and Focus of Fifth Plan

2.2.1 Keeping in view the changing structure of the global economy, the Fifth Plan has been prepared within a flexible framework. In a radical departure from traditional planning model, the Fifth Plan framework rests more on flexible projections and forecasts of incremental change in various development parameters than on rigid targets for realisation during the Plan period. In the context of increasing globalisation of the economy, the Plan places markets at the centre but, at the same time, attaches due importance to the appropriate role of the government and the public sector, as required to fulfil the constitutional obligations of the State for raising the standards of living of all citizens of the country. In recognition of inevitable imperfections in information, competition and play of market forces in a developing country like Bangladesh, the Plan envisages appropriate and effective interventions in the market to remedy well-identified problems emanating from these imperfections.

2.2.2 To fulfil their central role in efficient resource allocation and increasing wealth and living standards, markets need enabling environment and supportive infrastructures. The government will promote, guide and develop markets. The Plan presents, in details, various policy packages, which will provide necessary enabling environment for efficient functioning of the private sector. The Plan also outlines areas of activities from which the government will divest away at the quickest possible pace. This will assist the private sector in planning its future investments. Further, a comprehensive policy package has been presented in the Plan which is expected to attract much needed foreign direct investment during the Plan period.

2.2.3 The greater part of GDP growth during the Fifth Plan period is expected to come from the private sector. The private sector's share of investment, as estimated in the Plan, is more indicative than abiding in nature and should not be construed as any limit on private investments. For promoting market-based development, the role of the government will be limited mainly to the establishment of the educational, technological, financial, physical, environmental, and social infrastructure of the economy. The government will also provide those utilities/services where the private sector is not forthcoming. Needless to say that construction of such infrastructure is beyond the capacity or interest of any single firm. The Plan, therefore, provides necessary resources for investment by the government and the public sector in these areas with a clear indication that the government will not be a competitor to the private sector.

2.2.4 The Fifth Plan has another added dimension. It departs from the concept of central planning in a significant way. In tune with the government's thrust on strengthening local government institutions at all tiers and their developmental role, a major focus of the Fifth Plan is local level participatory planning and integration of the local level development programmes/projects with those at the national level. In this context, necessary reorientation of the role of the Planning Commission is envisaged. Further, the Fifth Plan envisages an active coalition of the government and the NGOs on the development front so that the full potential of the NGOs in complementing the development efforts of the government can be tapped in a cost effective manner.

2.2.5 The Fifth Plan has sufficient built-in flexibility. Its performance will be regularly monitored. The projections and forecasts of the Plan, based on available data and reasonable assumptions about improvement in institutions and other exogenous variables, will be reviewed and revised, if actual performance so dictates.

2.3 Objectives of Fifth Plan

2.3.1 In the context of prevailing global realities and in compliance with the aforementioned constitutional obligations and to the end of fulfilling the commitment made to the people before the national election in June 1996, the government has set out its development goals and objectives and, at the same time, enunciated supportive policies and strategies to bring about the long-cherished socio-economic transformation for building a happy and prosperous Bangladesh. Development goals and objectives of the Fifth Plan are briefly presented below:

- a. Alleviation of poverty through accelerated economic growth (on an average 7 per cent per annum) during the Plan period to bring about a noticeable improvement in the standard of living of people by raising their level of income and meeting their basic needs. In this context, alleviation of poverty will be considered as synonymous with development.
- b. Generation of substantial employment opportunities and increase in productivity through an optimal choice of the traditional labour intensive and new capital-intensive technologies.
- c. Improvement in the quality of life of the rural population through mobilisation of the rural masses and resources at their command as well as channelling increased volume of invisible resources to the rural economy so as to attain an accelerated growth in rural employment and income.
- d. Transformation of the rural socio-economic structure into a more equitable, just and productive one and empowerment of the rural poor through ensuring their increased access to resources.
- e. Attainment of food production beyond the self-sufficiency level in the shortest possible time and of higher production of diversified high-valued export goods.
- f. Human resources development with emphasis on compulsory primary education and vocational training and foundation laying of a knowledge based society.
- g. Development of necessary infrastructure, utilities and other services needed to promote growth, particularly in the private sector, with special attention to generation of power, exploitation of gas, coal and other natural resources and to the development of rural infrastructure, including market outlets, for marketing rural products within and outside the locality.
- h. Development of industries essentially based on comparative advantage of the country.
- i. Development of hitherto neglected areas like the north-west region, Chittagong Hill Tracts and coastal areas.
- j. Achievement of a lower population growth rate (1.32 per cent) by the terminal year of the Plan, coupled with provision of necessary health care and improved nutrition of mother and child.
- k. Strengthening of the country's scientific and technological base with emphasis on research and development of new generation technologies, including in areas such as electronics and genetic engineering.
- l. Protection and preservation of environment by putting in place adequate regulatory regimes and effective institutions, keeping in view the need for regeneration, recycling and optimum exploitation of natural resources consistent with sustainable development.
- m. Closing the gender gap, giving priority to women's education, training and employment and special support for education of the girl child.

- n. Establishment of social justice through equitable distribution of income, resources and opportunities, and creation of effective safety nets for the socially and economically disadvantaged sections of the population and by strengthening the law and order and the rule of law.
- o. Putting in place effective local government institutions, at the union, thana and zilla levels, and vesting on them the power and responsibilities for design, formulation and implementation of local level development programmes and projects, with active participation of people belonging to all strata of the rural society as well as through effective co-operation between the local government institutions and non-government organisations.

2.4 Strategies of Fifth Plan

2.4.1 Poverty alleviation and rural development: Bangladesh is poverty-ridden. Poverty is reflected in its low per capita GNP, dominance of cereals in food-intake and low standards of nutrition. Average daily calorie intake per capita hardly exceeds 2,000 K. cal. The vast majority of the people are still ill-fed, ill-clothed, ill-housed and ill-educated, and the percentage of absolute poor in Bangladesh is one of the highest in the world. Bangladesh is trapped in the vicious circle of poverty which is characterised by large scale unemployment and underemployment, low level of income, low productivity due to deficiency of capital, weak technological base, market imperfections and lack of skill.

2.4.2 About 80 per cent of the population lives in the rural Bangladesh and about half of them live in abject poverty. The aim of rural development is not only to lift the poor above the poverty line but also to bring about improvement in the quality of both material and cultural life. It will include both widening and deepening the production and technological base of the rural economy and expanding public services, such as, primary education, health services and transport and communication in the rural areas. The success of the rural development strategy will, however, depend on containing successfully the problem of population growth on the one hand and providing opportunities for productive employment of family labour including women, on the other. In the present democratic setting, the prime mover of rural development will, in fact, be the people themselves, while the government will act as a catalytic agent through provision of an enabling policy framework and support services to complement local efforts. As reflected in the plan of actions already initiated by the government, effective local level institutions will be put in place and practical modalities will be worked out for active participation of local people in evolving a framework for grass-root planning and implementation of local level development programmes and projects.

2.4.3 Accelerated agricultural production : Keeping in view the target of raising the cereal production level to 25 million tons by the year 2002, the Plan seeks an overall accelerated growth in agricultural production and productivity. Agricultural development is still synonymous with the economic development of Bangladesh. Without rapid change in agriculture, there can hardly be any rural or national development in Bangladesh, nor can there be any significant reduction of poverty. All efforts will, therefore, be geared to provide the thrust necessary for boosting agricultural production. While self-sufficiency in food grains at a higher level of per capita consumption is a major objective of the Plan, a more nutritionally enriched diet of the population will also be provided through substantial increase in the production of oil-seeds, pulses, fruits and vegetables, fish, eggs, livestock, poultry and dairy products. Besides, more attention will be given to increased production of high-value cash crops.

2.4.4 The modernisation of agriculture will be sought through the provision of extension services, training, requisite inputs and credit to farmers. Such a change of agriculture requires high cash investment, as producing more for market involves risk which small farmers and share - croppers cannot generally afford to undertake. Optimum use of modern inputs, along with land, water and labour, is difficult to attain because land is owned in small plots by the majority of the farmers; a large proportion of farmers are landless, while some land is owned also by those who are not farmers. A land use plan for various crops and purposes is envisaged in the long run, with focus on sustained increases in yield. It may not, however, be necessary to interfere with the ownership of land beyond what is envisaged by the Land Reform Act of 1984; what is intended is to influence land use and production plans at the village level indirectly through information, extension and an appropriate package of incentives.

2.4.5 Agricultural production strategy has to be improved to implement institutional changes to cope with market forces. Appropriate policy relating to pricing, input supply, support services and infrastructure development will have to be put in place.

2.4.6 The main thrust of the agricultural production programme will be increased irrigation coverage, better water management and variety improvement of rice and wheat. Irrigation coverage will be increased further during the Plan period with emphasis on minor irrigation projects and full capacity utilisation of irrigation facilities including supplementary irrigation during Aus and Aman seasons. Area under HYVs of rice and wheat will be expanded through extension of water management and fertilizer use will be further increased during the Plan period. Availability of fertilizer will be ensured not only by making better capacity utilisation of existing fertilizer plants through implementation of necessary BMREs, but also by setting up new plants at an early date. Market mechanism will be used to ensure timely import and efficient distribution of different agro-inputs. Greater use of organic manure will also be encouraged. Seed multiplication and storage facilities, both in public and private sectors, will be part of the agricultural development strategy. Credit facilities will be increased through greater allocation and better management of funds. A major effort will be made to put in place adequate marketing, transport, and storage facilities as well as necessary price support. Efforts will be made to increase domestic production of most inputs required for agriculture and rural development, including fertilizer, agricultural implements and tools.

2.4.7 Efforts will be made to maintain appropriate incentive prices for important agricultural commodities through market mechanism and policy instruments. Procurement and storage efforts will have to be greatly improved. Adequate buffer stock will be built up to tide over the difficulties of lean periods and natural hazards and a marketable surplus will be sought by gearing up production of essential items. Subsidies on fertilizer and other inputs, if needed, will be selectively provided with due regard to economy and efficiency of such subsidisation. Prices of major food items such as rice, wheat, edible oil, sugar, baby food, pulses, fish, poultry, etc., may also have to be stabilised on social development considerations through appropriate pricing, distribution and production policies. Food policy will be properly integrated with the agricultural programme, as output of food and its price influence the production of jute, sugarcane, pulses, oil seeds and other cash crops.

2.4.8 To sum up, the strategy for attaining the projected increase in agricultural production will consist of strengthening the policy environment and the technological base, establishing grass-root level organisations for planning and implementation as well as provision of necessary support services.

2.5 Local Level Institutions for Participatory Rural Development

2.5.1 Local level institutions, at different tiers, had fairly deep roots in Bangladesh. Various experiments were carried out with local level institutions, particularly from 1958 onwards, primarily with the objective of establishing a centralised system of administration in the name of devolution of administrative authority, but in fact, to keep the people out of the decision-making process. Thus, the people of Bangladesh, particularly the rural people who comprise about 80 per cent of the country's population, lost almost half a century during which their participation was virtually absent from the very process of development they were supposed to be the beneficiary of.

2.5.2 However, in the background of lost opportunity for development and abject rural poverty, growing awareness of the people as well as deeper insight into the miserable plight of the rural poor by the civil society, the concept of decentralisation and revitalisation of the local level institutions started capturing the imagination of academicians and policy-makers. As a result, some fresh initiatives were launched during the 1980s for revitalising local level institutions, at various tiers and delegating to them some developmental roles, along with powers to raise some resources locally. These were, however, rendered dysfunctional, through the extended arms of the central government, and the only local level institutions that remain still in place are the Union Parishads (UPs).

2.5.3 The fundamental premise of participatory development is development by the people and for the people. Popular participation manifests in the collective endeavour by the people concerned in an organised framework to pool their efforts and whatever other resources they decide to pool together to attain objectives they set for themselves. Participation, thus, is viewed as an active process in which participants take initiatives and actions that are stimulated by their thoughts and deliberations and over which they can exert effective control. In this context, the local level institutions become important in providing the institutional fora for both empowerment of people and promotion of participatory rural development in a cost-effective and sustainable way.

2.5.4 In this backdrop, the government, immediately on its installation, established a Commission to make an in-depth study and come up with recommendations on the forms and functions of local government institutions at different levels. Following the recommendations made by the commission, local level institutions at village, thana and zilla levels will be established with elected local representatives. Besides, Union Parishads and Pourashavas will be strengthened both functionally and financially. All these local government bodies will be entrusted with the responsibility to formulate and implement local level development programmes/projects, manage educational institutions, run health and family welfare services as well as to maintain local level infrastructures. Necessary laws will be enacted to empower these local level institutions to mobilise and raise resources for local level activities thus lessening the burden on the central government. Law has already been passed to strengthen and broad base women's representation in Union Parishads.

2.5.5 To ensure people's participation in the development process, local level institutions will be encouraged to evolve on a spirit of self-help. They will also provide a system for efficient use of voluntary labour in various fields of the rural life, not only in production but also in community development. The government's role here will be catalytic and promotional. Using the local government institutions, the Plan emphasises building grass-root level production organisations among the target groups to promote a back-to-back relationship between policies and felt needs of the people. An important area will be rural human resource

development. To satisfy this, the literacy rate has to be raised significantly through measures stated in the Fifth Plan. A bottom-up participatory process with emphasis on local level initiative will constitute the cornerstone of socio-economic development in Bangladesh under the Fifth Plan.

2.5.6 Land is the most scarce resource in Bangladesh. Its proper utilisation is a necessity for the success of the Plan, as it ensures effective employment of the rural labour force and higher output. Positive steps will be taken to provide an institutional framework for production and employment planning at the local level and ensuring better use of land, water and human resources. It is recognised that local level institutions for promotion of production, employment, voluntary consolidation of holdings, etc., cannot perform readily without adequate policy support and necessary changes in the legal system.

2.5.7 The local institutions will also encourage and organise fish, poultry and livestock development. Employment of the rural landless will receive particular attention of the local organisations. Such organisations will face initial problems and can be perfected through a gradual process to encompass the rural life, concerned not only with production but also community services like health, education, population planning and human resources development.

2.5.8 In the Fifth Plan period, concrete steps will be taken to strengthen the local government institutions in three hilly districts and to set up a co-ordinating body for three Zilla Parishads of this area in accordance with the Peace Treaty concluded on December 2, 1997.

2.6 Population

2.6.1 Despite efforts in the past to contain the growth rate, the population is still growing at the rate of 1.75 per cent, adding almost 2.2 million people every year. Even if NRR-1 is achieved by the year 2005, about 1.2 to 1.3 million people per year will be added, increasing man/land ratio, aggravating the unemployment problem and consequently thwarting the prospects of socio-economic development of the country. Due to the young age structure of Bangladesh's population, more effective efforts will be called for to arrest the demographic momentum.

2.6.2 Till now, the focus of population control programmes has been on the delivery system. However, a breakthrough cannot be achieved without a large increase in mass literacy and development of institutions such as women's co-operatives and mother's centres. In addition, vocational training programmes and skill-development will also have a bearing on population and development parameters. The local government institutions will have to be oriented to the goal.

2.6.3 In the Fifth Plan period, the Union Health and Family Welfare Centres (HFWC) and Mother and Child Welfare Centre (MCWC) will be focal point of Mother and Child Health (MCH). The providers of both health and family welfare services at the village level will have greater co-ordination to provide unified services under the overall supervision of the Medical Assistant/M.O in charge of the HFWC/MCWC. He/she will be responsible for both health and family planning/MCH service delivery and report for activities to the THA and TFPO, respectively. This integrated service structure will ensure economies of scale and better utilisation of HFWC/MCWCs. To enable it to play a more effective role, the National Population Council will have to be suitably strengthened.

2.7 Human Resources Development

2.7.1 A strategy of human resources development is a precondition for gainful employment generation. The essential elements of the human resources development strategy are skill formation and raising the technical capacity of the population through education and training, research and extension, and an institutional set-up with appropriate linkages between all these elements. It has two sets of needs to which to respond. Besides those receiving formal education, there is the existing labour force in rural and urban areas whose technical skills will have to be upgraded. As they are either engaged in productive activities or are age-barred and thus ineligible for formal education, wide-spread non-formal programmes for education and training will also have to be organised. These non-formal programmes have to be effectively linked with productive activities like agriculture, animal husbandry, rural industries, transportation, trade and services. Particular emphasis will be placed on non-formal programmes, on-the-job training, training for self-employment and development of small entrepreneurship.

2.7.2 Human resources development is a pre-requisite for sustainable development. Planning for sustainable development, in turn, requires an emphasis on an integrated approach. In Bangladesh, with two primary resources, man and land, the former overwhelming the latter, existing inequality in the distribution of land can be mitigated by equitable development of human resources and equitable access of all to the benefits of development.

2.7.3 It is envisaged to set up a network of institutions to be termed "community schools" which will provide effective linkages between formal and non-formal education. The "community school", based on existing secondary schools will actively encourage participation of the community in enhancing the quality of education through establishment of teacher-parent associations and curriculum advisory committees comprised of progressive farmers, locally available experts and local leaders. These schools will also actively participate in community development projects to instil a spirit of community involvement. While the community schools will provide formal training to its students, its resources, physical and human, will be fully utilised with appropriate supplement from other sources to provide a range of programmes of non-formal education and training for adults. Training centres for non-formal programmes are, at present, lacking below the Thana level; community school will fill this important gap and make such training facilities available at the Union level.

2.7.4 Research being essential in any programme of human resources development, the Fifth Plan will provide resources to appropriate institutions for carrying out applied research which has a bearing on development. This will, among others, cover agronomy, farm management, small industry, "appropriate technology", employment and marketing. The Fifth Plan will ensure that research results which prove to be economically viable and promise sufficiently high returns on investment are translated into practice through appropriate policies and extension services.

2.8 Education

2.8.1 The objective of attaining a better quality of life can be realised, through spread of literacy. The ability to read and write is an important asset of man in modern life. It helps in better understanding, efficient use of modern inputs in farming, facilitates transactions, enable better land management, encourage use of family planning devices and above all, secures use of democratic rights of a citizen. Universal primary education is, thus, a precondition for modernisation and growth.

2.8.2 Along with spread of primary education, removing illiteracy is considered an important strategy for social and economic development of the masses. Since resources are limited, there cannot be a simultaneous increase of investment of public funds at all levels of education. It is necessary to economise the use of resources with greater emphasis on efficient use of facilities, devoting more resources to primary education prioritising higher education to the meritorious students and inducing the private sector to play a more effective role in making the nation literate. Thus, expansion of primary and mid-level technical education in the public sector, along with increased participation of the private sector in all tiers of education, particularly in rural Bangladesh, will be pursued as a central strategy in the education sector during the Fifth Plan period.

2.9 Private Sector - Dominant Player

2.9.1 In tune with the current global trend, the government has committed itself to the market economy and has been pursuing policies through which the private sector will play the dominant role in the country's development efforts. In all cases where public ownership is retained, efficiency must be increased through improving management, decentralising the decision making process, ensuring commercially viable operations and following economic pricing of all goods and services produced by the parastatals. Success in management is to be rewarded through appropriate incentives, while inefficiency and poor performance will bring punitive actions. Professionalism in management will be an important element of the public sector strategy. Public sector monopolies will be progressively brought into the competitive areas and the parastatals will be gradually disengaged from those activities in which the private sector is well suited to perform efficiently.

2.9.2 While social direction of private enterprise in certain fields may be necessary to safeguard the people's interest, private enterprise will continue to be the main lever for development in all areas where they have demonstrated satisfactory performance or are likely to be more efficient. In particular, entrepreneurship will be encouraged through training, extension services, input supply, credit and marketing facilities. Emphasis will be placed on strengthening the financial and capital markets through appropriate policy measures so that there can be a better mobilisation of resources, in particular private resources from abroad, for productive investments.

2.10 Export-led Industrialisation

2.10.1 Bangladesh has placed huge emphasis on export-led industrialisation strategy. In order to bring about sustained growth in exports, conscious policy shifts have been initiated to transform a regulated economy into a market economy and a wide range of policy reforms have been implemented. The major elements of these reforms, among other things, include liberalisation of imports and streamlining of import procedures, rationalisation of tariffs and reduction of tariff levels and elimination of quantitative restrictions to the extent possible, adoption of a market-oriented flexible exchange rate policy and provision of more effective and transparent export promotion measures.

2.10.2 An important prerequisite for development of export industries is the availability of well-developed infrastructure. Export Processing Zones (EPZs) provide this infrastructure and other incentives, under a single package and thus have been able to attract foreign direct investment (FDI). In extending this approach further so as to attract substantial FDI, the government has adopted the policy of entrusting the private sector with the responsibility of developing private export processing zones as well.

2.10.3 An enabling policy environment as well as further promotional measures, along with simplification and minimisation of the regulatory and legal frameworks will be put in place to encourage entrepreneurial initiative and foreign direct investment for the development of export-oriented industries during the Fifth Plan.

2.11 Employment and Income Generation

2.11.1 A strategy of production for meeting basic needs of the people must be matched by a viable strategy of employment generation and human resources development so that the poor may have access to income. There is huge unemployment and under-employment in the country. The growth of employment in the past did not keep pace with the growth of the labour force and unemployment and under-employment remain very high. In the past, employment goals were generally derived as a by-product of investment strategy; thus, it did not receive as much priority as it should have, as a national problem. A comprehensive employment strategy will be the corner-stone of the Fifth Plan, with productive employment generation, particularly in the rural area, as an overriding objective reflected in all programmes and projects.

2.11.2 A large increase in employment in the Fifth Plan period is envisaged in agriculture. This will materialise partly through increasing the cropping intensity and expansion of high yielding varieties of crops which require substantially more labour inputs than traditional varieties. Fisheries, livestock and forestry will also contribute to a significant increase in employment. Infrastructure building, especially in the rural areas, through the sectoral programmes, in addition to the rural works programme and the food for works programme will result in a sizeable increase in employment. Rain-fed agriculture, intercropping, and farming system development will be given particular attention.

2.11.3 As a part of the strategy for productive employment, rapid industrialisation will be pursued. There will be a selective promotion of appropriate technology in directly productive sectors, through research, adaptations and diffusion of efficient technologies. Emphasis will be given on productivity enhancement simultaneously with employment generation.

2.12 Microcredit

2.12.1 Empowerment of the poor is contingent on their access to resources, which in turn, enhances the productive capacity of the poor and helps alleviate poverty. This is the vision on which the Grameen Bank launched its innovative microcredit banking system to reach the poor, who have nothing to offer as collateral for borrowing from the conventional banking system. The success of the Grameen Bank has created optimism about the viability and vitality of the innovative approach of reaching the poor with credit they desperately need. NGOs like BRAC, PROSHIKA, ASA and others also reach the poor with microcredits. The delivery of microcredit is assisted by appropriate training and motivation, formation of associations, arrangements for supply of inputs and provision of market outlets for the sale of products produced by the small entrepreneurs. In the Fifth Plan, every effort will be made to extend microcredit and related activities.

2.13 Good Governance

2.13.1 Accountability to the people, transparency, efficiency and incorruptibility in conducting the business of government and, above all, non-discriminatory application of the laws of the land are some of the major features of a good government. The present

government, in pursuance of its constitutional obligations, is committed to the nation to ensure good governance. For this, the government will chalk out an action programme and will make an all out effort to implement it.

2.13.2 The action plan will embody, among other elements, design of a legal framework for strengthening the mechanism for law enforcement and speedy delivery of justice, public administration reform, downsizing of the government, rationalisation of parastatals, simplification of systems and procedures for delivering public service in a cost-effective manner and modalities for involvement of civil society in development management. It will also require redefining the role of the state and reorienting the mind-set of the bureaucracy.

2.14 Resource Mobilisation

2.14.1 Currently, Bangladesh is dependent on foreign aid for around 50 per cent of its development outlay. Exports pay for less than half of its imports. This dependence on foreign aid has had several undesirable consequences. The main problem is that, it results in a compromise of the interest of the country with those of the suppliers of development resources. It has also serious effects on the choice of technology. Heavy dependence on aid prevents realistic annual programming of development activities. For all these reasons, reducing dependence on aid by mobilisation of a greater amount of domestic resources and increasing export earnings will be an important element of the development strategy during the Fifth Plan. Side by side, efficient import substitution, reduction of imports of luxury items and more productive use of indigenous resources as well as of remittances from the citizens of Bangladesh abroad are necessary imperatives for attaining a greater degree of self-reliance.

2.14.2 Dependence on external resources has also raised other serious issues relating to criteria for project selection and institutional capacity for project implementation and management. There have been long discussions and debates on absorptive capacity constraints, project quality and project sustainability issues. In the context of these considerations, the government is committed to carry out a comprehensive review of public investment programmes and initiate work on project prioritisation. A review of public expenditure and its management will also be undertaken concurrently which will not only sharply focus the development programmes but also relate these with the long-term development vision of the nation as articulated in the constitution of the country and as reflected in the commitment made by the government. At the sametime, domestic savings will be raised through appropriate development of capital market and innovation of savings and investment instruments.

2.14.3 Resource availability can be augmented significantly if management and capacity utilisation of parastatals are improved and they are allowed to charge competitive prices. A necessary prerequisite for price freedom, however, is the creation of cost-consciousness in public corporations to eliminate wastage and improve efficiency. Economical use of resources can also be achieved by holding down the expenditure on public administration with improvement in the quality of services. Furthermore, there is a considerable scope of mobilising more resources out of existing taxes through overhaul and improvement of the tax collecting machinery as well as through widening of the tax-net.

CHAPTER III

PLAN SIZE SECTORAL ALLOCATION AND PROJECTIONS

3.1 Introduction

3.1.1 The Fifth Five Year Plan aims to put Bangladesh on a path of self-sustaining growth for the improvement of socio-economic condition of the people. Acceleration of GDP growth will allow the economy to break through the continuing poverty syndrome. While there has been substantial improvement in recent years in macroeconomic management, the Plan recognises the need for massive investment, with private sector playing the major role for rapid growth and efficiency.

3.1.2 Total outlay of the Fifth Plan is projected to be Tk.1,959.52 billion. Of this, the major share (56 per cent) is anticipated from the private sector (Tk.1,100.58 billion), exceeding its share in all the previous Plans. Table 3.1 shows the sizes of the successive Plans and relative shares of the public and private sectors.

Table 3.1
Plan Sizes and Relative Shares of Public and Private Sectors

(in million Taka)

Plans	At Respective Base Year Prices			At 1996/97 Prices		
	Plan Size	Public Sector	Private Sector	Plan Size	Public Sector	Private Sector
First Five Year Plan (1973-78)	44,550 (100.00)	39,520 (88.71)	5,030 (11.29)	569,448	505,153	64,295
Two Year Plan (1978-80)	38,610 (100.00)	32,610 (84.46)	6,000 (15.54)	156,121	131,860	24,261
Second Five Year Plan (1980-85)	172,000 (100.00)	111,000 (64.53)	61,000 (35.47)	554,562	357,886	196,676
Third Five Year Plan (1985-90)	386,000 (100.00)	250,000 (64.77)	136,000 (35.23)	749,958	485,724	264,234
Fourth Five Year Plan (1990-95)	620,000 (100.00)	347,000 (55.97)	273,000 (44.03)	784,040	438,809	345,231
Two Year Plan Holiday (1995-97)	508,760 (100.00)	217,160 (42.68)	291,600 (57.32)	515,700	220,100	295,600
Fifth Five Year Plan (1997-2002)	1959,521 (100.00)	858,939 (43.83)	1100,582 (56.17)	1959,521	858,939	1100,582

Note : a. Plan sizes and shares of the public and private sectors at respective base year prices are adjusted to 1996/97 (Fifth Plan base year) price level by using BBS investment deflator.

b. Figures in the parentheses are sectoral shares in percentages. Percentage shares of the public and private sectors at 1996/97 prices are same as at respective base year prices, because of the use of uniform investment deflator for both the public and private sectors.

3.1.3 Public sector investment comprises of investment components of the Annual Development Programme (ADP), capital expenditure components of the revenue budget and own investment of the parastatals. During the Fifth Plan, public investment will mainly be directed for expansion of public utilities like power and gas, development of physical infrastructures like roads and embankments, expansion of social infrastructures like health and education, alleviation of poverty and strengthening of public administration for efficient response to the need of market economy. However, some public investment in productive enterprises will be necessary where private sector may not be forthcoming to a desirable extent.

3.1.4 Private sector will be the main agent of growth during the Fifth Plan. Commitment to a free market economy, privatisation of public enterprises, deregulation and liberalisation of public control, reforms and structural adjustments will create an enabling environment for expansion of the private sector. Private sector will be encouraged through proper incentives and facilities to establish an export-led industrial base. For this, foreign direct investment (FDI) will act as the lever for inflow of new technology, management skill and market promotion. Priority will be given to the creation of a transparent and conducive environment where a dynamic private sector can flourish. Private investment is projected to be Tk.1,100.58 billion in the Plan. This is, however, an indicative figure but will guide public policies during the Plan period. Given the GDP growth rate of 7 per cent and estimated incremental capital value added ratios(ICVRs), total investment has been estimated at Tk.1,867.49 billion. Within the resource envelope, a feasible quantum of public investment has been worked out to be Tk.766.91 billion and private investment followed residually. It gives the minimum level of investment which the private sector can undertake. Chapter VI elucidates the fiscal, monetary and industrial policies which will be necessary to bring forth a higher level of private investment. With the accelerated growth, savings is expected to rise faster, particularly at the household level. To transform such savings into investment, the government will step in to mobilise household savings for private investment through minimisation of investment risk. The Plan envisages mobilisation of private savings also through issuing various kinds of bonds. It is envisaged that the surplus funds so generated in the public sector will be transferred to specialised banks or development financing institutions for financing private investment, particularly in those thrust sectors where private investment may be shy.

3.2 Investment Profile

3.2.1 Sluggish growth of the economy in the past may be attributed largely to the low rate of investment obtaining in the country. Severe natural calamities and adverse international environment also contributed to this unsatisfactory performance. GDP growth rate staggered around 4 per cent over the last twenty years. The level of investment was generally low from the mid 1970s to 1980s, fluctuating from year to year. However, the investment rate started rising steadily from the beginning of 1990s. The investment/GDP ratio, which declined to 11.5 per cent in 1990/91 from 12.9 per cent in 1988/89, increased to 17 per cent in 1995/96. Various reform programmes undertaken to encourage the private sector, as parts of the Structural Adjustment Programme, started to pay off in the early 1990s leading to a rise in the level of investment.

3.2.2 The Fifth Plan aims at raising the GDP growth rate to a level that will take Bangladesh to the threshold of take-off in the shortest possible time and allow an efficient and effective pursuit of poverty alleviation programme through generation of high level of productive employment opportunities. It projects GDP growth at an average annual compound rate of 7 per cent but the growth of the economy will be accelerated over the years. In the first year, the rate is estimated at 6 per cent and in the terminal year at 8.3 per cent. Higher growth rate will be brought about through higher rate of investment and greater efficiency by pursuing productivity enhancing policies and skill development. Even at this GDP growth rate, against an expected average population growth rate of about 1.37 per cent per annum, it will take about 10 years for an average poor person to cross the poverty line.

3.2.3 ICVRs for various years of the Fifth Plan reflect the gain in productivity. Estimated average ICVR for the Plan period is 2.85, reflecting the government's determination to reach

a level of efficiency higher than now existing in the economy. Investment in this Plan represents addition to fixed capital stock (net of depreciation), and as such does not include wages and salaries. The Fifth Plan aims to achieve a higher efficiency in capital use with a suitable technology-mix, greater utilisation of existing capacity, higher labour productivity and improved management in a competitive market environment. GDP growth rates, ICVRs and investment rates are shown in Table 3.2. In the first year, investment/GDP ratio will be 18.21 per cent and in the terminal year 25.1 per cent.

Table 3.2
Investment Profile for Fifth Plan
(at 1996/97 prices)

(in million Taka)

Year	GDP	GDP Growth Rate (%)	ICVR ¹	Investment	Investment as Percentage of GDP
1996/97 (Base Year)	1,402,580	5.70	2.90	243,686	17.37
1997/98	1,486,735	6.00	2.89	270,690	18.21
1998/99	1,580,399	6.30	2.87	308,430	19.52
1999/2000	1,687,866	6.80	2.85	365,592	21.66
2000/2001	1,816,144	7.60	2.84	428,973	23.62
2001/2002	1,967,191	8.32	2.83	493,806	25.10
Total/Average (Fifth Plan)	-	7.00	2.85	1,867,491	-

¹ ICVR has been estimated econometrically. The estimation period for the regression has been the post-flood years from 1988/89 to 1995/96. The regression gives an excellent fit with R² higher than 0.9 and both t and F statistics are significant. ICVR so estimated was found to be 2.88. This estimate shows the level of capital productivity in the recent past.

3.3 Financing of Fifth Plan Outlay

3.3.1 Proposed investment will be financed through increased domestic savings, remittances of Bangladeshi workers abroad, FDI and official development assistance (ODA). In the public sector, ODA will decline as a percentage of GDP from 4.3 per cent in the first year of the Plan to 3.5 per cent in the terminal year. This is in conformity with the policy for achieving self-reliance within the shortest possible time. Proposed financing of the Plan outlay is shown in Table 3.3.

Table 3.3
Financing of Fifth Plan Outlay
(at 1996/97 prices)

(in billion Taka)

Items	Total	Share (%)	Public	Share (%)	Private	Share (%)
Plan Size	1,959.52	100.00	858.94	100.00	1,100.58	100.00
Domestic Resource	1,519.76	77.56	527.72	61.44	992.04	90.14
External Resource	439.76	22.44	331.22	38.56	108.54	9.86

3.3.2 Domestic savings is projected to rise from 7.7 per cent of GDP in 1996/97 to 16.5 per cent in the terminal year of the Plan. National savings is estimated at about 15 per cent of GDP in the base year of the Plan. It is projected to rise to 20.14 per cent in the terminal year of the Plan. To this end, appropriate fiscal and monetary measures will be undertaken. Remittances of Bangladeshi workers abroad is projected to increase by 5 per cent annually

over the Plan period. Annual phasing of the Plan outlay for the public and private sectors alongwith their sources of financing is shown in Tables 3.4 and 3.5.

Table 3.4
Phasing of Public Outlay in Fifth Plan
(at 1996/97 prices)

(in million Taka)

Items	1996/97 (Base Year)	1997/98	1998/99	1999/2000	2000/2001	2001/2002	Total
ADP	117,000	121,905	138,534	167,308	199,279	231,913	858,939
External Resource	59,750	64,200	64,181	66,309	67,325	69,205	331,220
Domestic Resource	57,250	57,705	74,353	100,999	131,954	162,708	527,719
Domestic Resource Share(%)	48.93	47.34	53.67	60.37	66.22	70.16	61.44

Table 3.5
Phasing of Private Investment in Fifth Plan
(at 1996/97 prices)

(in million Taka)

Items	1996/97 (Base Year)	1997/98	1998/99	1999/2000	2000/2001	2001/2002	Total
Private Investment	139,222	161,846	184,740	216,210	251,045	286,741	1100,582
External Resource	13,730	15,961	18,219	21,323	24,758	28,279	108,540
Domestic Resource	125,492	145,885	166,521	194,887	226,287	258,462	992,042
Domestic Resource Share(%)	90.14	90.14	90.14	90.14	90.14	90.14	90.14

3.3.3 FDI is, at present, not very significant. This, however, is envisaged to be a prospective rich source of financing of private investment in Bangladesh. During the Fifth Plan, FDI will be attracted in substantial volume through incentives, deregulation and promotion of the market economy and above all, maintaining macroeconomic stability.

3.3.4 Mobilisation of domestic savings is dependent on the implementation of several policies, viz., (a) increase in revenue surplus through extension of tax base, effective tax administration and budgetary discipline, (b) minimisation of government losses through privatisation of the losing public enterprises and replacing administered prices by market prices for goods and services produced in the public sector, (c) reduction of losses of retained state owned enterprises and corporations through proper reforms and structural reorganisation, (d) adoption of diversified savings schemes and introduction of new financial instruments, (e) initiation of proper fiscal and monetary policies to curb inflation, (f) collection of dues on privatised units, (g) increase in net capital receipts of the government, (h) minimisation of food budget deficit by appropriate pricing for public food distribution and (i) promotion of local development activities.

3.3.5 The financial sector reform, conversion of nationalised commercial banks (NCBs) into private banks and establishment of new banks and financial institutions following deregulation and liberalisation policies will play an important role in promoting financial intermediation and private investment. Reforms of capital market, introduction of new financial instruments and savings schemes and development of financial markets will lead to increased mobilisation of domestic savings. As there is, at present, very little information regarding the savings behaviour of different sectors and classes, such information will be collected and savings mobilisation strategy will be devised during the early stages of the Fifth Plan.

3.4 Projection of GDP Growth

3.4.1 The Fifth Plan projects a GDP growth at an average annual compound rate of 7 per cent. In the first year it is estimated at 6 per cent and in the terminal year at 8.3 per cent.

3.4.2 An input-output model has been used to project both sectoral growth as well as sectoral investment. The input-output table of 1992/93 has been revised in the Planning Commission using most recent census of manufacturing industries (CMI) data available with BBS. New coefficients have been estimated for more than 25 sectors. While estimating sectoral output and value added, care has been taken to protect the exogenously set targets for basic need items such as food, clothes, housing, education and health.

3.4.3 Historical evidences show that the poor performance of agriculture has led to large rural-urban migration and consequent burgeoning of the informal sectors. It is the aim of the Plan to change this pattern which is not conducive to the acceleration of overall growth of the economy. It focuses on the acceleration of growth in the productive sectors, especially in agriculture and industry, to a rate higher than that achieved in the past. As the intersectoral balance shows, there will be a tremendous demand for power and gas in order to achieve the desired growth rate of GDP. As these require lumpy investment and there is a time lag in their coming into production, immediate steps are needed to put in motion new capacity creation in the area of power and gas.

3.4.4 Sectoral composition of GDP at market prices of 1996/97 with growth rates are shown in Table 3.6. Agriculture is estimated to have contributed 29.82 per cent of GDP in 1996/97. The crop sub-sector accounted for 72.03 per cent of GDP in agriculture. Growth rate of the crop sub-sector was only 5.6 per cent in 1996/97 against the growth rates of 8 per cent, 8.9 per cent and 4.2 per cent of livestock, fisheries and forestry sub-sectors respectively. Programmes for the development of crop sub-sector have therefore been formulated to increase the output substantially. Foodgrain production is projected to be 25 million tons by the terminal year, if not earlier. In order to achieve this, appropriate technological improvements will be required and the agricultural research institutions will be strengthened with focus on seed development, fertiliser application, and water use--all at the farm level. With accelerated production of foodgrain, crop diversification programmes will be easier to implement to increase output of minor crops and achieve nutritional balance. Also, programme will be initiated to move into higher value added non-crop agriculture. Production of livestock and fisheries are expected to increase by about 30 per cent and 52 per cent respectively during the Plan period. The Plan will focus on increasing commercialisation to facilitate the growth of these sub-sectors.

Table 3.6
Projected Sectoral GDP Respective Shares and Growth Rates for Fifth Plan
(at 1996/97 prices)

(in million Taka)

Items	1996/97		2001 / 2002		Growth Rate (%)
	Value Added	Share (%)	Value Added	Share (%)	
Agriculture	418,306	29.82	508,945	25.87	4.00
Industry	130,111	9.28	249,852	12.70	13.94
Construction	82,346	5.87	119,322	6.07	7.70
Power and Gas	30,834	2.20	86,808	4.41	23.00
Transport	158,040	11.27	227,000	11.54	7.51
Housing	134,117	9.56	173,660	8.83	5.30
Public Administration	79,048	5.64	95,254	4.84	3.80
Health	19,184	1.37	26,041	1.32	6.30
Education	58,685	4.18	80,566	4.10	6.54
Trade	125,799	8.97	177,173	9.01	7.09
Banking and Insurance	28,084	2.00	37,583	1.91	6.00
Other Services	138,026	9.84	184,987	9.40	6.03
Total	1,402,580	100.00	1,967,191	100.00	7.00

3.4.5 Manufacturing sector showed mixed performances in the past. Production of jute goods, textile products, sugar, paper and cement fluctuated widely. Garments and leather goods sub-sectors, however, expanded significantly. The government provided various incentives and facilities to encourage private investment in the industrial sector. Opportunities for foreign private investment have been opened up in all the areas except few nationally strategic ones. It is expected that with the expansion of market economy, private investment will increase substantially during the Fifth Plan and growth rate of the industrial sector will be accelerated. Main thrust in this sector will be on diversification of its structure focusing particularly on export oriented sectors such as garments, leather goods, computer data entry, software and electronics. Establishment of backward linkage industries will be encouraged to complement this process.

3.4.6 Critical importance of the energy sector for the overall development of Bangladesh is recognised. In the past, the sector depended wholly on government fund to ensure adequate supply of energy for industrial as well as agricultural development. In recent years the government has formulated appropriate policies to encourage private investment, especially foreign direct participation for large investment. There has developed significant shortfall in power supply in meeting its growing demand. Therefore, investment for the energy sector is proposed to be increased substantially in the Fifth Plan and higher growth rate is projected for the sector. Inefficiency in power generation, transmission and distribution as indicated by large system loss will significantly be reduced during the Plan period through appropriate policy measures, organisational development and privatisation of the critical phases of the power system.

3.5 Structure of GDP

3.5.1 Structure of GDP has been changing over the period of the previous Plans. There will be a marked change in the structure of GDP during the Fifth Plan. Share of agriculture is projected to fall from 29.82 per cent in the base year to 25.87 per cent in the terminal year of

the Plan. The shares of industry and energy sectors will increase. The projected structural changes are shown in Table 3.6.

3.5.2 Contribution of agriculture will decline over the Plan period due to faster growth of the non-agricultural sectors, particularly industry and energy. High growth of industry (about 14 per cent) and energy (23 per cent) sectors as projected are required to support the overall growth of GDP at the rate of 7 per cent.

3.6 Projection of Major Physical and Social Indicators

3.6.1 Growth rate of population, which has declined, is expected to fall further significantly during the Fifth Plan. Population is projected to increase at an average annual growth rate of around 1.37 per cent from 123.8 million in 1996/97 to 132.5 million in the terminal year of the Plan. Per capita income will thus increase at an annual rate of around 5.6 per cent and per capita consumption will significantly increase to bring about visible improvement in the standard of living of the people. Besides raising per capita income, the Plan proposes to further strengthen target group approach for implementation of poverty alleviation programmes effectively in collaboration with the local governments and NGOs. In the light of recent experiences in societal change, reduction of poverty will be taken as synonymous with socio-economic development of the country. With this end in view, adequate resources will be directed to the expansion of employment and income generating activities, rural development, women and youth development and provision of basic needs for the target groups. For a rapid expansion of employment opportunities, the Plan expects a greater role for the private sector than ever before. Public sector will also create substantial employment opportunities through its poverty alleviation and infrastructure development programmes.

3.6.2 Major physical and social indicators are given in Table 3.7. Such achievement will depend not only on the flow of new investment but also on efficient use of existing capacities through development of management capability in both the public and private sectors. Appropriate macroeconomic policies and strategies will be implemented to achieve these targets.

Table 3.7
Projection of Major Physical and Social Indicators of Fifth Plan

Items	Unit	1996/97 Base Year	2001/2002 Terminal Year	Percentage Increase over Base Year
I. Agricultural Production				
1. Cropping Intensity	percentage	185.00	192.00	3.78
2. Foodgrain	million ton	20.43	25.12	22.96
(a) Rice	million ton	18.88	23.40	23.94
(b) Wheat	million ton	1.45	1.60	10.34
(c) Other Coarse Grain	million ton	0.10	0.12	20.00
3. Jute (raw)	million bale	4.87	7.24	48.67
4. Cotton (raw)	million bale	0.10	0.26	160.00
5. Potato including Sweet Potato	million ton	2.35	3.09	31.49
6. Vegetables	million ton	1.45	1.82	25.52
7. Oilseeds	million ton	0.37	0.76	105.41
8. Pulses	million ton	0.53	0.85	60.38
9. Tea	million kg	54.00	60.00	11.11
10. Fish	million ton	1.37	2.08	51.82
11. Livestock Population	million number	227.11	294.50	29.67
12. Irrigation	million ha	3.99	5.04	26.32
13. Flood Control and Drainage	million ha	4.20	4.90	16.67
II. Industrial Production				
1. Sugar	million mt	0.14	0.23	64.29
2. Yarn	million kg	113.00	522.00	361.95
(a) Cotton Yarn	million kg	75.71	349.74	361.95
(b) T.C and Others	million kg	37.29	172.26	361.95
3. Fabrics	million metre	1,163.00	3,651.00	213.93
(a) Cotton Cloth	million metre	779.21	2446.17	213.93
(b) T.C and Others	million metre	383.79	1204.83	213.93
4. Fabrics for Garments	million metre	210.00	1620.00	671.43
(a) Cotton Fabrics	million metre	140.70	1081.38	668.57
(b) T.C and Others	million metre	69.30	538.62	677.23
5. Jute Textiles	'000' mt	435.00	500.00	14.94
6. Paper, Pulp and Newsprint	'000' mt	70.00	124.20	77.43
7. Fertilisers	'000' mt	2,153.99	2,583.00	19.92
8. Cement	'000' mt	107.30	233.00	117.15
9. Leather (export quality)	million sq.m.	13.01	18.58	42.81

Table 3.7 (Contd.)
Projection of Major Physical and Social Indicators of Fifth Plan

Items	Unit	1996/97 Base Year	2001/2002 Terminal Year	Percentage Increase over Base Year
III. Energy Supply				
1. Electricity Generation (capability)	mw	2,148.00	5,739.00	167.18
Maximum Demand	mw	2,087.00	4,051.00	94.11
Distribution Line	'000' km	43.84	53.93	23.02
2. Rural Electrification				
Distribution Line	'000' km	85.11	135.11	58.75
Villages Electrified	'000' number	20.52	32.52	58.48
3. Natural Gas	bcf	285.00	365.00	28.07
4. POL Products	million mt	2.38	3.49	46.64
IV. Physical Infrastructure				
1. (a) Paved Road (National/Regional/ Thana Connecting)	'000' km	11.50	14.00	21.74
(b) Rural Road	'000' km	9.55	17.45	82.72
2. Telephone	million number	0.52	1.22	134.62
V. Social Sector				
1. Primary School Enrolment (6-10 yrs)	million persons	17.28	18.99	9.90
2. Primary School Enrolment (6-10 yrs)	ratio	95.00	100.00	5.26
3. Primary School	'000' number	75.00	80.00	6.67
4. Literacy Rate (adult)	percentage	47.30	70.00	48.00
5. Female Literacy Rate	percentage	38.10	60.00	57.48
6. Drinking Water				
(a) Urban Area (Piped Water)	million litre/per day	850.00	1250.00	47.06
(b) Rural Area (Tubewells)	million number	1.03	1.56	51.46
7. Sanitation				
(a) Urban Area (Sewerage in Dhaka)	coverage (%) of hh	35.00	40.00	14.29
(b) Rural Area (Sanitary Latrine)	million number	2.56	5.38	110.16
8. Hospital Beds	'000' number	37.13	42.00	13.12
9. Population Growth Rate	% per year	1.75	1.32	(-)24.57
10. Population (mid year)	million persons	123.80	132.50	7.03
11. Life Expectancy	years at birth	58.00	60.00	3.45
12. Infant Mortality Rate	per 1000 live births	78.00	55.00	(-)29.49
13. Maternal Mortality Rate	per 1000 live births	3.60	3.00	(-)16.67
14. Immunisation (Under 1 Year Children)				
(a) BCG	percentage	66	85	28.79
(b) DPT	percentage	73	80	9.59
(c) Measles	percentage	80	90	12.50
(d) Polio	percentage	75	85	13.33
(d) Polio	percentage	80	90	12.50
15. Population Below the Poverty Line	percentage	45	30	(-)33.33
16. Nutritional Status /Energy Intake	k.cal	1,950	2,300	17.95
17. Contraceptive Prevalence Rate	percentage	48	60	25.00

3.7 Employment Prospect

3.7.1 Size of the labour force of Bangladesh was estimated, according to the usual definition¹, at 40.5 million in 1994/95 and at 43 million in 1996/97. The Fourth Plan created about 4.6 million additional employment against the target of 5.05 million. During the period addition to the labour force was about 5.7 million persons.

¹ Excludes own household economic activities.

3.7.2 Labour force (age 15+ years) is projected to grow at the rate of 2.5 per cent per annum over the Fifth Plan period and rise to 58.33 million, according to the extended definition² in the terminal year. Total employment is likely to increase from about 50 million persons in 1996/97 to 56.35 million persons in the terminal year. Thus, an additional employment for 6.35 million persons will be created during the Plan period. Employment generation in different sectors of the economy is presented in Table 3.8.

Table 3.8
Employment Projection for Fifth Plan

Sectors	1996/97*	2001/2002
Agriculture	31,500	33,382
Industry	3,700	5,847
Power, Gas and Natural Resources	105	215
Physical Planning, Housing and Construction	1,034	1,196
Transport and Communication	2,238	2,626
Trade and Other Services	11,423	13,079
Total	50,000	56,345

(thousand persons)

*Estimated on the basis of Labour Force Surveys, 1995/96 and 1990/91.

3.7.3 Projection of employment has been derived on the basis of sectoral growth rates. It will be realised, in a larger part, through self-employment and rural development programmes.

3.7.4 The objective of the Plan is to create productive employment. Several steps will be taken for enhancing labour productivity. Such steps will include skill development through on-the-job training, vocational training, improvement of less capital intensive technology and acquisition of modern technology.

3.8 Resource Allocation for Fifth Plan

3.8.1 In order to bring about the planned growth rate of 7 per cent, total outlay is projected to be about Tk.1,959.52 billion with 44 per cent in the public sector (Tk.858.94 billion) and the rest in the private sector (Tk.1,100.58 billion). Besides trade and other services, the largest share of investment is going to be in agriculture (16.46 per cent), closely followed by industry (15.85 per cent) and transport and communication (13.5 per cent). Plan outlay by major sectors is shown in Table 3.9.

3.8.2 While the Fifth Plan intends to bring about a much greater share for the private sector through favourable institutional and policy changes, the relative share of the private and public sectors in the Plan outlay will vary among different sectors of the economy. In the public sector, highest share will be in agriculture (including rural development) in order to develop infrastructure to facilitate growth. On the other hand, the government's involvement in directly productive activities will be reduced. The share of industries in the total public outlay will hardly be 1.4 per cent. Against this, in the private sector, the greatest emphasis will be on industries (27.15 per cent of total private investment). Growing partnership between the private and public sectors in infrastructure investment is a global trend and

² Includes own household economic activities.

Bangladesh will be of no exception. During the Fifth Plan, total outlay in the transport and communication sectors will almost be evenly split between the public and private sectors. The role of the private sector is also envisaged to grow in the power and gas sector. Already, some Memoranda of Understanding have been signed between the government and foreign investors. A quarter of total investment in this sector is expected to be made by the private sector.

Table 3.9
Sectoral Distribution of Plan Outlay
(at 1996/97 prices)

(in million Taka)

Sectors	Public Sector*	Private Sector	Total
Agriculture	202,674.68 (23.60)	119,864.31 (10.89)	322,538.99 (16.46)
Industry	11,793.70 (1.37)	298,776.16 (27.15)	310,569.86 (15.85)
Housing and Construction	49,816.00 (5.80)	180,017.61 (16.35)	229,833.61 (11.73)
Power and Gas	114,400.60 (13.32)	37,726.07 (3.43)	152,126.67 (7.76)
Transport and Communication	145,540.11 (16.94)	118,876.80 (10.80)	264,416.91 (13.50)
Trade and Others	334,713.91 (38.97)	345,321.15 (31.38)	680,035.06 (34.70)
Total	858,939.00 (100.00)	1100,582.10 (100.00)	1959,521.10 (100.00)

* Includes non-investment expenditures. Figures in parentheses are percentage share in total outlay. Of the total public sector allocation, about Tk. 256 billion (30%) will be in the social services sectors.

3.8.3 Private investment is envisaged to be induced by the new prospects in a market economy. The projected level of public outlay together with anticipated level of private investment will sustain 7 per cent growth. Resource allocation between the private and public sectors has been made according to the recent trend, efforts for mobilisation of domestic resources by the government, saving-investment behaviour of the private sector, monetary and fiscal policies to be pursued and sectoral linkages.

3.8.4 In conformity with the overall objectives of the Plan and greater role of the private sector than ever before in a market economy, the public sector resource allocation has been determined to address the sectoral priorities concerning public interventions for social justice, supply of basic needs, poverty alleviation, productive employment generation, human resource development and development of social and economic infrastructures. Accordingly, agriculture, water resources and rural development, physical infrastructure development, energy, health and education have been given high priority in the public sector as shown in Table 3.10.

3.8.5 Rural development has been accorded priority for the reduction of rural poverty through expansion of productive employment and income generating activities, human resources development and skill formation, increased participation of women and youth in the development process, building of physical infrastructure in the rural areas and development of rural institutions. Successful rural development and poverty alleviation programmes and projects will be supported and replicated and new projects will be undertaken. The Fifth Plan takes a comprehensive view of rural poverty as a syndrome of rural under-development.

Compared to the Fourth Plan where rural development was allocated 4.76 per cent of the total public outlay, this sector will receive more than 10 per cent of the Fifth Plan public outlay. This reflects the importance given to rural poverty alleviation through overall rural development.

Table 3.10
Public Sector Outlay for Fifth Plan
(at 1996/97 prices)

(in million Taka)

Sectors	1996/97 (Base Year)	1997/98	1998/99	1999/2000	2000/2001	2001/2002	Total (FFYP)
Agriculture	6,407.00	5,956.00	6,719.28	8,910.27	9981.28	10,732.25	42,299.08
Rural Development	10,264.00	9,192.00	10,000.75	16,961.75	22,745.75	28,102.23	87,002.48
Water Resources	10,580.00	10,155.00	10,509.91	10,961.91	12,000.91	12,569.89	56,197.62
Ganges Barrage	-	-	555.63	4,830.62	5,608.62	6,180.63	17,175.50
Industry	1,867.00	1,179.00	1,596.17	2,409.18	3,032.17	3,577.18	11,793.70
Energy	14,083.00	13,831.00	15,859.50	19,109.50	19,800.50	19,760.50	88,361.00
Oil, Gas and Natural Resources	4,858.00	4,767.00	4,902.90	5,210.90	5,443.90	5,714.90	26,039.60
Transport	13,938.00	14,621.00	17,147.88	20,774.88	25,976.88	31,434.87	109,955.51
Bangabandhu Bridge	9,380.00	6,611.00	5,189.00	-	-	-	11,800.00
Communication	2,247.00	2,714.00	4,307.90	4,943.90	5,629.90	6,188.90	23,784.60
Physical Planning and Housing	6,804.00	7,907.00	8,170.75	8,926.75	10,949.75	13,861.75	49,816.00
Education	15,837.00	16,078.00	19,848.88	26,023.88	30,898.88	36,081.86	128,931.50
Health	5,849.00	5,607.00	7,721.35	12,274.35	15,796.35	20,873.35	62,272.40
Population and Family Welfare	4,938.00	5,190.00	5,238.00	5,644.00	6,073.00	6,445.00	28,590.00
Sports and Culture	596.00	764.00	962.62	1,139.63	1,342.63	1,529.62	5,738.50
Social Welfare, Women and Youth Development	1,866.00	1,592.00	1,914.17	2,776.17	3,574.18	4,457.18	14,313.70
Mass Media	420.00	482.00	688.17	913.18	1,211.17	1,551.18	4,845.70
Science and Technology	380.00	429.00	780.03	994.03	1,269.02	1,579.02	5,051.10
Labour and Manpower	90.00	97.00	170.55	266.55	385.55	470.55	1,390.20
Public Administration	956.00	1,050.00	1,371.58	1,886.57	2,396.58	2,969.57	9,674.30
Sub-total	111,360.00	108,222.00	123,655.02	154,958.02	184,117.02	214,080.43	785,032.49
Bloc	5,640.00	13,683.00	14,878.98	12,349.98	15,161.98	17,832.57	73,906.51
Total	117,000.00	121,905.00	138,534.00	167,308.00	199,279.00	231,913.00	858,939.00

3.8.6 In order to accelerate the agricultural growth of the west zone which has a comparative advantage in agriculture, a project for the construction of a barrage on the river Padma will be undertaken during the Fifth Plan for optimum utilisation of the water flow for flood management, irrigation and river basin development. The Fifth Plan allocation for the project (Ganges Barrage) is shown separately under the water resources sector in Table 3.10. The project will provide irrigation facilities to an area of about 1.35 million hectares. The right bank intake canals from the barrage will feed water into the Gorai, the Kumar, the Nabaganga, the Chitra, the Kobadak, the Modhumati and other rivers. This will also serve the area to the west of the Ganges-Kobadak project areas. The total cost of this project has been estimated at Tk. 140.82 billion. It includes costs of barrage, main canals, drainage canals as well as feasibility study and detailed engineering. During the Plan period, Tk.17.18 billion will be spent. The project will increase agricultural production through creating irrigation, drainage and flood control facilities. It will also serve as a road bridge over the Padma. Besides, the barrage will provide the required quantum of flows through the Gorai in the dry

season to check the salinity intrusion in the south-west region of Bangladesh, maintain ecological balance and protect environment of the region.

3.8.7 As of now, the power and gas sector is almost entirely in the public sector. As it is highly capital intensive and lumpy, the development of this sector will receive public sector priority, receiving more than 13 per cent of total ADP allocation. In order to meet the existing power gap, larger allocation of fund has been made than in the previous Plans to increase the generation capacity of the power sector. The government's present energy policy provides for participation of local and expatriate private entrepreneurs in generation and distribution of power. Private sector participation will get priority to ensure adequate energy supply to industry and agriculture and rural development. Side by side, the transport and communication sectors have also been given due priority in fostering the private sector growth, receiving about 17 per cent of ADP allocation. The transport sector will implement some lumpy projects like Bangabandhu Bridge to remove long haul transport bottlenecks and integrate the rural and regional economies into the national markets.

3.8.8 The social sectors such as education, health, population and family welfare, social welfare, women and youth development have been given high priority in the Fifth Plan. Over 30 per cent of the public outlay is earmarked for the social sectors. During the Fourth Plan, education and health were allocated 10.7 per cent of the public outlay, while the Fifth Plan has allocated over 22 per cent of the public outlay to these sectors. Compulsory primary education, health for all, population control and supply of safe drinking water will get larger shares of resources. Emphasis will be given on the quality of projects in social sectors. NGOs and private sector participation will be encouraged in these areas.

3.9 Private Investment During Fifth Plan

3.9.1 Private investment has been projected on the basis of the investment trend of the recent past, as well as the potential and prospects of the sector in a market economy. The allocation of private investment is indicative only and has been made taking into account the estimated benchmark of 1996/97. The broad sectoral allocation of expected private investment for the Plan period has been given in Table 3.9.

3.9.2 Private sector investment will depend on profitability. However, care will be taken so that profit motive does not infringe on social considerations for equity and environment. Public sector investment will encourage private investment through its infrastructure development programme and ensuring a stable macroeconomic environment. Incentives will be given to the private sector to foster growth in an environment of a free market economy and the society, in turn, will expect the private sector to pursue enlightened self-interest within the system of moral values.

3.10 Policies for Facilitating Private Investment

3.10.1 In order to facilitate private investment, existing structural adjustment policies will be strengthened and further enabling policies will be put in place. The critical factors in achieving the projected private investment will be improvement in (a) domestic resource mobilisation and (b) inflows of FDI. Given the interest shown by various development partners and multinational companies (MNCs), substantial FDI will flow in during the Fifth Plan. In order to encourage the flow of FDI, further physical facilities will be developed and investment friendly legal and administrative services will be created and sustained.

3.11 Balanced Regional Development

3.11.1 The question of balanced regional development can hardly be ignored in a democracy. This needs to be directly addressed within a plan framework. Till date, regional resource endowments such as land and water have not been taken into consideration in designing projects. Water resource development plan of the late 1980s, particularly, approached the problem on a regional basis dividing the country into 5 regions as the regional water resources appear manifestly diverse. At the other end, in the social sectors, such as education and health, people-oriented programmes have been formulated with a more or less equitable approach to the development of regional facilities. But due to the absence of an inter-regional framework as a tool for balanced regional development, regions show significant differences in their development. Not only that, past development also has failed to make full use of comparative advantage of the regions in production and led to somewhat inefficient use of resources. During the Third Plan, a study for optimal use of land and water resources was completed but never used for production planning. Recently (1994), a study on comparative advantage of wheat production covering 5 production regions in Bangladesh was completed. A study for the development of the Rajshahi Division in the background of the Bangabandhu Bridge has also been completed very recently. Nevertheless, a comprehensive framework for balanced regional development is very much needed because of differences in the current levels of development of the regions. In 1992/93, for example, per capita income of the Rajshahi Division was 18.33 per cent less than the national average, though the economy of the region has been growing faster in recent years than the country as a whole. Some of the special area-specific issues and problems in this context are briefly discussed below.

3.11.2 North West Region : Per capita income of the Rajshahi Division was (Tk. 6,830) lower than the national average (Tk. 8,363) in 1992/93 at 1984/85 prices and the level of poverty measured by the calorie intake standard was higher in Rajshahi. Though the division was surplus in food production, about 56 per cent of the population was below the poverty line. In addition, the division has a lower life expectancy (56.5 years), a higher incidence of illiteracy (72.9 per cent) and a lower coverage by immunisation programme in comparison to their respective national averages. The division had also a higher population growth of 2.1 per cent in 1995 than the national average of 1.8 per cent.

3.11.3 The area is now largely agrarian in character, relatively more of income (44.9 per cent) originating in agriculture with correspondingly more of people living in the rural areas (84.3 per cent) and higher proportion of landless households. Though the area has an edge over the rest of the country in several crops in terms of yield, this hardly compensates the low level of per capita income. Nominal wage was lower by a quarter of that of the national average in 1993/94 and real wage about one-tenth less. Higher agricultural growth cannot simply make up the lapses of growth in other areas, particularly in industrial production where value addition per unit of labour is much higher than in agriculture. Industries accounted for 2.93 per cent of Gross Regional Product (GRP) of Rajshahi against 10.56 per cent of GDP of the country in 1992/93. For various reasons such as relative isolation and higher transport cost, problems of raw materials and power supplies and scale of operation, capital is half as productive in Rajshahi as that in the country as a whole (CMI, 1991/92). Considering all these, the necessity for a planned approach towards the industrial development of the area can hardly be overemphasised.

3.11.4 Inter-regional relation with the Rajshahi Division will stand at the crossroad as a result of construction of the Bangabandhu Bridge. It will create a much better prospect for

the integration of the Rajshahi Division with the industrially more advanced south-east region. To mitigate underdevelopment of the region, special investment programmes are envisaged under the Fifth Plan. These programmes will encompass 5 sectors/sub-sectors, namely, agriculture, fisheries, industries and finance, transportation and urban development and have at least 25 specific projects - 5 for each sector. Besides these, special attention will be given to social sectors also.

3.11.5 Currently two massive projects, namely, Barapukaria Coal Mine (cost: Tk. 8.87 billion) and Madhayapara Hardrock Mine (cost: Tk. 8.95 billion) are under implementation in the division. Direct benefits (value addition) from these two projects have been projected to be Tk. 3.38 billion a year when completed by around 2000 AD. These will also enhance opportunities for secondary and tertiary activities in the area. The coal mine will particularly help to overcome its energy problem. A 300 mw power plant based on coal will be undertaken and completed during the Fifth Plan period. In addition, projects will be drawn up for mining coal at Jamalgonj and Khalispur and limestone at Joypurhat.

3.11.6 Special attention to Rajshahi Division will call for (a) extensive road network, (b) enhanced telecommunication facilities, (c) appropriate development of surface and ground water irrigation, (d) setting up 3 universities of science and technology, (e) extension of gas pipe line, (f) establishment of an export processing zone, (g) setting up 3 more industrial estates, (h) increasing regional co-operation with Bhutan, Nepal and Asam, (i) reaching water sharing treaties on the Teesta and the Jamuna and (j) setting up a development finance institution for giving term credit support to private industrial entrepreneurs.

3.11.7 Coastal area: Coastal area of Bangladesh is ecologically sensitive and climatically vulnerable. It is ecologically sensitive because of the continuous process of land accretion which needs to be protected for natural vegetative growth and afforestation. It also contains one (5,000 sq. km) of the largest mangrove forests in the world. But the area has also been subject to severe cyclonic storms originating in the Bay of Bengal, causing some of the greatest disasters of the world. The area covers over 1.8 million of households (1991) in 133 thanas along the coastal belt and is considered as risk prone. In spite of the cyclonic risk, there has been growing population pressure on the area, particularly since the beginning of the construction of 5,000 km of coastal embankments. Such embankments have helped to bring land under rice cultivation as salinity reduced. In recent years, the area has also taken up extensive shrimp culture which needs saline water. This development has created conflict of interests between small farmers and relatively wealthy shrimp farm owners. Besides this, shrimp culture has also adversely affected the mangrove forest. Under these circumstances there is a need for careful planning for the development of the area without irreparably damaging the eco-system of the area.

3.11.8 The area is resourceful in many ways. It contains one of the two rich forest belts of the country and provides fuelwood and raw material for the newsprint mill. Its flora and fauna contribute to other production also. Indeed, with the loss of inland flood plains, the area including its offshore belt has grown in importance for fisheries. Above all, continuous silting of the area by rivers and channels has enriched the soil within the embankments for paddy cultivation. In spite of these potentials, no concerted efforts has been made to secure the development of the area against its natural risk and ecological sensitivity except for shelter of people and livestock. Even in this respect, existing facilities are inadequate and in derelict condition. After the cyclone of 1991 in which about 139 thousand people perished, multipurpose cyclone shelter programme (MCSP) was developed with focus on the

development of shelter-cum-school/community facilities. Though the programme will save lives, it will not enhance the capability of people to endure the economic losses (crop, fish, livestock, etc.) due to cyclone. The desired socio-economic goal can be achieved only by accelerated development of the area.

3.11.9 For development of coastal areas, emphasis will be given on (a) development of appropriate housing for low income people, (b) building more cyclone shelters, (c) developing intensive shrimp and pisciculture, (d) completing embankments, (e) encouraging fish processing industries, (f) setting up export processing zones and (g) building efficient power, transportation and telecommunication links, particularly with the islands.

3.11.10 Very recently, sizeable gas resources have been found in the coastal areas. Special emphasis will be given to utilise these resources for production of power and setting up of downstream manufacturing based on gas.

3.11.11 Haors and Baors: Permanent water bodies, namely haors and baors, cover about 1,180 sq. km of area in the month of October, which shrinks to 316 sq. km in May. Part of these permanent wetland has been lost to agriculture due to poldering for irrigation. The existing ones are rich in fish resources. In 1981, an area of 0.42 million hectare was counted as fishing area, of which, over 20 per cent was in Sylhet, 16.5 per cent in Khulna, 13.4 per cent in the greater Mymensingh including Jamalpur and Tangail, 8.4 per cent in Dhaka and 7.9 per cent in Rajshahi. In 1992, the haors and beels produced over 50 thousand tons of fish or 7.5 per cent of the total inland fish catch. Though currently they appear to be not much significant as fishery resources, yet as wetland they occupy a critical position in maintaining ecological balance. This balance has been disturbed by their empolderment in the interest of food production, though their effect is not easily discernible. The geomorphological events posited these depressions as they happened and the wet areas are scattered throughout the length and breadth of the country; but as they are largely viewed as sources of both water and fish, they can be protected for ecological balance only through proper planning and management of water resources of the country. In the Fifth Plan, special attention to these areas will be given.

3.11.12 Chittagong Hill Tracts: The area consists of 3 administrative districts covering an area of 13.03 thousand sq. km with a population density of 78.2 persons per sq. km. Out of a total area of 1,330 thousand hectares of land, only 80 thousand hectares of land are considered as cultivable. This creates heavy pressure on usually cultivable land and encourages Jhum cultivation in grove lands on hill slopes. Forest covers 6,404 sq. km of these tracts - over one-third of the country's total. The only hydroelectricity plant of the country is located in the area. The economy of the area grew somewhat faster (4.26 per cent a year) than that of the country as a whole (4.04 per cent) in terms of income between 1985/86 and 1992/93. Per capita income in these tracts was estimated at Tk. 14,400 in 1992/93 against the national average of Tk. 8,368. The area is predominantly agricultural. More than 64 per cent of the GRP of the area comes from agriculture compared with the national average of 35.92 per cent in 1992/93. Industries accounted for 6.13 per cent of GRP, which is lower than the national average.

3.11.13 While the area fares better economically than some of the other areas, its development in the social sector fails to be commensurate with it; for instance, literacy rate is lower than the national average of 47.3 per cent. Ethnic diversities and terrain undoubtedly make an overall social development of the area difficult. In early 1980s, special programmes were undertaken for the development of the area. In 1992/93, there were about 91 primary

schools per 100 thousand population in the area against about 46 on average in the country. Thus, it seems that the isolation of the communities continues to affect efficient use of facilities as the literacy rate shows. The isolation of the communities spread out in small settlements is also reflected in the fact that there are 22 thana health complexes for a million population in the area, while for the country as a whole there is 1 thana health complex for the same size of population. Ethnic disturbances that pervaded the area since 1975 stood on the way of full utilisation of all these facilities and realisation of the high development potential. This problem has now been resolved.

3.11.14 Special attention to the development of these tracts in the Fifth Plan period will manifest in (a) extensive road connection and telecommunication facilities, (b) intensive geological survey for mineral resources, (c) horticultural development, (d) provision of safe drinking water, (e) prevention of soil erosion, (f) intensive agricultural extension, (g) setting up fruit processing industries, (h) extending agricultural extension services and (i) encouraging creation of tourist facilities. Following signing of the Peace Treaty on December 2, 1997, the government has initiated a dialogue with the donors for the development of the region.

3.12 Integration of Regional Development Programme with ADP

3.12.1 As regional development will receive high priority during the Fifth Plan, each ministry will need to take up projects from their sectoral allocation under ADP addressing issues related to development of various regions. The maintenance of these projects, as discussed elsewhere in the Plan, will be the responsibility of the relevant local governments. Local governments will also need to get involved in the implementation of that part of the central project which falls under their jurisdiction. As these projects, in most cases, will address directly the problems the local people face, the efficiency of implementation will be higher.

CHAPTER IV

DOMESTIC RESOURCES

4.1 Introduction

4.1.1 The Fifth Plan considers the generation of resources not as a static process, but as a dynamic one. Efficient utilisation of resources, which is one of the key themes of the Fifth Plan, will initiate a growth process which itself will produce additional resources. Part of this, in turn, will be mobilised for development through innovative financial instruments and strengthening of financial intermediation. These steps will also activate the national savings for development purposes. The Fifth Plan will make an all-out effort to mobilise people for development. Initiative of the people will bring into use even the non-monetised resources as evidenced by many rural development experiments in Bangladesh.

4.1.2 Given the expected level of foreign aid, about 78 per cent of the total Plan outlay will require to be financed from domestic resources (including remittances from abroad). Out of the Plan outlay of Tk.1,959.52 billion, only Tk.439.76 billion is expected to be foreign financed. The balance Tk.1,519.76 billion will need to be mobilised from domestic sources. Both the public and private savings will have to be increased substantially to finance the Fifth Plan. It will have to be ensured that resource mobilisation for the public sector does not impinge on the savings required for financing private investment. Much of the success of the Fifth Plan to mobilise domestic resources will depend on the proper use of fiscal and monetary measures. The Fifth Plan projects that about Tk.527.72 billion (35 per cent) of the domestic resources will be mobilised in the public sector and rest Tk.992.04 billion (65 per cent) will be in the private sector. Therefore, the private sector is expected to play a major role in the domestic resource generation. In view of the recent dynamism of the private sector, especially expansion of investment and acceleration of growth in the export-oriented industries, it is expected that the private sector will be able to mobilise the required domestic resources as the financial deepening of the economy continues.

4.2 Review of Fourth Plan

4.2.1 A major objective of the Fourth Plan was to improve domestic resource mobilisation in both the public and private sectors. Because of strong reform measures, both tax and non-tax revenues exceeded their respective Plan projections. As a result, total revenue receipts during the Plan period was Tk.471.57 billion at 1989/90 prices exceeding the Plan projection of Tk.457.9 billion. However, current expenditure overshoot its target by about 3.7 per cent so that revenue surplus barely exceeded the Plan expectation by 0.7 per cent. While there was a food budget deficit, it was offset by higher net capital receipts. As a result, domestic resource generation in the public sector exceeded the planned amount by more than 33 per cent.

4.3 Public Sector Development Expenditure During Fourth Plan Period

4.3.1 The Fourth Plan provided Tk.347 billion at 1989/90 prices for the public sector development outlay. Total development expenditure in the public sector during the Plan period was estimated at Tk.322.44 billion realising about 93 per cent of the target. Sector-wise distribution of development expenditure is presented in Table 4.1. Sectoral performance during the Fourth Plan has been discussed in details in the respective sectoral chapters as a prelude to the Fifth Plan. The table shows that there was under-spending in some sectors. In industry, actual development expenditure stood at Tk.5.03 billion as against Tk.16.84 billion earmarked for the sector. The shortfall was attributed to the government

policy shift towards encouraging private sector investment in industry. Development expenditures in health, family welfare, labour and manpower and public administration sectors lagged behind the targets. There was, however, over-spending in rural development, transport and education. This was also due to policy shift of the government towards public investment for infrastructure development and for human resource development.

Table 4.1
Public Sector Performance During Fourth Plan
(at 1989/90 prices)

(in billion Taka)

Sectors	Allocation	Realised Expenditure	Realised Expenditure as Percentage of Allocation
Agriculture	23.26	18.82	80.91
Rural Development and Institution	16.50	17.93	108.67
Water Resources	38.29	26.73	69.81
Industry	16.84	5.03	29.87
Power	45.36	41.88	92.33
Oil, Gas and Natural Resources	23.98	15.32	63.89
Transport	46.53	51.26	110.17
Communication	6.52	12.13	186.04
Physical Planning and Water Supply	18.42	13.78	74.81
Education	26.58	29.05	109.29
Sports and Culture	1.46	1.51	103.42
Health	10.60	9.83	92.74
Family Welfare	15.98	15.16	94.87
Mass Media	1.23	1.19	96.75
Social Welfare, Women and Youth Development	2.35	2.02	85.96
Public Administration	2.01	0.71	35.32
Science, Technology and Research	0.54	0.49	90.74
Labour and Manpower	0.85	0.18	21.18
Sub-total	297.30	263.02	88.47
Others	49.70	59.42	119.56
Total	347.00	322.44	92.92

4.3.2 Operation of the Annual Development Programme (ADP) as a development tool is shown in Table 4.2. The size of the revised ADPs increased at an average rate of about 13.65 per cent between 1990/91 and 1994/95. This is attributed to intensive efforts for domestic resource mobilisation. The utilisation of ADP funds also showed significant improvement in terms of absorption of both local resources and project aid in the last two financial years.

Table 4.2
Utilisation of ADP Funds During Fourth Plan
(at 1989/90 prices)

(in billion Taka)

Year	Revised ADP			Actual Expenditure		
	Total	Taka	Project Aid	Total	Taka	Project Aid
1990/91	56.95	22.62	34.33	49.04	21.38	27.66
1991/92	63.47	27.52	35.95	53.48	23.37	30.11
1992/93	69.64	33.38	36.26	56.17	27.12	29.05
1993/94	81.17	44.31	36.86	75.97	41.32	34.65
1994/95	95.00	55.47	39.53	87.78	51.06	36.72

4.4 Trend in Fiscal Indicators During Fourth Plan

4.4.1 Trend in the five fiscal indicators during the Fourth Plan period is shown in Table 4.3. The table shows that the Tax/GDP ratio increased from 7.9 per cent in 1990/91 to 9.7 per cent in the terminal year. Non-tax/GDP ratio was 2.4 per cent in 1994/95 rising from 1.7 per cent in 1990/91. Revenue expenditure/GDP ratio increased from 8.7 per cent in 1990/91 to 9.1 per cent in 1992/93 and then came down to 8.8 per cent in 1994/95 as a result of containing expenditures. ADP Expenditure/GDP ratio increased from 6.3 per cent in 1990/91 to 8.8 per cent in the terminal year of the Fourth Plan. Overall fiscal deficit however was reduced from 7.2 per cent of GDP in 1990/91 to 6.8 per cent in 1994/95, though it had been rising since 1992/93 after falling to a level of 5.9 per cent.

Table 4.3
Trend in Fiscal Variables During Fourth Plan
(at current prices)

(in billion Taka)

Items	1990/91	1991/92	1992/93	1993/94	1994/95
GDP	834.39	906.50	948.06	1,030.36	1,170.26
Tax	65.88	79.10	91.69	97.33	113.64
Non-tax	14.08	19.16	21.20	26.64	27.79
Revenue Expenditure	72.28	77.92	85.97	92.78	103.18
ADP Expenditure	52.70	60.24	65.50	89.84	103.03
Tax/GDP Ratio (%)	7.90	8.73	9.67	9.45	9.71
Non-tax/GDP Ratio (%)	1.69	2.11	2.24	2.59	2.37
Revenue Expenditure /GDP Ratio (%)	8.66	8.60	9.07	9.00	8.82
ADP Expenditure /GDP Ratio (%)	6.32	6.65	6.91	8.72	8.80
Fiscal Deficit/ GDP Ratio * (%)	7.20	5.90	5.90	6.00	6.80

Source: Ministries of Finance and Planning and World Bank.

* Fiscal deficits are higher than the difference between total revenue and total expenditure due to inclusion of expenditure items like non-ADP projects, FFW, miscellaneous investment (non-development), net loans and advances and food deficits.

4.4.2 During the Fourth Plan period, a total amount of Tk.602.98 billion was invested at 1989/90 prices. Out of this, Tk.278.59 billion (46.2 per cent) of investment was made by the public sector and the rest Tk.324.39 billion (53.8 per cent) by the private sector. This led to an average annual growth rate of 4.15 per cent in GDP against the Plan target of 5 per cent.

4.4.3 Investment/GDP ratio which was 12.8 per cent in 1989/90, increased to 16.63 per cent in 1994/95. Domestic savings/GDP ratio increased even faster from 2.7 per cent in 1989/90 to 8.3 per cent in 1994/95. This shows that domestic savings financed almost a half of total investment in 1994/95.

4.5 Monetary Management During Fourth Plan

4.5.1 The financial sector reform programme was implemented in order to attain the objective of gradually liberalising monetary sector in consonance with the development of a market economy. Domestic credit and broad money expanded slowly by 9.4 per cent and 13.6 per cent respectively per annum during the Fourth Plan period. Growth rate of broad money was brought down from 16.88 per cent in 1989/90 to 15.96 per cent in 1994/95. Broad money grew at an average annual rate of 13.6 per cent during 1990-95 against the average annual growth rate of 16.2 per cent during 1985-90. Of the components of broad money (M2), average annual growth rates of time deposits, demand deposits and currency outside banks

were at 12.8 per cent, 15.8 per cent and 15.5 per cent respectively during the Fourth Plan period.

4.5.2 Total domestic credit grew at an annual average rate of 9.4 per cent during the Fourth Plan period. However, net credit to the government increased by an annual average rate of 18 per cent, while credit to the rest of the public sector declined by 0.42 per cent and that to the private sector increased by 10.7 per cent. Thus the growth of credit to the government sector was mainly responsible for the expansion of credit during the Plan period. Assumption of a substantial amount of liability of the banking sector by the government, financial sector reform, jute sector reform, exemption of agricultural credit coupled with higher public expenditures on salaries and wages due to implementation of the new pay scale, etc. resulted in such a high growth rate of credit in the government sector. Denial of new credit to the defaulting borrowers and cautious attitude in the face of large loan defaults were the major causes of slow growth of credit to the private sector in the first four years of the Plan period. The economy also moved sluggishly as was reflected in the lower growth of import which went down in 1990/91 and picked up gradually to 15.5 per cent in 1992/93 but only to decline sharply to a mere 2.9 per cent in 1993/94. During the last 3 years of the Plan period, measures were taken to increase liquidity of banks but private demand for credit was lacking. It was in the last year of the Plan that substantial growth of private sector credit by 26.7 per cent appeared to signal the picking-up of economic activities. Larger expansion of credit to agricultural, industrial and foreign trade sectors contributed largely to the higher growth of credit. Measures such as allowing bank credit against share/debenture, expansion of the scope of export credit and withdrawal of restriction on personal loan contributed to the augmentation of credit to the private sector.

4.5.3 Price situation showed improvement over the Fourth Plan period. Inflation came down from 9.3 per cent in 1989/90 to 8.9 per cent in 1990/91 and to 5.1 per cent in 1991/92 and dropped to 1.3 per cent in 1992/93, but increased to 1.8 per cent in 1993/94 (Table 4.4). Because of increased food prices, as a result of decline in foodgrain production for two consecutive years after the record harvest of 1992/93 and expansion of credit raised inflation rate over 5 per cent in 1994/95. Annual average rate of inflation during the Fourth Plan period was 4.5 per cent as compared to a rate of around 10 per cent during the Third Plan period.

Table 4.4
Dhaka City Middle Class Cost of Living Index
(Base: 1973/74=100)

Period	Annual Average	
	General Index	Percentage Change
1990/91	689	8.85
1991/92	724	5.08
1992/93	734	1.38
1993/94	747	1.77
1994/95	786	5.22

Source : Bangladesh Bureau of Statistics.

4.6 Review of Two Year Plan Holiday Period (1995/96-1996/97)

4.6.1 The Fourth Five Year Plan (1990-95) ended in June 1995. The Fifth Five Year Plan would have been launched in July 1995. The government of the time could not draw up the next Five Year Plan. As a result, there was a 'Plan Holiday' for a period of two years (1995-97) between the Fourth and Fifth Plans. During the Plan Holiday period spill-over projects were implemented under the Three Year Rolling Investment Programme (TYRIP). Though

there was no Plan during these two years, they provided an opportunity to the present government to start a new Plan according to its programmes reflected in the election manifesto and to adjust the economy in 1996/97 smoothly towards a new socio-economic direction.

4.7 Domestic Resource Mobilisation in Public Sector

4.7.1 Domestic resource mobilisation in the public sector during the Plan Holiday period for financing ADPs is shown in Table 4.5. In the original development budget of 1995/96, the ADP size was Tk.121 billion, of which domestic resource was estimated at Tk.48.77 billion (40.3 per cent) and the rest Tk.72.23 billion (59.7 per cent) was expected from official development assistance (ODA). However, the revised estimate of domestic resource was only Tk.44.14 billion, which was nearly 9 per cent less than the original estimate. This was due mainly to the revenue expenditure overrun from Tk.110.7 billion to Tk.118.14 billion, which was 6.7 per cent higher than the original budget, even though revenue receipts were slightly higher than the original budget. As a result, revenue surplus declined by 15.6 per cent from Tk.43.8 billion to Tk.36.98 billion. Domestic resource shortfall was also due to higher negative impact of the food budget. Shortfall in revenue surplus was, however, somewhat compensated by an increase of Tk.4.92 billion in net capital receipts which was 106 per cent higher than the original budget estimate. Resource shortfall compelled the government to reduce the ADP size from Tk.121 billion to Tk.104.47 billion. In 1996/97, Tk.59.26 billion was expected to be generated as domestic resources, which was 47.4 per cent of the ADP size of Tk.125 billion and the rest Tk.65.74 billion was expected to come from external sources.

Table 4.5
Resource Generation in Public Sector During Plan Holiday
(at current prices)

(in billion Taka)

Sources	1995/96		1996/97	
	Budget	Revised Budget	Budget	Revised Budget
Domestic Resource (c+d+e+f+g)	48.77	44.14	59.26	57.25
a) Revenue Receipts	154.50	155.12	171.20	171.45
Tax	122.05	122.33	140.25	140.74
Non-tax	32.45	32.79	30.95	30.71
b) Revenue Expenditure	110.70	118.14	121.03	125.35
c) Revenue Surplus (a-b)	43.80	36.98	50.17	46.10
d) Net Capital Receipts	4.64	9.56	9.00	13.09
e) Self-financing by Parastatals	1.50	1.50	1.50	1.55
f) T & T Bond	4.35	3.25	1.45	1.85
g) Impact of Food Budget	(-)5.52	(-) 7.15	(-) 2.86	(-)5.34
External Resource	72.23	60.33	65.74	59.75
Total Resource	121.00	104.47	125.00	117.00
ADP	121.00	104.47	125.00	117.00

Source : Ministry of Finance.

4.8 Tax Revenue

4.8.1 Tax revenue performance during the Plan Holiday period is shown in Table 4.6. It appears from the table that an amount of Tk.122.05 billion was expected to be generated as tax revenue in 1995/96 budget. In the revised budget, tax revenue was raised a little higher to Tk.122.33 billion. In 1996/97 budget, tax revenue figured at Tk.140.25 billion which was 14.65 per cent higher than the revised budget of 1995/96. The revised budget estimate for 1996/97 was slightly higher at Tk.140.74 billion.

Table 4.6
Performance of Tax Revenues During Plan Holiday
(at current prices)

(in billion Taka)

Taxes	1995/96		1996/97	
	Budget	Revised Budget	Budget	Revised Budget
Customs Duty	39.79	38.50	44.10	42.52
Excise Duty	2.00	1.80	2.07	2.07
Value Added Tax	36.29	37.90	43.90	44.40
Supplementary Duty	16.76	17.12	19.73	21.73
Income Tax	16.35	15.83	18.50	17.35
Land Revenue	1.80	1.70	1.85	1.85
Stamps (Non-judicial)	4.50	4.77	5.03	5.27
Others	4.56	4.71	5.07	5.55
Total	122.05	122.33	140.25	140.74

Source : Ministry of Finance.

4.9 Revenue Expenditure

4.9.1 Revenue expenditure performance during the Plan Holiday period is shown in Table 4.7. In 1995/96 revised budget, revenue expenditure exceeded the budget estimate in all its components. Expenditure for general services overran by 3.5 per cent and debt services by 35.1 per cent. Budgeted revenue expenditure in 1996/97 was Tk.121.03 billion, 2.5 per cent higher than the revised estimate of 1995/96, but the revised expenditure for 1996/97 figured at 6.1 per cent above that of 1995/96.

Table 4.7
Performance of Revenue Expenditures During Plan Holiday
(at current prices)

(in billion Taka)

Services	1995/96		1996/97	
	Budget	Revised Budget	Budget	Revised Budget
General Services *	44.23	45.80	49.23	49.00
Economic Services *	13.81	14.49	14.18	14.42
Social Services *	37.22	37.60	39.95	39.54
Subsidies	2.56	2.85	3.22	4.83
Debt Services	12.88	17.40	14.45	17.56
Total	110.70	118.14	121.03	125.35

Source : Ministry of Finance.

* Includes the share of unexpected expenditure.

4.10 Implementation of Annual Development Programmes

4.10.1 The Plan Holiday period forms a part of the TYRIP (FY 96-98). The TYRIP (96-98) bears a special significance because the last year (97-98) of it will be the first year of the Fifth Plan. There were a large number of unfinished projects at the end of the Fourth Plan. The on-going programmes and projects carried over from the Fourth Plan in areas of poverty alleviation, generation of productive employment, integration of disadvantaged groups of the society including women in the mainstream of national development process, and development of human resources were included in the revised ADP for 1995/96. In addition, quite a good number of new projects and programmes were included in the ADP which were

considered necessary for overall sectoral development activities. ADP for 1996/97 estimated an expenditure of Tk. 125 billion.

4.10.2 Implementation performance of the ADPs during the Plan Holiday period is shown in Table 4.8. It shows 96 per cent utilisation of the allocated fund of 1995/96 revised ADP. ADP size of 1996/97 was Tk.125 billion which was 24.8 per cent higher than the actual ADP expenditure of 1995/96.

Table 4.8
Performance of Annual Development Programmes During Plan Holiday
(at current prices)

(in billion Taka)

Sectors	1995/96			1996/97		
	Revised	Actual Expenditure	Actual Expenditure as % of Revised	Budget	Revised	Revised as % of Budget
Agriculture	5.59	4.55	81	7.49	6.40	86
Rural Development and Institutions	7.43	6.81	92	9.75	10.26	105
Water Resources	8.51	5.63	66	10.21	10.58	104
Industries	1.72	1.47	85	1.85	1.86	101
Power	12.50	13.74	110	13.08	14.08	108
Oil, Gas and Natural Resources	4.53	4.08	90	4.80	4.86	101
Transport	11.45	10.11	88	13.80	13.94	101
Bangabandhu Bridge	10.08	9.99	99	10.60	9.38	88
Communication	3.52	2.90	82	3.93	2.25	57
Physical Planning, Water supply and Housing	5.87	4.58	78	7.58	6.80	90
Education	14.02	13.05	93	17.69	15.84	90
Sports and Culture	0.31	0.28	90	0.84	0.60	71
Health	4.17	2.76	66	6.12	5.85	96
Family Welfare	4.75	4.12	87	3.92	4.94	126
Mass Media	0.23	0.15	65	0.60	0.42	70
Social Welfare, Women and Youth Development	1.13	0.95	84	1.85	1.87	101
Public Administration	1.76	1.14	65	1.28	0.96	75
Science, Technology and Research	0.28	0.16	57	0.60	0.38	63
Labour and Manpower	0.07	0.06	86	0.20	0.09	45
Sub-total	97.92	86.53	88	116.19	111.36	96
Others	6.55	13.63	208	8.81	5.64	64
Total	104.47	100.16	96	125.00	117.00	94

Source : Ministry of Finance and IMED.

4.11 Development in Monetary Sector During Plan Holiday

4.11.1 Monetary policy was geared in co-ordination with fiscal and other policies towards maintaining macroeconomic stability and longrun economic growth alongwith the stability of the external and internal values of the national currency.

4.11.2 During 1995/96, broad money (M2) increased by 8.2 per cent to Tk.456.9 billion compared with the rise of 15.96 per cent in 1994/95 (Table 4.9). Of the components of broad money, time deposits rose by 7.6 per cent, demand deposits by 10.9 per cent, and currency outside banks by 8.5 per cent. During 1995/96, expansion of credit to the government and private sectors were Tk.16.96 billion (36.8 per cent) and Tk.50.95 billion (19.2 per cent) respectively. Credit to the private sector during 1995/96 was due to increased import demand.

On the other hand, credit to the government sector during 1995/96 was due to the expansion of government expenditure in the face of lower domestic resource mobilisation and also lower inflow of foreign resources.

4.11.3 Reserve money increased by Tk.1.99 billion (1.95 per cent) during 1995/96 as compared to the decrease of Tk.7.53 billion (6.87 per cent) during 1994/95. An analysis of the causative factors of the change in reserve money reveals that the increase in Bangladesh Bank's credit to the government sector by Tk.17.83 billion and that to the scheduled banks and other financial institutions by Tk.21.43 billion exerted expansionary influence. On the other hand, the contractionary impact of Tk.37.27 billion in net foreign assets largely neutralised the expansionary impact of these sectors.

Table 4.9
Causative Factors of Changes in Money Supply
(at current prices)

(in billion Taka)

Period	Credit to Government (Net)	Credit to Other Public Sector	Credit to Private Sector	Total Domestic Credit	Time Deposits	Net Foreign Assets	Net Other Assets	Net Domestic Assets	Money Supply (M1)	Broad Money (M2)
1	2	3	4	5	6	7	8	9	10	11
1994/95	46.14	49.07	265.65	360.86	290.33	104.63	-43.37	317.49	131.79	422.12
1995/96	63.10	54.82	316.60	434.52	312.31	67.36	-44.98	389.54	144.59	456.90
1996/97	80.17	58.75	355.05	493.97	354.61	65.45	-53.14	440.83	151.67	506.28

Source : Bangladesh Bank (Economic Trends, December, 1997).

4.11.4 Rate of inflation came down to 4.1 per cent in 1995/96 compared with 5.2 per cent in 1994/95 mainly due to lower money supply and low foodgrain prices as a result of higher production of foodgrains during the year. Inflation declined further to 3.9 per cent in 1996/97. This was due to lower foodgrain prices.

4.11.5 A comprehensive package of the financial sector reforms has been carried out in this period. Steps, including improvement in banking regulations and bank supervision, have been undertaken. A new capital adequacy requirement, based on risk-weighted measurement of bank's portfolios has been introduced. A five phase programme has been undertaken to strengthen credit discipline and bring loan classification provisioning regulation in line with the international standard. Measures have been strengthened for improved recovery of bank loans. Apart from enforcement of stricter discipline for sanction of new loans to defaulters, administrative and legal measures have been taken to improve the legal environment through amendment/enactment of laws. Steps have been taken to make the financial loan courts more effective.

4.12 Domestic Resource Projection for Fifth Plan

4.12.1 Financial outlay of the Fifth Plan amounting Tk.1,959.52 billion is proposed to be financed by Tk.1,519.76 billion in domestic resources and Tk.439.76 billion in net foreign capital inflow- both ODA and foreign direct investment (FDI). Thus about 78 per cent of Plan outlay will be financed by domestic resources. This will require relentless effort for domestic resource mobilisation. The Plan outlay, its breakdown between the public and private sectors and their broad financing sources are shown in Table 4.10.

Table 4.10
Financing of Fifth Plan Outlay
(at 1996/97 prices)

(in billion Taka)

Items	Total	Share (%)	Public	Share (%)	Private	Share (%)
Plan Size	1,959.52	100.00	858.94	100.00	1,100.58	100.00
Domestic Resource	1,519.76	77.56	527.72	61.44	992.04	90.14
External Resource	439.76	22.44	331.22	38.56	108.54	9.86

4.13 Financing of Public Sector Outlay During Fifth Plan

4.13.1 Public sector outlay during the Fifth Plan period is projected to be Tk. 858.94 billion or 44 per cent of the total outlay. Of the total public sector outlay, Tk. 527.72 billion (61.4 per cent) will be financed from domestic sources i.e., revenue surplus, capital receipts, self-financing by the parastatals, etc. Rest of the public sector outlay Tk. 331.22 billion (38.6 per cent) will be financed by ODA. Public investment for the development of physical and social infrastructure will mainly be financed through increasing revenue, particularly tax revenue. Use of foreign savings or debt for financing these outlays generates certain fundamental weaknesses which make the economy vulnerable. Recent experience of the miracle economies of East and South East Asia testifies to this apprehension.

4.13.2 Proposed financing of public sector outlay is presented in Table 4.11. The Plan projects a revenue surplus of Tk. 377.26 billion. The underlying assumptions are that total tax revenue will increase at an annual average rate of around 10.9 per cent and non-tax receipts at around 8.6 per cent while revenue expenditure will grow at an average annual rate of around 6.5 per cent. The government will make a determined effort to increase other domestic resources. The Plan, however, recognises that given the exogenous events, actual performance may deviate from that of the projected. Under such circumstances, projection will be revised based on assumption about future trend of exogenous variables.

Table 4.11
Financing of Public Sector Outlay* During Fifth Plan
(at 1996/97 prices)

(in billion Taka)

Sources	Amount
Domestic Resources (c+d)	580.87
a) Revenue Receipts	1,159.73
Tax	957.82
Non-tax	201.91
b) Revenue Expenditure	782.47
c) Revenue Surplus (a-b)	377.26
d) Other Domestic Resources	203.61
External Resources	331.22
Total Resources	912.09

* Includes transfer to private sector.

Note : Other Domestic Resources include net capital receipts, self-financing of the parastatals, net resources generated by food budget and public borrowing (net).

4.13.3 Present tax/GDP ratio in Bangladesh is one of the lowest among the developing countries. The Fifth Plan projects that tax revenue will increase from Tk.140.74 billion in 1996/97 to Tk.235.63 billion in 2001/2002 (Table 4.12). This will raise tax/GDP ratio from around 10 per cent in 1996/97 to 11.98 per cent in the terminal year of the Plan. This will still be lower than that in other neighbouring South Asian countries. Since early 1990s, there

have been some erosion and weakening of the tax base as well as tax efforts, resulting in stagnation and sometimes decline in tax/GDP ratio. A Commission will be appointed to examine the tax system and make recommendations for improvement of tax system and tax administration.

Table 4.12
Projection of Tax Revenues During Fifth Plan
(at 1996/97 prices)

(in million Taka)

Items	1996/97 (Benchmark)	1997/98	1998/99	1999/2000	2000/2001	2001/2002	Total (Fifth Plan)
Customs Duty	42520.00	47714.29	48281.29	49253.18	53614.79	58658.57	257522.12
VAT	44400.00	48095.24	63061.96	76347.80	87490.42	99705.38	374700.80
Income Tax	17350.00	18571.43	20163.57	22447.49	25128.46	28262.33	114573.28
Non-judicial Stamp	5270.00	5380.95	5436.78	5583.39	5758.80	6088.73	28248.65
Land Revenue	1850.00	1857.14	1873.17	2005.87	2170.56	2352.03	10258.77
Electricity Duty	1053.00	1121.91	1215.76	1422.34	1678.94	1991.64	7430.59
Registration Fee	1650.00	1714.29	1593.99	1732.34	1883.01	2058.03	8981.66
Motor Vehicles Tax	1300.00	1761.90	1788.81	1862.27	2085.54	2389.97	9888.49
Others	3617.00	3716.19	3701.31	4102.91	4591.58	5187.75	21299.74
Supplementary Duty	21730.00	23904.76	22874.45	23592.51	25608.29	28937.18	124917.19
Total Tax	140740.00	153838.10	169991.09	188350.10	210010.39	235631.61	957821.29

Note: Above projection is based on a conservative estimate of import growth. However, it is anticipated that the acceleration of growth during the Plan will lead to a somewhat higher level of import.

4.13.4 Adequate reform measures will be undertaken to bring about desirable changes and improvement in the tax structure and tax administration. The main objectives will be to : (a) attain a steady increase in tax/GDP ratio, (b) make major taxes elastic, (c) ensure progressivity in incidence and (d) provide incentives for income, savings, exports and production. Reform measures in tax administration will aim at strengthening its functioning in order to cope adequately with tax evasion. It will be undertaken in view of the fact that an increasing degree of tax evasion is the major factor behind inelasticity of revenue rather than the tax structure itself.

4.13.5 The Fifth Plan recognises that tax evasion is a function of complexity of the tax collection machinery and the reported corruption within the system. However, if the system is simplified, the tax level is reasonable and public accountability is instituted with enough checks and balances, the evasion is likely to decrease substantially in future. This issue will be accorded priority during the Fifth Plan. If this issue is resolved expeditiously, the amount of time spent on controlling tax evasion can be used more productively. This, in turn, will lead to higher profitability and further tax collection.

4.13.6 Technical and management capacity of the National Board of Revenue (NBR) will be improved substantially. Tax administration, both income and commodity taxation, which aims at reduced contact between tax officials and the public will develop indirect methods for determination of tax base and tax yield. These include audit, standardised production coefficients, etc. These institutional deficiencies will be addressed on an urgent basis.

4.13.7 Given the policies of export led growth, flexible exchange rate and trade liberalisation, it is expected that the importance of import-related taxes will predictably decline. To offset that, emphasis will be shifted to domestic value added tax (VAT) and income taxation. In order to increase tax revenue, emphasis will be laid on expansion of VAT

network extending it to the retail level, and broadening the income tax base. In order to make VAT system efficient, collection procedure of VAT will be simplified and evasion will be reduced and VAT administration will be strengthened. At the same time VAT collection procedure will be carefully monitored in order to control evasion and corruption. Supplementary duties will be rationalised and brought under normal tax system as a potential tax instrument so that it can address both revenue and equity concerns in tariff reforms. Both income as well as corporate tax rates will be reduced. This, in turn, will increase profitability of enterprises leading to improvement in tax discipline and subsequent larger collection.

4.13.8 In order to make the tax system more equitable, measures will be taken to increase the share of direct taxes in revenues. Collection of direct taxes will be increased through increasing tax bases and strengthening tax administration and reducing tax rates, where appropriate. Numerous exemptions that erode the base of personal income taxation will be eliminated gradually. Use of tax holiday for companies will be discouraged. The scope of wealth and capital gains tax will be extended to cover other sources of wealth and property.

4.13.9 Policies will be undertaken during the Plan period to increase the contribution of non-tax revenue. Narrow base of non-tax revenue and deficits in railway and postal departments are responsible for low contribution of non-tax sources to the total revenue receipts. To extend the base, cost recovery will be sought from rendering public services in such fields as education, health, irrigation and water-supply. The Plan projection has been made on the assumption that deficits in railway and postal departments will decline over the years and they will make positive contribution at the end of Plan period. Non-tax revenue is projected to increase at the rate of around 8.6 per cent annually from Tk.30.71 billion in 1996/97 to Tk. 46.35 billion in 2001/2002 (Table 4.13).

Table 4.13
Projection of Non-tax Revenues During Fifth Plan
(at 1996/97 prices)

(in million Taka)

Items	1996/97 (Benchmark)	1997/98	1998/99	1999/2000	2000/2001	2001/2002	Total (Fifth Plan)
Interest Income	5300.00	5238.10	4685.95	5263.36	5925.16	6386.96	27499.53
Dividend and Profit	7410.10	7756.00	7614.67	8707.76	9426.39	10211.71	43716.53
Public Financial Institutions	5245.50	5047.62	4685.95	5418.16	5771.26	5941.36	26864.35
Public Enterprises	2164.60	2708.38	2928.72	3289.60	3655.13	4270.35	16852.18
Water Charges	20.00	21.43	93.72	108.36	123.12	133.68	480.31
Ferry Receipts	100.00	114.29	62.48	61.92	61.56	59.41	359.66
Tolls	470.00	485.71	468.60	541.82	615.60	742.67	2854.40
Railway	-893.70	-609.52	-585.74	-193.51	192.38	557.00	-639.39
Postal Services	-256.00	-198.29	-78.10	38.70	76.95	111.40	-49.34
Telegraph and Telephone	6300.00	7142.86	7419.42	7740.23	8464.52	8912.03	39679.06
Disinvested Industrial Units	650.00	1304.76	2342.98	2322.07	1539.00	742.67	8251.48
Rents from Government Housing	600.00	609.52	2967.77	3096.09	3231.91	3267.75	13173.04
Passport and Visa Fee	1750.00	1714.29	1522.93	1586.75	1654.43	1671.01	8149.41
Others	9259.60	9480.29	11285.33	11726.45	12388.98	13553.67	58434.72
Total	30710.00	33059.44	37800.01	41000.00	43700.00	46349.96	201909.41

4.13.10 Non-tax revenues are going to increase significantly during the Fifth Plan because of strong policy measures to be taken by the government. These are described below, under different heads of non-tax revenue collection:

- a. A significant amount of debt service liability still remains to be paid to the government by the state owned enterprises (SOEs). Administration for recovery of loan and interest income from these SOEs will be strengthened on a priority basis.
 - b. More than 217 SOEs have been identified for disinvestment by March 1997, of which 21 have already been transferred to private owners by April 1997. Rest of them will be transferred during the Plan period. This is going to increase revenue from this head.
 - c. Administered prices of public utilities will be left free to be determined by market forces. This will increase revenue receipts of the government.
 - d. Under the public sector reform programme, several reforms have been undertaken in the administration of the SOEs, which have already started paying dividends. In the industrial sector, BMRE will be undertaken in BTMC and BJMC which will increase productivity. All these are going to increase dividends from such SOEs.
 - e. Under the financial sector reform programme the performance of the public financial institutions are being revamped which will start paying off during the Plan period.
 - f. Projects will be undertaken to increase the irrigated area by 26 per cent from 3.99 million hectare in 1996/97 to 5.04 million hectare in 2001/2002. Huge investment is being made in large scale flood control and irrigation projects of BWDB. However, the collection of water charges from these projects are far from being satisfactory. Revenue collection machinery will be strengthened so as to increase collection of water charges.
 - g. During the Plan period Bangabandhu, Bhairab and Paksey bridges will be completed, leading to collection of substantial tolls.
 - h. During the Plan period the number of telephones is projected to increase from 523,185 to 1223,185. The subscribers for internet, pager and radio trunking are going to increase from about 47,200 to 51,100. These will correspondingly increase revenues for the government.
 - i. With the pay increase for the government employees, rent receipts for use of government housing will also increase. In addition, the number of government flats is going to increase from 20,528 to 26,628 during the Plan period. As a result revenue collection under this head is going to increase.
 - j. Bangladesh Parjatan Corporation has extensive programme for promoting Bangladesh as a tourist destination of the South Asia and will encourage FDI for the development of tourism infrastructure. Income and revenue from these sources will increase during the Plan period.
 - k. Number of subscribers for gas and electricity will increase substantially. This is going to be a source of substantial revenue generation.
 - l. Charges for services in the fields of education and health will be cost-based, reducing or eliminating subsidy.
 - m. During the Plan period, receipts from exploration of gas, oil and mining of coals in terms of royalties and profits will increase.
 - n. During the Plan period the number of post offices will increase from 9,068 to 10,068. This is going to reduce deficit from postal services.
 - o. Railway has been suffering mainly due to a fall in the revenue from passengers. Revenue from freight is likely to increase as import and export pick up leading to reduction in the deficit of Bangladesh Railway.
- 4.13.11 A major goal of fiscal management during the Plan period will be to restrict the growth of revenue expenditures. Efficient governance and reduction of wasteful expenditures will be the main focus of public expenditure programmes. The award of 1997 Pay

Commission was considered in this calculation. It is estimated that the increase in pay will be accompanied by substantial rationalisation of the government workforce and considerable improvement in productivity in the government service. The government will take all necessary steps so that incentive effect of this pay increase turns to be positive and several human resource development programmes in the public sector contribute to efficiency. Projection of major components of revenue expenditures during the Plan period is shown in Table 4.14. Revenue expenditure in real terms will increase at an average annual rate of 6.5 per cent from Tk. 125.35 billion in 1996/97 to Tk. 171.34 billion in 2001/2002. The growth of revenue expenditure at this rate assumes that expenditure on public administration including law and order and defence will be kept to the indispensable minimum level. Debt services will vary between 12 to 15 per cent of the total revenue expenditure. Transfer of personnel required for maintenance and operation of completed projects to revenue budget will be rigorously scrutinised.

4.13.12 Required mobilisation of domestic resources on the scale projected will call for a strong political will to make tax administration efficient and effective. Measures will have to be undertaken for eliminating losses of SOEs, withdrawing of public investment from the loss making manufacturing SOEs, rationalising prices of goods and services produced by the public utilities, avoiding low priority investment projects and restricting public consumption. The macro policy framework will be tailored appropriately to achieve these objectives.

Table 4.14
Projection of Major Components of Revenue Expenditures During Fifth Plan
(at 1996/97 prices)

(in billion Taka)

Components	1996/97 (Benchmark)	1997/98	1998/99	1999/2000	2000/2001	2001/2002	Total (Fifth Plan)
General Services	49.17	51.56	52.53	54.63	56.82	59.09	274.63
Economic Services	13.40	14.19	14.99	15.07	15.87	16.67	76.79
Social Services	40.25	39.86	41.89	43.23	45.80	48.08	218.86
Subsidies	4.83	6.48	3.39	2.78	2.58	2.20	17.43
Debt Services	17.70	19.76	18.68	20.92	22.57	23.91	105.84
Others	-	6.67	19.75	20.61	20.50	21.39	88.92
Total	125.35	138.52	151.23	157.24	164.14	171.34	782.47

4.13.13 During the Plan period, projected domestic resource generation through increasing revenue surplus and capital receipts, containing self-financing of autonomous organisations and controlling revenue expenditures will reduce Bangladesh's dependence on external aid for its public sector development outlay from 51.1 per cent in the base year to 29.8 per cent in the terminal year. Of the total domestic resources, contribution of revenue surplus will be 47.7 per cent to ADP in the terminal year.

4.13.14 Recent trends in revised allocation of the ADPs show that self-financing by the parastatals is declining in nominal terms. The trend is likely to continue in the future. Under the macroeconomic stabilisation programme, the government has the commitment to reduce the budget deficit. To this end, one of the important issues to be addressed is the collection of debt service liability (DSL) payments from the parastatals. With the improvement in financial performance of the parastatals, they will be obliged to fulfil their debt service payment to the government. This can impose a limit on the liberty to transfer resources by themselves towards their self-financed projects. Besides, no self-financed new public projects will be

encouraged in the future. To complete the on-going projects, an amount of Tk.11.42 billion has been allocated in the Fifth Plan.

4.13.15 Food budget operations have become a major source of instability for domestic resource mobilisation. The impact of food budget, which has emerged as a large deficit since late 1980s, causes a huge drain on domestic resources. Elements of the food budget are so unpredictable and volatile in nature that no attempt can be made to estimate the net impact of food budget for a period of 5 years in future. In the near future, the scope for reducing the size of deficits substantially is very limited. On the other hand, there are reasons to believe that the deficits may increase. The projection of external resources indicates that food aid is going to decline by sizeable amount during the Fifth Plan. This will lead to increase in commercial import and domestic food procurement at higher prices. Without commensurate adjustments in ration prices, such excess expenditure is likely to increase deficits in food account. Further, since price support will be given to agriculture during the Plan period, the food procurement will increase. At the same time Food for Works and Food for Education programmes are going to be expanded. As a result, not much will be received from the food budget. Since 1991/92, the deficits, on an average, amounted to more than Tk. 3 billion per annum at current prices. In order to increase the contribution from the food budget the government will resort, in lean season, to open market sales at prices higher than procurement prices.

4.13.16 Net capital receipt, which has been positive in recent years, is expected to improve on account of increase in collection from various bonds, growth in the deposits in national savings and provident fund and better recovery of cash loans from the parastatals. During the Fifth Plan extensive efforts will be made to introduce innovative financial instruments which will be tax free. This is going to increase revenue from this head substantially. Contribution of net capital receipts to the ADP was more than 9 per cent in 1995/96 and estimated at over 11 per cent in 1996/97. Against this backdrop, it is estimated that the net capital receipts are going to make significant contribution during the Plan period. Table 4.15 presents financing of the ADPs during the Fifth Plan.

4.13.17 Given the imperfection in the financial market and superior position of the government in risk diversification, the government will undertake borrowing from the public with the objective of transferring the major part of this along with resources generated in the energy sector to the private sector. Government will institute various kinds of funds. Such funds will include Industrial and Export Development Funds through which funds will be channelised to the private sector, particularly in those thrust sectors where private investment is shy. Public sector will generate a surplus of more than Tk.50 billion for transfer to the private sector. In spite of additional borrowing, the new domestic debt to GDP ratio will be hardly 2.8 per cent in the terminal year of the Plan.

4.13.18 One of the important areas where additional resources will be generated is through pruning of unproductive projects and projects which are taking unduly long time to complete. Public accounting of investment projects with questionable quality will be instituted. Thorough public accounting of the development projects will bring in additional dividend.

4.13.19 Emphasis will be given on improving the financial position of the local governments. More revenue will be generated through broadening the base of taxes and fees. Tax administration will be strengthened further to reduce tax defaults and evasion. Tax rates will be revised and taxes will be imposed/extended in certain areas which have potentials for raising revenues at the local levels. Emphasis will be given to make Zilla, Thana and Union Parishads financially solvent to enable them to finance development activities of their own.

4.13.20 Besides financing the development outlays, elimination of poverty will continue to be one of the primary objectives of domestic resource mobilisation in the public sector. To improve the quality of and access to educational and health services, social services have received priority in the projection of expenditures. This will enhance the earning capacity of the poor and reduce direct demand on public resources. Public Foodgrain Distribution System will be adjusted adequately to favour the non-monetised channels, such as, FFW, VGD, etc. This will transfer income to the poor.

Table 4.15
Financing Annual Development Programmes During Fifth Plan
(at 1996/97 prices)

(in million Taka)

Items	1996/97 (Benchmark)	1997/98	1998/99	1999/2000	2000/2001	2001/2002	Total (Fifth Plan)
Domestic Resource	62030.0	60339.5	87794.8	108709.8	144218.8	179800.8	580863.7
Tax	140740.0	153838.1	169991.1	188350.1	210010.4	235631.6	957821.3
Non-tax	30710.0	33059.4	37800.0	41000.0	43700.0	46350.0	201909.4
Total Revenue	171450.0	186897.5	207791.1	229350.1	253710.4	281981.6	1159730.7
Revenue Expenditure	125350.0	138520.0	151227.3	157240.3	164149.6	171337.8	782475.0
Revenue Surplus	46100.0	48377.5	56563.8	72109.8	89560.8	110643.8	377255.7
Net Food Budget	-560.0	466.7	-500.0	-500.0	-500.0	-500.0	-1533.3
Self-financing	1550.0	1666.7	1950.0	2100.0	2600.0	3100.0	11416.7
Net Capital	13090.0	5400.0	6500.0	7000.0	7500.0	8000.0	34400.0
T & T Bond	1850.0	1428.6	3000.0	3500.0	3500.0	3500.0	14928.6
Biman Bond	-	-	650.0	700.0	750.0	800.0	2900.0
New Debt	-	3000.0	19631.0	23800.0	40808.0	54257.0	141496.0
External Resource	59750.0	64200.0	64181.0	66309.0	67325.0	69205.0	331220.0
Total Resources	121780.0	124539.5	151975.8	175018.8	211543.8	249005.8	912083.7
ADP	117000.0	121905.0	138534.0	167308.0	199279.0	231913.0	858939.0
Resource Surplus	**4780.0	2634.5	13441.8	7710.8	12264.8	17092.8	53144.7
As Percentage of GDP							
Tax	10.03	10.35	10.76	11.16	11.56	11.98	-
Non-tax	2.19	2.22	2.39	2.43	2.41	2.36	-
Total Revenue	12.22	12.57	13.15	13.59	13.97	14.34	-
Revenue Expenditure	8.94	9.32	9.57	9.32	9.04	8.71	-
Revenue Surplus	3.28	3.25	3.58	4.27	4.93	5.63	-
Net Food Budget	-0.04	0.03	-0.03	-0.03	-0.03	-0.03	-
Self-financing	0.11	0.11	0.12	0.12	0.14	0.16	-
Net Capital	0.94	0.36	0.41	0.41	0.41	0.41	-
T & T Bond	0.13	0.10	0.19	0.21	0.19	0.18	-
Biman Bond	-	-	0.04	0.04	0.04	0.04	-
New Debt	-	0.20	1.24	1.41	2.25	2.76	-
Total Debt	1.07	0.66	1.88	2.07	2.89	3.39	-
Other Domestic Resource	1.14	0.81	1.98	2.17	3.01	3.51	-
Domestic Resource	4.42	4.06	5.56	6.44	7.94	9.14	-
External Resource	4.26	4.32	4.06	3.93	3.71	3.52	-
Total Resources	8.68	8.38	9.62	10.37	11.65	12.66	-
ADP	8.34	8.20	8.77	9.91	10.97	11.79	-
Resource Surplus	0.34	0.18	0.85	0.46	0.68	0.87	-
As Percentage of ADP							
External Resource	51.07	52.66	46.33	39.63	33.78	29.84	-
Revenue Surplus	39.40	39.68	40.83	43.10	44.94	47.71	-

** Transfer of non-ADP FFW programme. Resource surplus in other years (1997/98-2001/2) will be transferred to the private sector.

4.14 Local Level Resource Mobilisation

4.14.1 Local level resource mobilisation will play a significant role in domestic resource mobilisation during the Fifth Plan period. So far local level resource mobilisation in Bangladesh has been very poor and could not cater to the needs of local governments towards building physical infrastructures and providing local public services. There are two sources of resource for local governments: (a) collection of taxes and non-tax revenues such as various fees and tolls, incomes from hats, bazars, sairat mahals etc. and (b) grants from the central government. Local governments e.g., Zilla Parishad, Thana Parishad and Municipalities depend heavily on the central government grants. Own revenue income of Union Parishads barely covers wages and salaries of staff and requires government grants for their development expenditures. Zilla Parishads and Municipalities, however, spend between 20 to 30 per cent of their own resources on administrative costs. Thus at the lowest strata of local governments, Thana and Union Parishads face serious resource constraint for development.

4.14.2 Presently, local governments, except Municipalities and City Corporations, rely on a very few sources for raising revenue. Zilla Parishads depend mostly on the immovable property transfer tax (IPTT). Union Parishads mainly rely on chowkidari tax. This calls for broadening the tax base in order to enable the local governments to generate more revenues. Efforts will be made to revise the existing tax rates and fees and impose/extend taxes in certain areas such as road user tax at the local level, betterment fees on land protected by embankments, entertainment fees, charges on slaughters, local tax on profession, business and trade, agriculture, etc.

4.14.3 City Corporations and Municipalities have varied sources of revenue. These organisations resort to variety of taxes and fees. They also derive a substantial income from properties. The Dhaka City Corporation earns about 40-45 per cent of revenue from this source. However, tax collections of the City Corporations are affected by tax defaults and evasions. Tax administration will be strengthened further in these local bodies. Municipalities at present rely on the government grants to the extent of 22 per cent of their income. City Corporations and Municipalities will be made more self-reliant so as to reduce their dependence on the government grants. In future, the City Corporations will float bonds for mobilising resources.

4.14.4 Local resource mobilisation during the Plan period will depend on raising of tax rates and improving tax administration and service delivery at the local level. It is necessary to recast sources of tax and non-tax revenues for the different strata of local governments. Taxes on property transfer may be shared by all local governments. Motor vehicles tax can be shared by Municipalities, Zilla Parishads and the central government. Taxes on income from auction for hats and bazars, sairat mahals and ponds below 3 acres may conveniently be shared by Union Parishad, Thana Parishad, Zilla Parishad and the central government. Proper steps will be undertaken to fix up the shares of these taxes and incomes among different local governments. Similarly, bloc allocation from the central government to the local governments will be made on the basis of a definite allocation criteria. This will ensure proper use of the fund for the development of physical and social infrastructure at the local level and provide utility services to people at the grassroot level. Political leadership will enthuse people in taking initiatives and participating in the development process at the local level. Non-monetised resources will augment resource collection from the traditional sources contributing to acceleration of the growth of the rural economy and alleviation of poverty.

4.15 Financing of Private Sector Investment

4.15.1 Private sector will play a leading role during the Fifth Plan. Private sector investment has been projected to be Tk.1,100.58 billion which is around 56 per cent of the total outlay. Performance of the private sector in the recent past has been encouraging and the projected level of private investment will be realised, provided rational fiscal, trade and monetary policies are pursued.

4.15.2 Unlike the public sector financing, private sector investment will be financed through various sources. There are thousands of small individual investors in the economy who finance most of their investment with own resources or resource borrowed from informal sources. The investors in the formal sectors finance their investment through equity, borrowing from domestic financial institutions and foreign sources. During the Fifth Plan a significant part of private investment is going to come in the form of FDI. The share of FDI is increasing gradually. Most of FDI in Bangladesh is channelled through export processing zones (EPZs). There are three EPZs in the country and more are in the offing. These EPZs are expected to make a considerable amount of investment during the next five years and beyond. For the local investors of Bangladesh, investment fund can be raised at the stock exchanges through public subscription of shares. However, stock markets are not yet highly developed. The bulk of investment will be financed by the commercial banks and specialised financial institutions. NGOs will have their own investment and fund arrangements for micro enterprises. Bangladesh Bank will continue to monitor the process of financial intermediation and ensure the flow of investible credit at reasonable cost within the framework of macroeconomic stability.

4.15.3 A major share of the planned investment in the private sector will be realised through mobilisation of domestic savings for which new institutions and instruments will be developed. Efforts will be made to save a larger proportion of the incremental income through the banking system and using new savings instruments. In order to increase deposits, competitive interest rate policy will be pursued. The short and medium-term deposits will be channelised as long term investment through appropriate time transformation. Private investment, to the extent of 20 per cent, will be financed in the form of equity and the remaining 80 per cent will be met through borrowing from the money market.

4.15.4 Development Financing Institutions like BSB, BSRS, BKB and RAKUB will be strengthened for this purpose. ICB will be strengthened for bridge financing. Underwriting of capital issues will be pursued alongwith syndication. More financial institutions like export-import bank, employment bank, insurance companies, exchange banks, commercial banks and venture capital institutions will be set up during the Plan period. More superannuation funds will be created and funded. Newer financial instruments are anticipated to attract substantial savings. Investment in selected financial instruments will be made tax free.

4.15.5 Small investors, particularly professionals, will be encouraged to set up both manufacturing and service enterprises with bank loans where possible without collateral. For this purpose credit guarantee scheme of Bangladesh Bank will be restructured and expanded in scope.

4.15.6 Micro credit will have a major thrust during the Fifth Plan in accordance with the declaration of Micro Credit Summit, 1997. However, micro credit will have a new approach during the Plan period. Both consumption and investment loans will be given together to poor borrowers intending to set up business enterprises. This will prevent diversion of investible fund to consumption. Palli Karma Shahayak Foundation will play an important role in the

management of micro credit disbursement. The role of individuals in poverty alleviation through disbursement of micro credit from their personal fund will be emphasised. Individuals with surplus resources will be encouraged to disburse micro credit to the poor people particularly to the poorest of the poor in rural areas who can use the credit for productive purposes. Following the principle of profit and loss, one may charge small percentage of profit to cover disbursement and supervision cost. This will generate substantial amount of resources. However, for this, social leaderships will have to take initiatives and set examples.

4.15.7 Public sector will provide necessary infrastructural facilities to accelerate the pace of growth of private investment besides continuation of efforts for prudent macroeconomic management. A sum of Tk.992.04 billion or around 90 per cent of total projected private investment will be generated domestically and Tk.108.54 billion will be financed from external sources. Domestic stock markets and borrowing from financial institutions will play the major role to supply funds for private investment. Remittances from Bangladeshi nationals working abroad and FDI will be encouraged and promoted to finance the projected private sector investment. Industrial policy will be further liberalised at the beginning of the Fifth Plan for achieving the target of private sector investment. Efforts will be made to encourage household savings through adoption of suitable institutions, monetary and fiscal measures including rationalising interest rate for savings deposits, expansion of insurance business, introduction of new savings and investment schemes such as mutual funds, strengthening of the existing savings institutions, capital market and financial intermediations, establishment of new savings institutions, development of secondary capital markets, extension and strengthening of micro credit organisations to mobilise savings of small rural households.

4.15.8 Gross domestic savings ratio was 8.3 per cent of GDP in 1994/95. Major fiscal and monetary reforms are under implementation to increase the savings rate. Personal and corporate savings will be encouraged by tax incentives alongwith wider institutional arrangements to enhance savings rates to a respectable two digit level during the Plan period. With declining ODA the national savings rate has to be increased to 20.14 per cent to make possible investment necessary for achieving an average annual 7 per cent growth rate of GDP in the Fifth Plan.

4.16 Monetary Management During Fifth Plan

4.16.1 In a regime where private sector plays the dominant role, money market becomes the most important source of resource mobilisation. As such, efficient monetary management will be given priority during the Fifth Plan. During the Plan period, the key objective of monetary policy will be to achieve a growth rate in monetary aggregates that is consistent with achieving the projected growth rate of GDP as well as sustaining a reasonable price stability. To meet the requirements of the economy, broad money (M2) in nominal terms has been projected to increase from Tk.506.28 billion in the 1996/97 to Tk.1,079.13 billion in the terminal year. The demand for broad money will vary over the Plan period according to the variation of the GDP growth rates as shown in Table 4.16.

4.16.2 The government has undertaken the financial sector reform programme in order to strengthen Bangladesh Bank's monitoring and supervision functions while undertaking a programme of bank restructuring, making procedural improvements and providing training in order to ensure the viability of NCBs and private commercial banks. During the Plan period, monetary management priorities will include: tightening of loan recovery procedures and updating of the legal framework, strengthening of Bangladesh Bank's overseeing capabilities

for better supervision and enforcement to improve the functioning and accountability of the NCBs and DFIs as well as the private banks. It is anticipated that such reform programme will strengthen the capability of the financial sector to finance private investment more effectively.

Table 4.16
Projection of Broad Money (M2) During Fifth Plan
(in billion Taka)

	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/2001	2001/2002
Money Supply (M2)	456.90	506.28	582.12	671.71	779.65	913.44	1079.13
Percentage Change	-	10.81	14.98	15.39	16.07	17.16	18.14

Note: 1. Years are on end June basis.

2. Income elasticity of demand for Broad Money (M2) = 1.362.

3. Growth in M2 is based on income elasticity of demand for Broad Money, implicit inflation of 5 per cent and growth of GDP.

4.16.3 Interest rate policy will play the key role in overall monetary management. Substantial progress has been achieved in the liberalisation of interest rates and making them more market-oriented. Proper interest rate policy will not only create incentive for savings, but will also channel the generated savings towards productive investment. Persistence of wide difference between deposit and lending rate has had negative impact on both savings and investment. This issue will be addressed during the Fifth Plan and further liberalisation of interest rate will be considered.

4.16.4 Maintenance of a sustainable external balance has implication for domestic resource mobilisation effort of the government. During the Fifth Plan, Bangladesh will follow an exchange rate policy which is sufficiently flexible to deal with macroeconomic environment and to maintain sustainable external balance. This will require adjustment of the exchange rate in line with the movement of the real effective exchange rate (REER) of Taka. Bangladesh is, at present, adjusting its Taka in terms of a basket of foreign currencies. Imports have been liberalised and with the exception of few items, the quantitative restrictions have been removed from all importables. The liberalised trade policy will be pursued during the Fifth Plan which will make exports more competitive and induce setting up of competitive industries. The balance of payments policy will be managed in such a way that the foreign savings is maximised which is vital for acceleration of the growth process.

4.17 Domestic Resource Mobilisation and Macroeconomic Stabilisation

4.17.1 The basic resource mobilisation strategy will be to limit the size of the budget deficits by stronger revenue initiatives and restraints on revenue expenditures. If these measures are implemented effectively, they will, in the medium term, achieve three things - first, the attainment of macroeconomic stability; second, improvement in public savings; and third, lessening of the burden of public debt.

4.17.2 Since the mid 1980s Bangladesh has been following a package of macroeconomic policies under the Structural Adjustment Programme. The basic objective of such a programme has been the attainment of macroeconomic stability. The Fifth Plan will, however, institute an efficient and dynamic macro policy regime which will play an important role in economic growth and development. Such a macro policy regime will increase savings and will channel savings into productive uses, encourage productive consumption and discourage unproductive consumption, lower inefficiency and wastage, remove bottlenecks of various kinds, eliminate growth-retarding distortions in the tax system

and other distortions in the relative prices of factors of production due to public policies, and at the same time maintain overall macroeconomic stability.

CHAPTER V
TRADE AND EXTERNAL RESOURCES

5.1 Review of Fourth Plan

5.1.1 During the first four years of the Plan, exports and remittances grew at a continued higher rate while imports grew at a slower rate fluctuating from year to year. These trends in export earnings and import payments for goods helped contain trade deficit and ultimately caused the current account deficit to decline. The trade balance and the current account balance, however, worsened in the terminal year of the Plan, largely because of the growth of imports in 1994/95. Overall balance of payments position over the Plan period is shown in Table 5.1.

Table 5.1
Balance of Payments 1990-95
(at 1989/90 prices)

Category	Projection	Actual	Achievement (%)
Import Payments	(-) 22,668	(-) 22,735	100.30
a. Goods (c.i.f.)	(-) 19,811	(-) 19,681	99.34
b. Services	(-) 2,857	(-) 3,054	106.90
Export Receipts	13,528	13,138	97.12
a. Goods (f.o.b.)	10,792	10,392	96.29
b. Services	2,736	2,746	100.37
Balance of goods & services	(-) 9,140	(-) 9,597	105.00
Remittances	4,326	4,296	99.31
Current Account Balance	(-) 4,814	(-) 5,301	110.12
Medium & Long Term debt repayments	(-) 1,343	(-) 1,140	84.88
Balance of Payments gap	(-) 6,157	(-) 6,441	104.61
Aid Inflow	8,338	7,564	90.72

5.2 Imports

5.2.1 Import of goods at 1989/90 prices grew at an annual rate of 6.14 per cent which was higher than 5.11 per cent envisaged in the Plan. Total import during the Plan period was, however, \$130 million (0.66 per cent) less than \$19,811 million projected in the Plan due to low imports during the early years. Imports started picking up after declining during the first two years of the Plan and spurred to a peak of \$ 5,051 million in the terminal year. Foodgrain imports rose sharply to \$622 million in 1994/95, as opposed to the expectation of a fall to \$100 million. Non-food imports and imports of intermediate goods grew at a lower rate of 5.4 per cent and 5.5 per cent respectively compared to 6.6 per cent and 9.8 per cent projected in the Plan. Capital goods import actually declined by 2.2 per cent against the expectation of a 1.7 per cent growth during the Plan. Import of textile goods grew at about 30 per cent in response to higher foreign demand for ready-made garments(RMG) against an average growth of 20.7 per cent as envisaged in the Plan. The commodity structure of imports in the base year (1989/90) of the Plan and that in its terminal year (1994/95) are shown in Table 5.2.

Table 5.2
Merchandise Imports During Fourth Plan Period
(at 1989/90 c. i. f. prices)

(in million US\$)

Sl. No	Commodity	Unit	1989/90 (Benchmark)		1994/95			
			Qty.	Value	Projection		Actual	
					Qty.	Value	Qty.	Value
	FOODGRAINS	mill. tons	1.523	343	0.51	100	2.567	622
1.	Rice	-do-	0.300	102	...	...	0.813	276
2.	Wheat	-do-	1.223	241	0.51	100	1.754	346
	NON-FOOD	...	...	3,407	...	4,700	...	4,429
1.	Edible oil & Oil seeds	'000' tons	294	131	570	268	548	241
2.	Crude petroleum	-do-	904	125	1,400	193	1,364	188
3.	Petroleum products	-do-	983	197	1,000	200	1,181	236
4.	Cotton & staple fibre	'000' bales	371	137	420	156	381	142
5.	Yarn	mill. lbs.	20	37	35	64	53	98
6.	Textiles	...	...	288	...	735	...	1,028
7.	Fertiliser	'000' mt.	375	74	775	153	710	140
8.	Cement	-do-	1,606	95	1,800	106	2,200	130
9.	Chemicals	...	...	87	...	150	...	158
10.	Iron & Steel	...	...	177	...	250	...	230
11.	Milk & Cream	'000' tons	63	88	80	113	22	31
12.	Sugar	-do-	91	44	100	48	147	70
13.	Spices	-do-	11	13	35	41	10	12
14.	Cocoonut oil	-do-	30	22	40	29	4	3
15.	Pharmaceutical products	...	...	28	...	40	...	30
16.	Dyeing, Tanning, etc. extracts	...	...	29	...	40	...	43
17.	Capital goods	...	...	1,296	...	1,410	...	1,160
18.	Others	...	...	539	...	704	...	489
	TOTAL	...	...	3,750	...	4,800	...	5,051

5.3 Exports

5.3.1 Total exports during the Plan period fell short of the projection by \$400 million (3.71 per cent) and amounted to \$ 10,392 million. In contrast, the average annual rate of growth of exports was a bit higher at 12.2 per cent than 11.6 per cent envisaged in the Plan as export picked up slowly during the early years. Non-traditional exports grew at a higher rate of 17.2 per cent against the Plan projection of an average annual growth of 16.0 per cent thereby offsetting the shortfall in traditional exports. Ready-made garments fell short of the target which was more than compensated by the knitwear export. Export earning by commodities may be seen in Table 5.3. It may be pointed out that the Fourth Plan experienced some healthy developments in the shares of ready-made garments and frozen food. These two items together grew at an annual rate of 16.79 per cent. However, their share declined from 72.67 per cent of non-traditional export earnings in 1989/90 to 71.28 per cent in 1994/95. Non-traditional exports thus underwent further diversification which reduced the overall risk of price fluctuations. Knitwear, leather goods and the specialised textiles added to this diversification.

Table 5.3
Merchandise Exports During Fourth Plan Period
(at 1989/90 f.o.b. prices)

(in million US\$)

Sl. No.	Commodity	Unit	1989/90		1994/95			
			(Benchmark)		Projection		Actual	
			Qty.	Value	Qty.	Value	Qty.	Value
	TRADITIONAL	...	...	501	...	487	...	443
01.	Raw jute	mill. bales	2.06	125	1.80	108	1.72	103
02.	Jute goods	'000' tons	545	337	525	325	474	294
03.	Tea	mill. kgs.	22.6	39	31	54	27	46
	NON-TRADITIONAL	...	...	1,028	...	2,163	...	2,277
01.	Leather	mill. sft.	157	179	160	182	162	184
02.	Frozen food	mill.lbs.	48	138	55	158	78	226
03.	Readymade garments	...	...	609	...	1,480	...	1,397
04.	Fertilisers	'000' tons	144	21	500	74	438	64
05.	Naphtha	-do-	59	8	50	7	28	4
06.	Furnace oil	-do-	130	11	0	0	129	10
07.	Newsprint	-do-	5	3	1.5	1	0.15	negligible
08.	Paper	-do-	0.6	1	1	2	0	0
09.	Handicrafts	...	...	5	...	8	...	5
10.	Specialised textiles & household linen	...	...	4	...	25	...	26
11.	Knitwear	...	...	15	...	155	...	237
12.	Vegetables	'000' tons	5.6	8	10	14	8	12
13.	Tobacco	-do-	0.5	1	4	2	0.1	negligible
14.	Betel leaves	-do-	0.2	negligible	2	3	1.2	2
15.	Others	...	...	25	...	52	...	110
	TOTAL :	...	...	1,529	...	2,650	...	2,720

5.4 Terms of Trade

5.4.1 The terms of trade which deteriorated by 2.6 per cent in 1989/90 improved by 2.3 per cent in 1990/91, 1.4 per cent in 1991/92, 3.5 per cent in 1992/93 and 2.7 per cent in 1993/94, largely as a consequence of a faster growth in the prices of exports in general than imports (Table 5.4). However, 8.9 per cent increase in the import price index against 6.6 per cent rise in the export price index resulted in a deterioration of 2.2 per cent in the country's terms of trade in 1994/95.

Table 5. 4
Terms of Trade During Fourth Plan Period
(1979/80 = 100)

Year	Export Price Indices	Import Price Indices	Terms of Trade
1989/90	95.6	103.0	92.8
1990/91	101.9	107.4	94.9
1991/92	100.4	104.4	96.2
1992/93	107.3	107.8	99.6
1993/94	113.3	110.8	102.3
1994/95	120.8	120.7	100.1

5.5 Private Transfers

5.5.1 Total home remittances during the Fourth Plan period amounted to \$4,296 million. This fell short by only 0.69 per cent of the target of \$4,326 million while the growth of

private transfers was 4.8 per cent against the projected 5.1 per cent. This compares with a 9.6 per cent annual growth during the Third Plan period. Main reasons for lower growth of private transfers were political unrest and administrative hurdles. Manpower export was 91.18 thousand persons during the Plan period against 40.93 thousands during the previous Plan period giving an annual rate of growth of 17.37 per cent on an average.

5.6 Foreign Aid

5.6.1 The global recession after the Gulf war, the emergence of independent states in the former Soviet Union and the donors' constraints adversely affected the availability of external assistance and caused a decline in the flow of foreign aid to Bangladesh. During the Plan period, the total aid disbursement which was also affected by implementation problems fell short of the target by 9.28 per cent and reached \$7,564 million.

Table 5.5
Disbursement of Foreign Aid 1990-95
(at 1989/90 prices)

(in million US\$)			
Category of Aid	Projection	Actual	Achievement (%)
Food	972	1,109	114.09
Commodity	2,100	1,923	91.57
Project	5,266	4,532	86.06
TOTAL	8,338	7,564	90.72

5.7 Debt Service

5.7.1 The country's debt obligation consists mainly of public sector debt which increased, in nominal terms, from \$10,609 million in 1989/90 to \$16,767 million in 1994/95. Debt service payments for public sector MLT (medium and long term) debt rose from \$302 million in 1989/90 to \$ 468 million in 1994/95, representing 13.48 per cent of export earnings in 1994/95 compared to 19.75 per cent in 1989/90.

Table 5.6
Debt Service Payments of MLT Loans 1990-95
(at current prices)

(in million US\$)			
Year	Total DSL	Exports	DSL as % of Exports
1989/90	302	1,529	19.75
1990/91	317	1,718	18.45
1991/92	337	1,994	16.90
1992/93	374	2,383	15.69
1993/94	402	2,534	15.86
1994/95	468	3,473	13.48

5.8 Balance of Payments Performances in 1995-97

5.8.1 The country's balance of payments came under strain in FY96. A steep rise in imports coupled with slower aid disbursement triggered a rundown in the country's foreign exchange reserves by the end of the fiscal year 1995/96 (\$2,039 million, equivalent to 3.6 months' import bill). The trade deficit widened by more than 27 per cent to \$2,999 million due to higher import payments rising by about 18 per cent to \$6,881 million while export receipts posted an 11.8 per cent growth to \$ 3,882 million. The current account deficit rose to \$ 1,637 million, up by \$ 572 million or 54 per cent over \$ 1,065 million in FY95. Aid disbursements declined by about 17 per cent down to \$ 1,444 million while inflow of remittances from

overseas workers levelled off at \$ 1,217 million. The strains experienced in the external balance in FY96 are likely to ease, although marginally, in FY97. An estimated faster growth of exports than imports, aided and strengthened by an expected turnaround in the flow of worker's remittances, could narrow the current account deficit to an estimated 3.4 per cent of GDP compared to 5.0 per cent in FY96.

5.8.2 During the year 1996/97, overall export receipts are expected to rise by 13.3 per cent to \$ 4,400 million while total import payments are likely to grow by 1.7 per cent to \$ 7,000 million leaving a trade deficit of \$2,600 million. The current account deficit is estimated to be limited to \$ 860 million, 47.5 per cent below the level of \$ 1,637 million a year back (1995/96), with the help of an estimated 20.7 per cent rise in private transfers.

5.8.3 Total exports are estimated to grow by 13.3 per cent to \$4,400 million in FY97 compared to a growth of 11.8 per cent in FY96. Export earnings from jute, jute goods, garments, knitwear, frozen food, and tea - the leading export items of the country, are all estimated to register higher growth during the year. Total export growth would have been even higher if it was not constrained by short supply of fertilisers, newsprint, paper and bitumen, and weak performance of the leather sector.

5.8.4 In FY 96, there was a sharp fall in aid commitments compared to the previous year. Aid commitments declined from \$ 1,612 million in FY 95 by about 20 per cent and amounted to \$ 1,284 million in FY 96; project aid commitments declined by about 12 per cent while commodity aid commitment declined by about 54 per cent in FY 96. There was also a sharp fall in the actual aid disbursement. Despite attempts to improve the rate of aid utilisation, disbursement performance continued to reflect the inherent weakness of development administration and aid modality. It is estimated that disbursement position of foreign aid may not improve appreciably in the short run.

5.8.5 The terms of trade remained more or less static in FY96 because of almost equal increases in both the export and import price indices during the year. The terms are, however, likely to decline slightly in FY97 under the combined effect of an estimated higher increase in import price index of 5.0 per cent and a lower increase in export price index of 3.5 per cent.

5.9 Fifth Five Year Plan (1997-2002)

5.9.1 The projected balance of payments for the Fifth Plan is shown in Table 5.7. It shows balance of payments gap declining from \$1.3 billion in 1996/97 to \$0.9 billion in 2001/2002.

Table 5.7
Projection of Balance of Payments During Fifth Plan
(at 1996/97 prices)

Category	1996/97 (Benchmark)	2001/02	1997-2002 (in million US\$)
Import Payments (c.i.f)	(-)7000	(-)10525	(-)45395
Export Receipts (f.o.b)	4400	7750	31300
Trade Balance	(-)2600	(-)2775	(-)14095
Invisibles(net)	(-)40	(-)65	(-)275
Inflows	712	1145	4770
Outflows	(-)752	(-)1210	(-)5045
Private Transfers	1780	2270	10350
(Of which Remittances)	(1500)	(1915)	(8705)
Current Account Balance	(-)860	(-)570	(-)4020
MLT Debt Amortisations	(-)330	(-)310	(-)1598
IMF Repurchases	(-)114	(-)34	(-)357
Balance of Payments Gap	(-)1304	(-)914	(-)5975
Disbursement of Aid	1450	1617	7745
a. Food	110	62	413
b. Commodity	161	137	761
c. Project	1179	1418	6571

5.10 Imports

5.10.1 During the Fifth Plan, the total import bill is estimated to grow at an annual rate of 8.5 per cent from \$ 7,000 million in the base year to \$10,525 million in 2001/02. The total import bill for the Plan period will be about \$45.40 billion. Given that domestic production of foodgrains will reach 25 million metric tons in 2001/02 as planned, food import bill will marginally increase to a level of \$242 million in 2001/02 to import 1.21 million tons of wheat only. A single item of import that will dominate during the period will be textiles which is projected to rise from \$1,960 million in 1996/97 to \$3,155 million in 2001/02 in order to support RMG exports. Other import items which will grow fast to meet domestic demand are edible oil and oil seeds, cotton and cotton yarn, staple fibres, fertilisers, POL, etc. Details of projected imports are shown in Table 5.8.

Table 5.8
Projection of Merchandise Imports During
Fifth Plan (at 1996/97 prices)

Commodity	Unit	(in million US\$)			
		1996 / 97(Benchmark)		2001/02	
		Quantity	Value	Quantity	Value
01. Foodgrains	million tons	1.070	220	1.21	242
(a) Rice	-do-	0.069	20	0	0
(b) Wheat	-do-	1.001	200	1.21	242
02. Edible oil	'000' tons	300	180	550	330
03. Oil seeds	-do-	140	45	275	88
04. Crude petroleum	-do-	1,200	205	1,300	222
05. POL	'000' tons	1,596	361	2,515	568
(a) Petroleum products	-do-	1,545	345	2,440	544
(b) Lubricating oil	-do-	51	16	75	24
06. Cotton	'000' bales	400	190	550	261
07. Staple fibre	-do-	75	30	150	60
08. Yarn	million lbs	95	166	200	350
09. Textiles	...	...	1,960	...	3,155
10. Fertilisers	'000' tons	750	169	1,500	338
11. Cement	-do-	2,200	165	3,000	225
12. Chemicals	...	...	165	...	250
13. Iron & steel	...	...	200	...	250
14. Milk & cream	'000' tons	25	52	30	62
15. Sugar	-do-	150	56	133	49
16. Spices	-do-	5.5	11	18	35
17. Cocoanut oil	-do-	5	5	10	10
18. Pharmaceutical products	...	...	20	...	30
19. Dyeing, Tanning etc. extracts	...	...	50	...	60
20. Capital goods	...	...	1,650	...	2,150
21. Others	...	...	1,100	...	1,790
TOTAL :	...	...	7,000	...	10,525

5.11 Exports

5.11.1 During the Fifth Plan, export earning is expected to grow at an annual rate of 12.0 per cent from \$4,400 million in 1996/97 to \$7,750 million in 2001/02. The share of non-traditional exports will rise from 90.1 per cent in 1996/97 to 92.5 per cent in 2001/02 (Table 5.9). Traditional exports are envisaged to rise by 6.1 per cent only over the Plan period from \$434 million in 1996/97 to \$585 million in 2001/02. Export of raw jute is projected to grow at an annual rate of 9.3 per cent to a level of \$162 million compared to \$104 million in 1996/97. Frozen food export is envisaged to increase to \$595 million in the terminal year from \$ 332 million in the base year reflecting an annual growth of 12.4 per cent. RMG export excluding knitwear is expected to rise from \$2,200 million in 1996/97 to \$3,850 million in 2001/02, at an annual growth rate of about 11.8 per cent. Knitwear export will increase by 17.5 per cent annually during the Plan period.

Table 5.9
Projection of Merchandise Exports During
Fifth Plan (at 1996/97 prices)

Commodity	Unit	1996/97 (Benchmark)		2001/02	
		Quantity	Value	Quantity	Value
		1	2	3	4	5	6
01. <u>Frozen Food</u>	million lbs	<u>80</u>	<u>332</u>	<u>140</u>	<u>595</u>
(a) Frozen shrimps		60	292	110	535
(b) Frozen fish		20	40	30	60
02. <u>Fish</u>	'000' tons	<u>1.3</u>	<u>7</u>	<u>4.05</u>	<u>19</u>
(a) Dried Fish		0.5	2	3.00	13
(b) Salted & dehydrated fish		0.8	5	1.05	6
03. <u>Vegetables</u>	'000' tons	20	23	30	35
04. <u>Fruits</u>	'000' tons	1.3	2	1.8	3
05. <u>Betel leaves</u>	'000' tons	1.1	1	1.6	2
06. <u>Tobacco</u>	'000' tons	2.5	3	3.0	3
07. <u>Tea</u>	million kgs	27	32	32	38
08. <u>Crude fertiliser</u>	'000' tons	0.3	Negligible	2.5	1
09. <u>Raw jute</u>	million bales	1.6	104	2.5	162
10. <u>Jute goods</u>	'000' tons	425	298	550	385
11. <u>Tortoise & turtles and crabs</u>	'000' tons	6.0	14	8.5	20
12. <u>Pharmaceuticals</u>	...	...	3	...	5.5
13. <u>Fertiliser</u>	'000' tons	<u>655</u>	<u>123</u>	<u>750</u>	<u>140</u>
(a) Urea		549	104	175	31
(b) Ammonia		106	19	575	109
14. <u>Leather</u>	million sft.	145	203	200	280
15. <u>Handicrafts</u>	...	...	6	...	8.5
16. <u>Specialised textiles and household linen</u>	...	...	<u>56</u>	...	<u>112</u>
(a) Terry towel	million dozens	5	46	10	92
(b) Specialised textiles	...	...	10	...	20
17. <u>Knitwear</u>	million dozens	29	779	65	1745
18. <u>Readymade garments</u>	million dozens	54	2200	94.5	3850
19. <u>Fishing reel</u>	...	...	15	...	30
20. <u>Electronics</u>	...	...	2	...	4.5
21. <u>Leather goods</u>	...	...	<u>30</u>	...	<u>40</u>
(a) Footwear	...	...	25	...	30
(b) Leather bags/purses	...	...	5	...	10
22. <u>Textile fabrics</u>	...	...	15	...	25
23. <u>Tents</u>	...	...	12	...	17
24. <u>Ceramic tableware</u>	...	...	15	...	20
25. <u>Golf shaft</u>	...	...	10	...	35
26. <u>Others</u>	...	...	115	...	174.5
TOTAL:	...	...	4400	...	7750

5.12 Newly Developed Non-traditional Exports

5.12.1 The government attaches top priority to increase export of newly developed non-traditional and higher value added products in order to accelerate economic growth, create jobs and increase earnings to reduce the import-export gap. Some of them are outlined as follows:

- a. Rural industry :** Currently, there are little export-oriented activities in rural Bangladesh. Garments made from hand-woven fabrics have a tremendous export potential. The emergence of Grameen Check in Bangladesh capitalises on the existence of a rural GO/NGO network in this regard. If agricultural intensification and diversification proceed apace, tropical fruits, vegetables, cut flowers and fresh water shrimp can also be produced to cater to foreign demand. There are also niche markets in which competition is less fierce and locally available craft skills could facilitate entry. Three examples of niche products suited to the mix of skills available in Bangladesh are bamboo fishing rods and fishing flies, bamboo cane, coconut fibres and straw products and handloom products. Crafting wooden boats for recreational sailing is another activity which can draw upon the large pool of boat building skills present in Bangladesh.
- b. Computer software services :** There is a significant potential of earning foreign exchange through data entry and data processing work. The data entry/data processing work may be classified into two categories, i.e., on-line processing and batch processing. The software services market is one of the most dynamic and attractive in the informatics industry. The total world market for software services accounted for around \$190 billion and is growing at an annual rate of over 15 per cent. The share of the United States in the market is about 50 per cent. The Japanese and the European markets are growing at a much faster rate than that of the United States. During the 1980s, a large number of international companies sought ways and means to make their industries more profitable by reducing labour cost. Consequently, a good number of the third world countries like China, India, the Philippines, Republic of Korea, Jamaica, etc. developed export market in data processing. It includes communication-based services that provided processing to user's site via terminals connected to the vendor's computer (on-line).
- An expanding base of personal computers in Bangladesh can provide a fertile ground for the growth of PC-based software services for exports. It requires government patronage in the form of creating service infrastructure and necessary financial and motivational incentives to attract the private enterprises to come forward in this new field of exports. If necessary, duties and responsibilities of economic and commercial wings of Bangladesh missions abroad will be redesigned to include export market development activities. Personnel of these wings will be well-trained and, if necessary, nominated from the private sector on a contract and trial basis.
- c. Export of cut flowers :** A number of flowers like heliconia, ginger lily, gerbera, etc. have a good export market. A number of decoration pot plants and ferns easily grown in Bangladesh have also high export potential. The government will extend all necessary incentives to attract the private enterprise to export cut flowers from Bangladesh to Japan, the Middle East and the European countries.
- d. Stuffed toy :** It is a labour intensive product having ample scope for development as an export item. Effective execution of a number of export orders of stuffed toys demonstrates that, if supported properly, this sector will turn out to be a prospective export item soon. The government will provide necessary assistance to promote this sector for export to the target markets in Europe and the Middle East.
- e. Jewellery :** As a traditional industry, jewellery has good prospect for growth. There are presently thousands of jewellery producing units/selling outlets in the country. These are, however, meant for meeting demands of local consumers. Organised effort in product development, design promotion and marketing initiative will surely fetch

good results for this sector in exporting to the niche markets in the Middle East. Execution of a few orders of jewellery for the Middle Eastern markets has proved highly promising. The government has already adopted some effective measures for product development of jewellery for export. Future needs are being assessed for continued support.

5.13 Trade Policy

5.13.1 Reforms: In the past decade, Bangladesh's trade regime had undergone substantial transformation with gradual unfolding of an environment conducive to export-oriented development. There has been progress in several aspects of the trade regime. Average nominal protection which was above 100 per cent in 1985 dropped to a mere 22 per cent in FY 96. The coverage of QRs (for trade reasons) was reduced from 42 per cent in 1985 to only 2 per cent of imports in 1996. The exchange rate regime has been unified and is more market-based than ever. Export incentive schemes, which were barely developed in 1985, have been streamlined and made more effective. It is also expected that policies recently introduced in fields of trade, commerce and industry will stimulate investment response and bolster up manufacturing production.

5.13.2 More specifically, trade and exchange rate liberalisation has been the cornerstone of the government's policy to promote competitive efficiency in production and achieve neutrality of incentives between production for exports and import substitutes, while gradually making trade facilitation the centrepiece of customs administration. The specific policies undertaken to achieve these goals are:

- a. liberalisation of imports through removal or significant reduction of tariff and non-tariff barriers and gearing up customs administration for speedy clearance of goods;
- b. rationalisation of the tariff structure to remove disincentives to domestic production arising from tariff anomalies; this involves lowering of duties, particularly on industrial inputs and capital machinery ; and
- c. promotion of exports through simplification of procedures for importation of duty-free inputs, introduction of export incentive schemes like special bonded warehouse scheme, back-to-back L/C scheme, duty-drawback scheme, gearing up customs administration for speedy clearance of export cargo and making foreign exchange convertible in the current account.

5.13.3 A key objective of tariff rationalisation was to create a neutral trade regime by eliminating anti-export bias resulting from high tariffs and QRs. Any residual anti-export bias will have to be compensated by other broadly applicable and well functioning mechanism that ensures duty/tax-free access to inputs used in exports. The government is committed to the reduction of tariffs as part of its liberalisation programme commensurate with reasonable protection to local industries. The Bangladesh Tariff Commission will play an important role in providing policy advice to the government based on professional analysis.

5.13.4 The rationale for using tariff values is to reduce incentive for mis-invoicing and to simplify the administrative process of valuation. The government recognises the need to eventually conform to the WTO Agreement of Custom Valuation which requires that dutiable value of imported goods should be determined on the basis of "transaction value" i.e. the price paid or payable by the importer in a particular transaction. Pre-shipment inspection (PSI) has been used on a voluntary basis as an alternative revenue-safeguard instrument against under-invoicing. Importers using off-shore PSI services have the advantage of getting

quick clearance through customs. The coverage of PSI was extended in FY95 to tariff value imports as well and improved monitoring has reduced potential abuse of the system. While compulsory PSI is an option to be considered, it must be recognised that it is not a substitute for further streamlining and strengthening of the customs administration which can only be accomplished through modernisation, computerisation and proper administrative measures.

5.13.5 Like tariff rationalisation, significant progress has been made in removing QRs to the point where a short list of sensitive items remains. Whereas almost 25 per cent of all items under 4-digit headings were subject to QRs in 1990, now only 119 items covering only 2 per cent of imports are so disposed. Of these, only 27 items are restricted for trade reasons.

5.13.6 New Policy: In tune with the prevailing world trend, the government is committed to a liberal trade policy in a market economy. Bangladesh has embarked on an export-led industrialisation strategy to take the advantage of free trade in order to achieve a faster economic growth. In bringing about a desired level of export growth, a shift of emphasis from a regulated economy to a market economy is significant. The major elements of the policy reforms to adjust to a free trade regime include, among others, (a) liberalisation of import including simplification of procedures, (b) rationalisation of the tariff structure, (c) reduction in tariff rates and quantitative restrictions, (d) pursuing a flexible exchange rate policy, (e) allowing IMF-consistent counter trade and (f) provisions of specific and transparent export promotion measures. To provide continuity and long-term direction to the trade sector, the government has decided to formulate a Five Year Trade Policy (Import and Export Policy) instead of the hitherto followed annual/biannual ones. The trade policy announced eventually is subject to annual review to adjust them with emerging requirements.

5.13.7 An accelerated development of the country's export is an over-riding need, not only for easing the growing pressure on the balance of payments, but also equally and more importantly for the growth of viable and efficient agricultural and industrial sectors for sustained economic development. This is only possible by making greater and determined efforts for increased export.

5.13.8 In this context, the government has adopted an export-led growth policy and decided to follow a long term strategy to implement the same. This long term strategy is embodied in the Export Development Strategy of the government. Within the broad framework of the Export Development Strategy, the main objectives of the export policy during the Plan period will be to:

- a. develop marketability of exportables through product diversification and quality improvements;
- b. establish backward linkages with export-oriented industry and service sectors for utilisation of more of local inputs;
- c. attract increased number of entrepreneurs for setting up export-oriented industries and encourage them through the provision of suitable incentive mechanism; and
- d. expand and consolidate existing markets and also develop new markets for Bangladeshi exportables.

5.13.9 The salient elements of the strategy to reach these objectives will be to:

- a. remove procedural and regulatory bottlenecks incompatible with the stated objectives of the Export Development Strategy;
- b. provide progressively updated policy support comparable with those of other countries to enable Bangladeshi exporters to be on a sound footing in the international market;

- c. strengthen and improve the institutional framework for providing better services to the exporters and export-oriented industries;
- d. recognise that supportive infrastructural services can play an important role to improve the exporters' capability to perform efficiently and accordingly give priority to the development of such infrastructural facilities;
- e. remove the entrepreneurial and managerial inadequacies in the context of the international competitive environment through appropriate resource development programmes;
- f. formulate and implement an export development programme to broaden and diversify the range of exportable products through backward linkages;
- g. participate in international trade fairs, both general and specialised, organise single-country exhibitions abroad and field business delegations for creating new markets and consolidating existing ones; and
- h. formulate policy for quality improvement and encourage export enterprises to adopt international standards such as ISO - 9,000 and ISO -14,000.

5.13.10 Expansion of the country's supply base is important to any export strategy. Removal of constraints to supplies and improvement in the incentive structure will enhance export performance of the country in the short to medium term. At the same time, expansion of production across the industries along with adaptation and development of products to compete in the overseas market constitutes a medium to long-term priority. The strategy thus intends to turn the drive for export-led growth into an economic movement.

5.13.11 In line with the above objectives and strategies, an incentive package has been worked out. Facility for duty free import of raw materials for export-oriented industries under bonded warehouse has been extended and more and more items are being continuously brought under flat-rate of duty-draw-back system. In addition, facilities such as cash compensatory support, market development cash assistance and duty-free import of capital machinery have been extended to the exporters. These incentives are, however, subject to continuous review with a view to rationalising and expanding their application and also making them comparable with those of the competing countries. The main incentives in this package may be summarised as follows:

a. Fiscal incentives

- i. Continuance of duty-free import of capital machinery for export-oriented industries outside Export Processing Zones;
- ii. Provision for bonded warehouse to facilitate duty-free import of raw materials for export production;
- iii. Provision for duty-drawback, if the bonded warehouse facilities are not availed of;
- iv. Provision for sale of 20 per cent of the products by the cent per cent export-oriented industries in the local market on payment of duties and taxes;
- v. Exemption to the extent of 50 per cent of income arising out of export business from income tax;
- vi. Provision for tax holidays; and
- vii. Provision for duty-free import of samples.

b. Financial incentives

- i. Provision for local currency export-credit at a concessional rate of interest within a band (present band is 8-10 per cent);

- ii. Provision for foreign currency export-credit under Export Development Fund at a concessional rate of interest (rate of interest applicable is LIBOR+1 per cent);
 - iii. Provision for back-to-back letters of credit for import of raw materials for export production on deferred payments basis;
 - iv. Retention of export earnings by the exporters in their own foreign currency accounts to the extent of 40 per cent in general cases and 7.5 per cent in lower value-added items like ready-made garments ;
 - v. Facility for use of \$25 million credit line for the markets of Commonwealth of Independent States (CIS) ;
 - vi. 25 per cent compensatory cash benefit to the producers and suppliers of fabrics and other textile products for the ultimate purposes of export in lieu of bonded warehouse and duty draw-back facilities;
 - vii. Provision for 10 per cent Market Development Assistance for export of jute yarn and twine;
 - viii. Banking facility for consignment sale and BMRE projects; and
 - ix. Export Credit Guarantee facility.
- c. General incentives**
- i. Recognition of leather industries exporting at least 80 per cent of their products as 100 per cent export oriented industries;
 - ii. Banning the export of crust leather;
 - iii. Giving facility of entrepot for export;
 - iv. Enhancing the financial limit for despatch of export samples abroad;
 - v. Provision for product and market development support under Export Promotion Fund; and
 - vi. Awarding national trophy for export performance.

5.13.12 Following establishment of the WTO, every member country is committed to liberalise the economy in such a way that there will be no artificial barrier on the way of free movement of goods and services between nations. This has, on the one hand, thrown challenges of severe competition and, on the other hand, provided opportunities to expand trade for the developing countries.

5.13.13 The objective of the multilateral trading system is to encourage and enable countries to pursue open and liberal trade policies. The Uruguay Round furthered and consolidated the process of trade liberalisation through improvements in market access and more stringent disciplines over trade measures. In addition to trade in goods, the Round has brought trade in services and trade-related aspects of intellectual rights within the purview of the WTO trading system. It recognises that countries which are at a lower stage of development, particularly the least developed countries, may have to maintain, both in trade in goods and services, reasonable protection or support. The rules, therefore, provided for special and differential treatment in the form of total exemption from, or far lesser level of obligations and longer time period between five to ten years, to accept the obligations by the least developed countries in the various agreements.

5.13.14 Globalisation and liberalisation have increased the potential for international trade to become an unprecedented engine of growth and an important mechanism for integrating countries into the global economy. Bangladesh has adopted an export-oriented growth strategy and recognises that in the effective operation of the multilateral trading system lies its vital interest. Since the middle of the last decade, Bangladesh has, therefore, been making

systematic efforts to liberalise trade by reducing tariffs and removing quantitative restrictions. Simultaneously, attention is being given to improving and strengthening the capacity of the administration to build up the regulatory framework that would ensure efficient performance of the market economy. During the Plan period, efforts will be made to make the domestic laws and regulations covering trade in goods and services as well as intellectual property rights compatible with its commitments under the Uruguay Round Agreements and new laws will be enacted where and when necessary.

5.13.15 The full benefit of globalisation and liberalisation can materialise only if countries can increase their share in the world trade. However, many developing countries, particularly the least developed countries, risk being left behind and marginalised as a result of more intense global competition in the post Uruguay Round period in the world trade and investment. Bangladesh has been taking up the issues on marginalisation in various international forums including WTO and UNCTAD. The first WTO Ministerial Conference held in Singapore has adopted the Integrated Programme of Action for the LDCs which promises joint action by multilateral organisations including the financial institutions and the developed countries to enhance the trading opportunities of the LDCs through capacity building in them and increasing access for their products in the markets of developed and developing countries. During the Fifth Plan period, Bangladesh will intensify its efforts to enhance its international competitiveness and attain a larger share of the global market for its exports through infrastructural development, capacity building, institutional and legal, economic and trade policy reforms, privatisation and more investment in social sectors for human resources development. Attempts, co-ordinated with other countries, will be made to withstand the after effects of opening trade in agricultural commodities and services to global competition and constraints imposed in relation to trade related investment measures (TRIMS) and trade related aspects of intellectual properties (TRIPS). At the regional level, efforts to enhance access to the markets of the neighbouring countries will continue through intensification of regional and sub-regional co-operation. In particular, steps will be taken for transition from the SAPTA to the SAFTA and closer co-operation with neighbouring India, Nepal and Bhutan in a sub-regional framework within the ambit of the SAARC. Further, efforts for greater integration with the Islamic countries, countries of the South East Asia and of the Asia Pacific region will be strengthened taking advantage of various regional integration schemes.

5.13.16 At the same time, proper attention will be given for the development of the infrastructure and speeding up the implementation process of the reform measures so that a real investment and export friendly environment is created within the country. Fortunately for the country, market access lobby is getting strengthened externally and macro-economic reforms are reflecting a better and more stable situation internally. An export development strategy is in place and the government's firm commitment to pursue an export-led growth policy has been reaffirmed. After the success of RMG, attention is being focused on knitwear, frozen food and leather. In these sectors, trade creating investments are being encouraged, particularly for composite textiles, finished leather, leather footwear and jackets as well as scientific culture and processing of shrimps. Some more high potential products have also been identified and brought under the crash programmes for development. More prominent among these products are leather goods, toys, cut and artificial flowers, luggage items and computer data entry and software. Other items which need attention for development include jewellery and diamond cutting, electronic products and components, mechanised poultry and dairy farming, terry towel and specialised textiles, telephone and electric cables, ceramic

kitchen and tablewares, engineering products, pharmaceutical products, packet tea and diversified jute items. In order to boost production and promote export of the crash programme items, assistance will be provided by way of product and market development and credit on easy terms, duty-drawback or bonded warehouse facility, market exploration and joint venture tie-up. Besides, more and more items will be included in the crash programme list keeping in view the export potential of those items.

5.13.17 The government has formed a National Committee for Export with the Prime Minister as the Chairperson. Besides, a Task Force and an Export Promotion Council under the Chairmanship of the Minister for Commerce are also working. Now, what is needed is the consolidation and sustaining of the momentum that has already been gained in the export sector and to sustain it over time. For this, more intense, concentrated and special efforts are required to be undertaken in the fields of product development, product diversification, market promotion and market expansion. It is necessary at this stage for both the government and the entrepreneurs to commit themselves to this task and do what is possible to materialise the avowed objectives.

5.14 Private Transfers

5.14.1 Barring any adverse international development, especially in the Middle East where the concentration of workers has taken place, it is expected that during the Fifth Plan, private unrequited transfers including worker's remittances will grow at the rate of 5 per cent per annum. The government will maintain a flexible and competitive exchange rate to encourage the flow of remittances through official rather than the informal channels and will streamline the mechanisms and encourage diversification of instruments for investment of remittances.

5.15 Official Development Assistance (ODA)

5.15.1 Commitment and disbursement of ODA in the form of project and commodity assistance are projected to remain below the benchmark throughout the Fifth Plan period. However, despite a projected decline in commitment, project aid disbursement is planned to pick up during the Plan period following an expected proportionately higher disbursement from the huge opening pipeline at the beginning of the Plan. The government policies towards turning into a private sector-led economy and privatisation of the State Owned Enterprises (SOEs) are the main reasons for the declining trend of ODA. Rigorous conditionalities of the development partners are also liable for slow utilisation of ODA. However, it must be noted that inflow of foreign capital will be sustained and encouraged through foreign direct investment. Projected foreign aid commitment and disbursement for the Fifth Plan is shown in Table 5.10.

Table 5.10
Foreign Aid Projection During Fifth Plan
(at 1996/97 prices)

(in million US\$)				
Year	Food	Commodity	Project	Total
1996/97 (Estimate)				
Fresh commitment	105	120	1200	1425
Disbursement	110	161	1179	1450
2001/2002 (Projection)				
Fresh commitment	47	43	945	1035
Disbursement	62	137	1418	1617
1997-2002 (Projection)				
Opening pipeline	117	360	4929	5406
Fresh commitment	442	541	6137	7120
Total available	559	901	11066	12526
Disbursement	413	761	6571	7745
Closing pipeline	146	140	4495	4781

Source : Economic Relations Division

5.15.2 Aid utilisation will be facilitated if the projects are formulated prior to aid negotiation. Procedures stipulated by the development partners sometimes complicate the utilisation of project aid. Therefore, conditions under project aid should be flexible enough to ensure smooth utilisation.

5.15.3 Food Aid : Bangladesh is expected to attain self-sufficiency in production of foodgrain in the Fifth Plan period. However, food aid in the form of wheat will continue as the scarcity of land will not permit increasing acreage for wheat cultivation. Food aid in recent years has become an important instrument for agricultural development, poverty alleviation, education, environment protection and gender equality. Food aid will continue to play a critical role over the Fifth Plan period for its poverty alleviation programmes. Sale proceeds of food aid will also be utilised for various agricultural, water management and rural development projects to be implemented through the Annual Development Programmes. A part of food aid will also be used for rural infrastructure development through the Rural Road Maintenance Programme, the Food for Education and the Food for Works Programmes.

5.15.4 Commodity Aid : Flow of commodity aid will slowdown in the coming years owing to various reasons like changes in development partners' aid policy, transformation into open market economy, etc. The disbursement of commodity aid is, therefore, projected to fall from \$ 161 million in 1996/97 to \$ 137 million in 2001/02. This will sharply slow down the formation of counterpart funds. Consequently, the government will have to mobilise larger domestic resources to implement infrastructure development projects, particularly in the rural areas.

5.15.5 Project Aid : A higher absorption capacity of project aid is essential for the steady growth of the economy. However, utilisation of project aid in the past suffered due to a shortfall in matching funds and other implementation problems. Slow utilisation of project aid is more or less persistent, while there is a positive improvement in the domestic resource mobilisation. Therefore, a quick utilisation of project aid in the pipeline will be given priority. Disbursement of project aid is estimated to be \$ 6,571 million which is 85 per cent of the total aid expected for the Plan period while a fresh commitment of \$6,137 million is expected during the Fifth Plan period.

5.15.6 Technical Assistance : Technical Assistance for both macro-planning and sectoral investment programme is very crucial. Flow of technical assistance can play a major role in strengthening the development process by way of transferring technology and skill. Technical

assistance should be demand-oriented rather than supply-based and it should aim at the gradual upgradation of skill-base of the recipient country. Technical assistance should be untied as far as possible and promote technical co-operation among developing countries. One of the most difficult problems associated with technical assistance is the synthesis between donor preference and the priority of the recipient country. The problems of divergent priorities, time frames, attitudes and preferences on many occasions may turn out to be of critical significance and cause delay.

5.16 External Debt

5.16.1 It is assumed that all foreign financing during the Fifth Plan, especially from ODA countries, will be concessional and the main terms of borrowing will remain broadly unchanged as in recent years. Analysis indicates that under the projected 7 per cent average GDP growth during the Plan period, Bangladesh will be able to service its external debt obligation. In addition, it is expected to contribute to a decline in the country's debt/GDP ratio. Debt sustainability will, however, be at stake should there be hardening in the terms of external borrowing as to both interest rate and term structures.

5.16.2 The debt-burden will go up in the long run as soon as the share of highly concessional loans in the total aid package begins to decline. It implies that Bangladesh must improve performance of the export sector in future to keep debt-servicing liabilities within manageable limits in terms of export and foreign exchange reserve, while satisfying current import need.

5.17 Foreign Direct Investment

5.17.1 Given the current aid scenario, Bangladesh will have to look for other sources of foreign exchange to support its current account balance as well as rising investment level as envisaged in the Plan. The most promising source of foreign exchange for the developing countries in recent years has been foreign direct investment (FDI). However, only a handful of developing countries have been able to attract foreign direct investment to any significant extent. Bangladesh has not yet been able to attract much foreign direct investment which brings additional resources - technology, management know-how and access to export markets. The government has, however, made good progress in reforming policies and programmes to encourage FDI in the country; but other constraints remain which make the flow of FDI into the country less than its potential. The government will take necessary measures to remove these constraints, e.g., shortage of power, inadequate infrastructures, low level of human resources, etc. and to promote the image of the country as a safe and profitable destination of FDI. In this regard, parliamentary democracy and political stability of the country are the important elements which need to be realised and provided by both the party in power and the parties in opposition.

5.17.2 The benefits accruable from FDIs are inclusive of (a) transfer of technology to individual firms and technological spill-over to the wider economy, (b) increased productive efficiency due to competition from multinational subsidiaries, (c) improvement in the quality of the factors of production including management in other firms, not just the host firm, (d) benefits to the balance of payments through inflow of investment funds, (e) increase in exports, (f) increase in savings and investment and (g) faster growth and employment. The possible negative effects may be enumerated in terms of (a) negative effects on balance of payments owing to increase in the import of inputs and payments of dividends and royalties abroad, (b) distortion in competitive environment because of large size of multinationals, (c) discouragement of home-spun technical know-how, (d) relatively more capital intensiveness of investment and (e) financial and currency speculation. Weighed simultaneously, it is apparent that FDI promises more than it delivers. In the process, the need for selectivity and

strategic approach to FDI in the context of a well-charted national policy to encourage socio-economic development and technological change comes under focus. In this context, it may be noted as well that a conscious development orientation framework does not necessarily limit FDI.

5.17.3 Bangladesh Export Processing Zones Authority (BEPZA): It was established in 1980 with a view to improving the environment of private foreign investment for export. At present, in two EPZs, namely, Chittagong EPZ and Dhaka EPZ, 73 and 23 industries are in operation and, 34 and 46 industrial units are under implementation in CEPZ and DEPZ respectively. In the operational units of Chittagong and Dhaka EPZs, total investment, export and employment are \$ 180 million, \$1,120 million and 31,724 persons and \$56.56 million, \$179 million and 14,783 persons respectively.

5.17.4 During the Plan period, it is expected that the existing and the projected EPZs will be fully operational and their targets for investment, employment and exports will be as follows:

EPZ	Number of Industries	Investment (in million US\$)	Employment (persons)	Export (Yearly) (in million US\$)
1. Chittagong	110	350	50,000	600
2. Dhaka	90	300	40,000	500
3. Comilla	150	400	60,000	700
4. Mongla	100	300	40,000	500
5. Ishurdi	90	300	40,000	700

Thus, at the end of the Fifth Plan period, 540 industrial units with a total investment of \$1,650 million and employment of 230,000 persons are expected to be set up. The yearly export after the Plan period is expected to be \$ 3 billion. In addition, another exclusive EPZ at Chittagong is being developed by the Korean investors. The government will also allow the private sector to establish their own EPZs as it has done in case of the Koreans.

5.18 Capital Market Development

5.18.1 Systematic development of capital market in Bangladesh has become indispensable to broaden the scope for domestic resource mobilisation raising the low savings and investment rates and attracting portfolio investment from abroad .

5.18.2 Measures will be designed to improve domestic resource mobilisation and attracting portfolio investment from abroad by expanding the market capacity to raise debt and equity capital, increase the current limited resources available through the banking system and enhance the efficiency of the market by strengthening and modernising the market infrastructure. This will manifest in steps aimed at (i) facilitating market access for security issues to increase the limited supply of securities in the market; (ii) developing institutional sources of medium to long-term funds to raise demand for securities; (iii) reinforcing market regulation and supervision; (iv) strengthening the market infrastructure and modernising the support infrastructure; and (v) improving policy co-ordination.

5.19 Foreign Exchange Reserves

5.19.1 An economy maintains a certain level of foreign exchange reserves primarily to bridge the gap between foreign exchange receipts and payments. While foreign exchange reserves are used to earn interest income, keeping reserves means tying up valuable resources alternative which have more productive uses. These resources can be used to import intermediate or capital goods which will expand production and employment, given fiscal and monetary incentives. Keeping these in mind, Bangladesh will maintain foreign exchange

reserves equivalent to 4-6 months' imports through a combination of fiscal, monetary and exchange policies.

5.19.2 The balance of payments position as projected over the Fifth Plan period shows a net surplus of \$1,770 million in reserve in the country's external account. This amount will add to the country's foreign exchange reserve which by 2002 will figure at \$ 3,489 million. This is equivalent to about four months' import bill of that year. This projection of external account does not, however, include the foreign direct investment (FDI) which is very likely to flow in by a substantial amount (the estimate is \$ 3.6 billion for the entire Plan period). If this amount is realised, the foreign exchange reserve will figure at \$6.2 billion after allowing for outflow of a part of it in short-term account. The net gain from FDIs will be about half of the gross inflow. Total reserve will be expected to be equivalent to seven months' import bill by 2001/02. Foreign exchange position will thus emerge at a quite comfortable level.

5.20 Exchange Rate Policy

5.20.1 Bangladesh is pursuing a managed flexible exchange rate system. The nominal exchange rate is maintained at a level which is consistent with keeping the real effective exchange rate (REER) stable or slightly depreciating over time on the basis of estimated REER indices using trade weights of a 15-country currency basket. Taka was devalued in relation to US Dollar seven times between July, 1996 and the 6th April, 1997. However, these reduced the exchange rate by Tk. 1.90 altogether.

5.20.2 An analysis of the exchange rate behaviour and export performance does not, however, support the hypothesis that a strong correlation existed between the exchange rate of taka and Bangladesh's export performance. Bangladesh's export demand is highly sensitive to the income growth and trade policy of its trading partners and remains relatively insensitive to price changes. Bangladesh's export growth is determined more by the volume of world trade and exchange rate volatility than by changes in domestic and foreign export prices. It will be noted that when devaluation is accompanied by trade liberalisation and exports have a high import content, then devaluation will in fact lead to inflation leading to ultimate appreciation of the exchange rate. In such circumstances, management of inflation along with improved productivity rather than devaluation may be an appropriate instrument to enhance Bangladesh's competitive strength. The real effective exchange rate will be maintained at a stable level to influence choices not only between tradables of Bangladesh vis-a-vis its trading partners but also between tradables and non-tradables within Bangladesh. The real effective exchange rate will be closely monitored by the Bangladesh Bank.

5.21 Southeast Asian Currency Crisis

5.21.1 The Asian economic crisis began in Thailand where the economy had become overheated in 1995 and 1996. The current account deficit widened rapidly and there was an increase in short-term overseas borrowing in dollars. This borrowing, which was largely unhedged, was facilitated through an offshore banking facility. The baht, which had been linked closely to the US dollar for over a decade, became overvalued. This hurt international competitiveness and was exacerbated by the appreciation of the US dollar against the yen and other currencies. The effect of these factors was not immediately apparent. Thailand's exports were very strong in 1995 and there was very little inflationary pressure. However, export growth fell very dramatically in 1996. While the collapse in export growth was partially offset by a commensurate fall in imports, slower export growth combined with the rapid growth in external debt was enough to spook investors and to attract currency speculation. Combined with over-leveraged equity and property markets, and a weak financial sector having many bad loans in its books, the economy was unable to easily withstand the pressure on the

currency. There was an attack on the currency by various international fund managers accompanied by domestic players in bringing about further capital flight. The central bank defence was unsuccessful. Reserves were run down and eventually the country was forced to devalue in mid 1997. A crisis in the banking sector ensued as a result of the bursting financial bubble and a falling exchange rate. Bad loans surfaced and interest rates were raised to keep the exchange rate from falling further. Eventually, the government went to the IMF for the rescue and received a large package of financial assistance and advice, particularly for restructuring the ailing financial system.

5.21.2 The financial distress spread rapidly to the other Southeast Asian economies. The boom mentality in Southeast Asia had led to over enthusiastic investment and over-leveraging in property and real state markets. Stocks were used to collateralise further borrowing in all countries, particularly so in Malaysia. Furthermore, Indonesia and the Philippines also suffered from being lumped into the same group as Thailand by the foreign investors. It was true that they had similar problems to that of Thailand but initially they were of a lower order of magnitude. There were large current account deficits in case of Malaysia and to a lesser extent in Indonesia and the Philippines. However, the size of the increase in external short term debt was not nearly as rapid as it was in Thailand, or was the collapse in exports as dramatic. On the contrary, the Philippines had sustained rapid growth in 1996 which the other countries did not achieve. But these subtle differences did not seem to matter to foreign investors, who were joined by domestic market participants as the herd instinct to move out of these emerging markets and into a safe abode of dollar based assets gained strength. The macroeconomic fallout in Indonesia, Malaysia and the Philippines has been similar in broad summary to that of Thailand - currency depreciation, financial difficulties because of bad loans, collapse of the stock market and of the property market bubble. However, the extent and severity of macroeconomic problems vary widely.

5.21.3 The Southeast Asian currency crisis warrants us to be cautious in our approach towards convertibility of currency and flexibility of exchange rate. In addition, coupled with the recent South Korean experience, this episode calls for going deep into macro-economic fundamentals so that stylised interpretation does not bypass the actual situational context.

5.22 South Asian Development Triangle

5.22.1 Large scale of production with less unit cost will lead to large markets. So, it is a better proposition to create a large common market, wherever it is possible, instead of remaining closeted in a separate national market. The question of size of a country is immaterial as to the benefits of the individual country out of such regional co-operation. In the European Union, a large country like Germany with a population of over 80 million and a small country like Luxembourg with a population of less than a million are members deriving benefits without economic discrimination.

5.22.2 Trade and investment will benefit big and small countries alike. Economic co-operation through unhindered trade and investment, in particular free flow of goods and services through each other's territories involving a group of adjoining countries or segments thereof - is considered to be a big passage, if not the main gateway, to economic growth. However, the passage to such trade and investment cannot be opened unless the economic grouping among the neighbouring countries is initiated and constituted.

5.22.3 Now the South East Asian countries are in a move to set up growth triangles to promote trade and investment, particularly in areas which are lagging behind. For example, northern Thailand, north-eastern Myanmar, Laos and Yunnan Province of China are being linked together to form such a co-operation. Countries or provinces thereof along Mekong

river have started to implement common river basin development projects and have decided to promote a growth quadrangle. Similarly, there are plans to form such a trade and investment co-operation covering Mindanao province of the Philippines, Sabah and Sarawak provinces of Malaysia and parts of Indonesian island of Sumatra. Furthermore, the North American Free Trade Area (NAFTA) also aspires to achieve the same purpose of trade and investment growth among Canada, Mexico and the United States.

5.22.4 South Asia Development Triangle encompassing Bangladesh, Bhutan, Nepal and eastern and the north-eastern parts of India may follow the trends which have already been well developed elsewhere in the world. Bangladesh being the only partner and having access to the seaports, its gains are likely to be much more than the others.

5.22.5 The proposed growth quadrangle aims at creating an enabling environment for rapid economic development through identification and implementation of specific projects for co-operation in the core economic sectors. The sectors are multi-modal transportation, communication, energy, trade and investment facilities/promotion, tourism and optimal and sustainable utilisation of natural resources.

5.22.6 These projects will serve as 'building blocks' for sub-regional co-operation which will accelerate regional co-operation. These should be supportive of and complementary to national plans of the countries in the growth quadrangle and result in tangible benefits to the people of the sub-region in poverty eradication, employment and income generation, social welfare and improvement in the quality of life.

5.22.7 Development of a deep sea port around Chittagong will facilitate handling of export/import cargo of Bhutan, Nepal and eastern and north-eastern parts of India. It will create a good number of new jobs along with substantial foreign exchange earnings for the nation as port handling charges.

5.23 Border Trade Arrangement

5.23.1 Border Trade Arrangement helps formalise informal trade and thereby generate revenue for the government. The traders are also benefited from the relaxed travel restrictions and simplified trust housed transactions outside the procedures of L/Cs. In early 1996, Bangladesh and Myanmar established a border trade arrangement in the Teknaf side of Bangladesh and the Maungdu side of Myanmar. This arrangement, if appropriately nurtured, will benefit both the economies. Similar arrangements may be considered with other neighbouring countries as well.

CHAPTER VI

PRIVATE SECTOR

6.1 Introduction

6.1.1 There is now a growing realisation that a vibrant and dynamic private sector is the key to economic progress and sustained growth. The East Asian miracle exemplifies as to how the government can accelerate progress as a partner and as a facilitator. Developing countries, including Bangladesh, have come to increasingly rely on market forces to guide their development strategy. Efforts are being focused on the promotion and supporting of the private sector and creation of an enabling environment for it to flourish and maximise its contribution to economic progress within a business friendly and equitable framework. Bangladesh has been increasingly relying on this philosophy as a strategy for growth. As a consequence of this, the share of the private sector in total investment has risen. Public sector reforms will continue to be undertaken as a complement to the private sector so that it can function more effectively and upto its potential.

6.1.2 Stable political climate, continuity of policy and conducive social environment being essential ingredients for development, it will be the endeavour of the government to enlist social and political support for replicating concerns in the policies being formulated. There will be a continuous dialogue between the government and the business community as well as those associated with the process of development to identify the impediments that hampered the way of proper and fuller participation of the private sector. Issues such as those relating to simplification of procedures for credit, import and export, labour, infrastructure, energy etc. will be reviewed regularly and where necessary, policy re-adjustments will be made or appropriate decisions taken. While it will be the responsibility of the government to undertake supportive measures and develop infrastructure facilities such as that relating to communication, energy etc. which influence business decisions, the private sector will be encouraged to venture into such fields which hitherto have been the realm of the public sector.

6.2 Past Performance

6.2.1 Bangladesh inherited a mixed economic system at the time of liberation. But the economy was in shambles as a result of displacement of people, destruction of physical infrastructures and disruption and abandonment of industries. As a natural consequence as well as on account of the government policy, the public sector acquired a commanding role. The Government of Bangladesh nationalised various industries, business enterprises, banks and financial institutions exceeding Tk. 15 million in assets in order to reactivate the economy. The nationalisation policy covered a total of 725 industrial units under the management of 10 newly created public sector corporations. But owing to the growing pressure from such nationalised units on the financial and management resources of the public sector, 155 small enterprises earlier taken over by the government were gradually disinvested with the objective of fostering industrial growth and lessening the government's burden. The policy of disinvestment initiated the process of gradual expansion of the private sector. As cost continued to escalate, the ceiling on the private investment was raised gradually from Tk. 2.50 million under the first industrial policy of 1973 to Tk. 30 million in 1974. It was further raised to Tk. 100 million in 1975 and totally withdrawn in 1978. The government has been implementing structural adjustment and liberalisation policies since the

1980s, which enhanced the role of the private sector and created an environment conducive to its accelerated growth.

6.2.2 The growing emphasis on the private sector is reflected in the fact that the share of the private sector investment increased from 11 per cent in the First Plan to 44 per cent in the Fourth Plan (Table 6.1). The performance of the private sector was better than what was planned for in the Fourth Plan. In fact, the share of the private sector in the total realised investment was 54 per cent of the total investment in FY95.

Table 6.1
Projected and Realised Private Investment During Past Plans

(in million Taka)

Plan	Projected Investment (at base year prices)	Percentage of total Plan Outlay	Realised Investment		Realised Annual Average Investment (at 1996/97 prices)
			at base year prices	at 1996/97 prices	
1	2	3	4	5	6
First Plan (1973-78)	5,030	11	4,390	56,114	11,223
Two Year Plan (1978-80)	6,000	16	9,570	38,697	19,348
Second Plan (1980-85)	61,000	35	49,690	160,209	32,042
Third Plan (1985-90)	136,000	35	98,820	191,997	38,399
Fourth Plan (1990-95)	273,000	44	324,397	410,226	82,045
Plan Holiday Period (1995-97)	291,600	57	291,600	295,600	147,800

Note : Realised investment based on investment deflators of BBS.

6.2.3 The investment rate of the private sector in FY91 was 5.82 per cent of GDP which rose to 10.71 per cent in FY96. On the other hand, the investment rate of the public sector rose from 5.65 per cent of GDP in FY91 to 6.29 per cent only in FY96. During FY97, the investment rates of the private and public sectors were 10.86 per cent and 6.52 per cent respectively. The estimate of private saving rate in FY94 was 11.70 per cent which increased to 12.30 per cent in FY95. This rate declined in FY96 though it remained above 11 per cent. This was partly due to the large interest rate spread between advances and deposits with inflationary expectation continuing low. While total private investment has grown in recent years, its performance in different sectors has been rather mixed (Table 6.2.).

Table 6.2
Realised Private Investment During Fourth Plan Period
(at 1989/90 prices)

(in million Taka)

Sector/ Year	1989/90 (Benchmark)	1990/91	1991/92	1992/93	1993/94	1994/95	Average Annual Compound Growth Rate
Agriculture	6,500	3,902	6,630	7,131	81,31	8,887	6.46
Manufacturing	4,500	14,035	17,188	19,792	19,915	28,092	44.24
Housing and Construction	7,000	6,299	7,252	9,196	10,873	15,897	17.83
Transport and Communication	5,300	5,131	5,203	5,653	5,846	10,451	14.55
Trade and Other Services	7,000	15,818	17,049	22,035	23,452	30,539	34.26
Total	30,300	45,185	53,322	63,807	68,217	93,866	25.38

Source: BBS

6.2.4 The private investment in agriculture has grown at a rate of 6.46 per cent per annum during the Fourth Plan. Agriculture has always been dominated by the private sector as farms are operated and managed by private individuals. The public sector in agriculture is responsible for the creation of infrastructure for gravity flow irrigation, barrages, etc. On the

other hand, the private sector has been involved in land development and small irrigation facilities. The distribution and sale of agricultural inputs like fertiliser, irrigation equipment, seeds, pesticides, etc., is also being handled by the private sector. The growth of livestock, fisheries and forestry has been faster than the growth of the crop sub-sector. These sub-sectors have grown at rates between 4 to 9 per cent annually during the 1990s while the highest growth rate achieved in recent years in crop sub-sector has been around 2 per cent in FY96. The growth of these sub-sectors has been largely possible due to the dynamism of the small entrepreneurs of the private sector involved in non-crop activities.

6.2.5 The private sector activities in manufacturing have been expanding rapidly and there has been perceptible diversification involving the emergence of ready-made garments industries. During the Fourth Plan, private investment in the manufacturing sector grew at an annual average rate of 44.24 per cent leading to an increase in the share of the sector. The emergence of RMG is a very significant phenomenon in the development of the manufacturing sector and has been made possible primarily by the dynamism of private entrepreneurs. As a result of the growing private sector involvement, the growth of the manufacturing sector has picked up in recent years. The annual growth of manufacturing during FY90 and FY97 has been in the range of 7 to 9 per cent.

6.2.6 The growth of services sector has been high in recent years. This sector now contributes more than half of Bangladesh's GDP. Because of the ongoing liberalisation policy, including the privatisation policy of the government, activities covering transport, trade, housing, health, education, banking and insurance and professional services are increasingly being managed by the private entrepreneurs. Private investment in trade and other services grew at an annual average rate of 34.26 per cent, while total investment in the private sector grew at a rate of around 25 per cent during this period. The public sector involvement continues to be there but at the same time the role of the private sector has accelerated and privatisation of the service sector is encouraging.

6.3 Review of Reforms

6.3.1 In pursuance of the government objective of developing a market economy with the private sector as the key player, several structural adjustment policies have been undertaken. These include reforms in fiscal and monetary management, banking, trade policy, privatisation, etc.

6.3.2 Macro policy reforms: Experiences of developing countries show that the performance of the private sector is significantly dependent on macro economic stability. Prudent fiscal and monetary management is an essential instrument for bringing about this change. Since the late 1980s, efforts have been made to improve the content and effectiveness of both these macro policies.

6.3.3 The main features of the fiscal policy during the last few years have been the, (a) containment of current expenditure and (b) earning of more revenues through rational tax measures. Major tax reforms included expansion of coverage of income tax and VAT instead of customs and sales tax. The tax/GDP ratio increased from 7.90 per cent in FY91 to 9.40 per cent in FY96 while current expenditure to GDP ratio remained almost constant (Table 6.3). The overall budget deficit to GDP ratio has declined during this period minimising the impact of fiscal operations on inflation. In fact, the inflation rate came down from 9.33 per cent in FY90 and 8.85 per cent in FY91 to 5.22 per cent and 4.07 per cent in FY95 and FY96, respectively.

Table 6.3
Fiscal Indicators FY 90-96

(as per cent of GDP)

	FY90	FY91	FY92	FY93	FY94	FY95	FY96
Total Revenue	9.30	9.59	10.84	11.91	12.04	12.08	12.00
Tax Revenue	7.80	7.90	8.73	9.67	9.45	9.71	9.40
Non-tax Revenue	1.50	1.69	2.11	2.24	2.59	2.37	2.60
Total Expenditure	15.20	14.98	15.25	15.98	17.72	17.62	16.80
Current Expenditure	8.80	8.66	8.60	9.07	9.00	8.82	9.10
ADP Expenditure	6.40	6.32	6.65	6.91	8.72	8.80	7.70
Revenue Surplus	0.50	1.10	2.10	2.80	3.00	3.90	2.90
Overall Budget Deficit*	7.90	7.20	5.90	5.90	6.00	6.80	4.80
Net Foreign Financing	6.60	6.20	4.90	5.60	4.90	4.90	4.10
Net Domestic Financing	1.30	1.00	1.00	0.30	1.10	1.90	2.10
Inflation Rate (% change in CPI)	9.33	8.85	5.07	1.38	1.77	5.22	4.07

Source: Ministries of Finance and Planning and World Bank.

* Fiscal deficits are higher than the difference between total revenue and total expenditure due to inclusion of expenditure items like non-ADP projects, FFW, miscellaneous investment (non-development), net loans and advances and food deficits.

6.3.4 The monetary policy has also been used prudently and money supply has been kept within targeted limits. Partly as a result, prices have been more or less stable during the last few years. However, supply of credit has fluctuated over the period. Generally, the interaction between monetary and fiscal policies was meaningful and mutually supportive.

6.3.5 Financial sector reform programme (FSRP) : A sound financial system is crucial for the functioning of a dynamic private sector and with this end in view, the FSRP was initiated in 1990. The objective of the programme was to create an environment in which banks and financial institutions could operate within the frame-work of relevant rules, regulations and guidelines. Bangladesh Bank, as the Central Bank of the country, monitored the observance of such rules in order to ensure monetary stability. The banks and financial institutions now function on a flexible system wherein interest rates are set on the basis of economic indicators in consultation with the Bangladesh Bank. A new system for loan classification and provisions for risks has been introduced in line with international standards from January, 1995. Recently, a bankruptcy law has been enacted to deal with the problem of recovery of overdue loans and to bring back discipline in the banking sector. Such steps are expected to increase the volume of bank finance as well as to ensure greater efficiency in the allocation of bank resources to the private sector, particularly for increasing export.

6.3.6 Trade policy reforms: Trade is an engine of rapid growth and development. Liberal trade policy, in fact, has been a major feature of development strategy of the high performing economies of the East Asia. Until recently, the trade policy in Bangladesh has been characterised by import restrictions, insufficient export incentives and wide array of regulations constricting private investment. Both tariff and non-tariff barriers contributed to the high effective rate of protection of the domestic industries and created an anti-export bias in the system.

6.3.7 In the course of past decade, Bangladesh's trade regime has undergone substantial transformation. The government has been steadily liberalising the foreign trade regime by

reducing direct controls and tariffs. The custom duty has largely been rationalised and duty on import of capital machinery for export-oriented industries has been withdrawn to make such industries more competitive. The average nominal tariff rate which was 89 per cent in FY91 has been reduced to 22 per cent in FY96, the highest rate having been brought down to 42.5 per cent in FY98 budget. The protection levels in Bangladesh have been lowered making it among the lowest in South Asia. According to an estimate made by NBR, the nominal protection has come down significantly during the post-reforms period (Table 6.4). As a result of reforms, difference between the lowest and highest nominal protection rates, reflected in coefficients of variation (CV), has declined in the case of agriculture. Even though the CV have not declined in other sectors, steps are being taken to bring them down. The policy of the government will be to simplify the tariff schedule and discourage tariff concessions based on end-use. Other reforms have steadily dismantled a complicated structure of import controls. At the same time to protect the domestic industries from unfair foreign competition the Tariff Commission has been empowered to investigate and initiate anti-dumping and countervailing action.

Table 6.4
Trends in Nominal Protection 1990/91 to 1995/96
(percentage of assessed value)

	Agriculture	Mining	Manufactures	All Tradables
Pre-reform, 1990/91				
Unweighted	90.5	54.1	89.0	88.6
Import-weighted	20.9	24.0	51.8	42.1
Dispersion (CV)	63.3	51.7	58.6	59.0
Post Reform, 1995/96				
Unweighted	26.0	13.6	24.6	24.6
Import-weighted	10.1	38.8	21.9	21.0
Dispersion(CV)	56.7	82.2	73.5	72.7

Source : NBR.

- a. Import-weighted nominal protection rates for 1990/91 are weighted by import data for the corresponding year; for 1995/96 they are weighted by 1994/95 imports.
- b. CV is the coefficient of variation for the unweighted average.

6.3.8 There has been a significant progress on the reduction of quantitative restrictions (Table 6.5). Existing restrictions will be reviewed and where necessary reduced.

Table 6.5
Phased Removal of Quantitative Restrictions

Fiscal Year	Total No. of Commodities	Trade Reasons			Non-trade Reasons
		No. of Banned Commodities	No. of Restricted Commodities	No. of Partly Banned and Partly Restricted Commodities	No. of Banned Commodities
1989/90	315	135	66	52	62
1990/91	239	93	47	39	60
1995/97	115	5	6	12	92

Source: Ministry of Commerce.

6.3.9 As a result of reforms, the effective rates of protection has decreased (as estimated by NBR) for most industries. However, analysis of the observed effective rates of protection shows that even though the level of protection has declined, the anti export bias in the incentive system has not yet been completely eliminated. The impressive growth of exports from Bangladesh has largely been due to factors such as liberalisation of the economy, supply

of inputs at world prices, GSP facilities and simpler administrative requirements and credit supports.

6.3.10 International comparison of trade policy reforms shows that Bangladesh has been quite successful in implementing these reforms. Bangladesh brought down its maximum tariff from 509 per cent in 1990 to 50 per cent in 1995. During the same period, India brought its maximum tariff from 400 per cent to 50 per cent. In 1994, the maximum tariff rates in Nepal and Pakistan were 100 per cent and 70 per cent respectively.

6.3.11 A competitive real exchange rate is essential to achieve the desired structural change which will ensure greater share of exports to GDP. As such, the government along with the policy of import liberalisation is following a flexible exchange rate policy in order to make exports more competitive. It may be recalled however, that in the early 1990s, a substantial reduction of external deficit was achieved without significant real devaluation of Taka although the real effective exchange rate computed by the IMF showed a secular depreciation in its value since the beginning of the 1990s (Table 6.6). The real effective exchange rate fell during the period while in nominal terms the official exchange rate continued to increase.

Table 6.6
Indices of Real Effective Exchange Rates and Official Exchange Rates
(base 1980=100)

Year	1989	1990	1991	1992	1993	1994	1995
REER	95.47	88.78	86.96	82.12	82.10	78.53	75.10
OER	207.49	212.52	230.34	246.29	252.68	258.23	259.52

Source : World Bank and Bangladesh Bank.

Note : REER = Real Effective Exchange Rate; OER = Official Exchange Rate.

6.3.12 Besides a flexible exchange rate policy, functional convertibility of Taka has also been made operational to enhance competitiveness of the economy. This is evident from the rising share of export to GDP. The export / GDP ratio has gone up from 8.33 per cent in FY90 to 14.16 per cent in FY95 and to 15.21 per cent in FY97.

6.3.13 Privatisation: The policy of privatisation, if properly conceived and implemented, can ensure substantial benefits including higher productivity, growth of output and employment, besides, lesser stress on governmental resources. Such a policy also enables the government to focus more on policy making to create an enabling environment. Because of such gains, privatisation has been on the rise all over the world. According to a World Bank estimate, more than 8500 SOEs have been privatised in over 80 countries during the last 12 years. The Bangladesh Government is committed to the process of privatisation, and with this end in view, the Privatisation Board was established in March, 1993. The major functions of the Privatisation Board are- formulation and implementation of a privatisation policy, sale of identified SOEs with a view to reducing the burden and drainage of government resources and to ensure timely recovery of sale prices. Since 1993, a number of SOEs identified for sale/disinvestment stood at 217 of which 21 were transferred to the private owners by April 1997. Privatisation efforts, however, have been hampered as purchasers have defaulted in the payment of instalments/ dues.

6.4 Deregulation of Private Investment and Provision of Incentives

6.4.1 In tune with the spirit of deregulation, the last vestige of "investment sanctioning" has been abolished in Bangladesh and the Board of Investment (BOI) has been re-organised to

function under a fresh mandate emphasising its role in promotion and facilitation rather than regulation.

6.4.2 Most of the restrictions and barriers to private investment including foreign investment have been removed. Even registration of investment units by the BOI has been made optional.

6.4.3 The government facilitates the growth of an enterprise through (a) provision of incentives and services available from BOI, BEPZA and BSCIC; (b) supply of utilities such as gas, power, water supply and telephone; and (c) administering of industrial regulations linked to environmental protection, health or public safety.

6.4.4 Schemes like special bonded warehouses and export processing zones, complemented by factors such as quota under the Multi Fibre Arrangement (MFA), GSP and an innovative financing scheme (back-to-back LC), facilitated the growth of RMG exports, currently the principal commodity export of Bangladesh for foreign exchange earnings in gross terms. However, the failure of backward-linkage industries to grow limits its potential contribution to foreign exchange earnings as well as to value added.

6.4.5 Several Export Processing Zones (EPZs) have been established and more are being set up. Law for the establishment of private export processing zone has been enacted. Specific incentives for foreign private investment have been provided to increase the inflow of such investment.

6.4.6 Legal reforms: Judicial and legal reforms are necessary to support the emergence of a liberalised economy. Such reforms are essential for the creation of an enabling environment for the private sector to flourish and maximise its contribution to sustained growth. The present legal system can not adequately support the efficient growth of the private sector and several laws need to be redrafted and modified to make them more supportive of the present development strategy. Further, the judicial process is observed as cumbersome and time-consuming. Steps have already been taken to rectify the situation. Bankruptcy law has already been enacted, A Law Reforms Commission has been constituted which will identify the anomalies and weaknesses in the existing laws and legal system and will recommend necessary reforms. A Judicial Training Institute has been set up for manpower development in the judiciary. Objective of such legal reform will be to ensure settlement of trade and industrial disputes through speedier disposal of cases and to simplify the cumbersome legal procedures as is observed at times and which impose cost on private business.

6.4.7 Impact of reforms: The reforms undertaken, so far, show that the overall impact has been marginally positive. These reforms have raised the rates of savings and investment in the economy in general, though recent experiences show some fragility in the growth of savings. The scope of private sector has widened significantly by raising its share in investment though the scope for rapid increase in private investment remained quite wide and unfilled. The economy now seems to be on the threshold of breaking out of the low growth situation. The average growth rate of GDP went up to 5.65 per cent in FY97 from 5.35 per cent in FY96 and 3.40 per cent in FY91. Similarly, the investment rate went up to 17.37 per cent in FY97 from 12.80 per cent in FY90. The export/GDP ratio also grew from 8.33 per cent in FY90 to 14.16 per cent in FY95 and 15.21 per cent in FY97. The inflation rate of 5.22 per cent in FY95 declined to 4.07 per cent in FY96 and 3.91 per cent in FY97, compared to the high inflationary period (average rates of 13.38 per cent during 1980-84) before the government's structural adjustment policies were initiated.

6.4.8 The progress of privatisation has been slow on account of various factors, the primary ones being low response from the private sector with respect to abiding by the contractual obligations, poor co-operation from the labour unions and opposition by vested interests, non-payment of instalments by the new owners and delay in disposal of legal disputes. This has also been inhibited by the too cautious an approach taken by the banks and financial institutions to provide financial accommodation in case of overdue loans. Efforts are being made to strengthen and speed up the process of privatisation with the appointment of a Chairman with the rank and status of a State Minister and revamping the board with membership of elected public representatives at the national level.

6.4.9 In the financial sector, reform measures aimed at (a) deregulation by the government; (b) supervision and monitoring of banks and financial institutions by the Bangladesh Bank; (c) widening scope for competitive determination of interest rate; and (d) deepening the finance in terms of institutions and instruments.

6.4.10 The spread between advance and deposit rates has grown significantly since 1988/89 (Table 6.7). The high level of spread continues to reflect inefficiency of the banking sector in terms of risk management which, in turn, discourages both savings and investment. This incompatibility of savings and investment is a serious impediment to acceleration of private investment and GDP growth.

Table 6.7
Interest Rates on Deposits and Advances 1989-95

Years	Interest Rates on Deposits	Interest Rates on Advances	Growth Rates of CPI	Spread between Advances and Deposits	Real Rates of Interest on Advances
1988/89	8.88	14.68	8.02	5.80	6.66
1989/90	9.06	14.99	9.33	5.93	5.66
1990/91	9.11	15.12	8.85	6.01	6.27
1991/92	8.11	15.12	5.08	7.01	10.04
1992/93	6.51	14.39	1.38	7.88	13.01
1993/94	5.34	12.78	1.77	7.44	11.01
1994/95	4.86	12.22	5.22	7.36	7.00

Source : Bangladesh Bank and BBS.

6.4.11 The issue of tariff reduction and rationalisation will be reviewed from time to time keeping in view the international trade scenario, balance of payments position, international commitments and national interest. The introduction of full convertibility of Taka will also depend on necessary supportive macro economic measures which will be undertaken during the Fifth Plan.

6.5 Foreign Direct Investment (FDI)

6.5.1 Foreign Direct Investment has played an important role in accelerating the pace of development in developing countries as evidenced in the Newly Industrialised Economies (NIEs). Role of foreign private investment has assumed greater importance in recent years in this region as the level of ODA has been declining. In fact, the share of ODA received by the developing countries as a whole has also been declining in recent years. The prospect of ODA in the future is also becoming uncertain. There is a general consensus on the need for larger flow of FDI to help reach the desired level.

6.5.2 With a view to improving the environment for private foreign investment, several EPZs have been established under the Bangladesh Export Processing Zones Authority (BEPZA) which was created in 1980. The BEPZA has already established two EPZs, the first one in Chittagong and the second at Savar near Dhaka. The third one is being established at Comilla. The EPZs at Chittagong and Dhaka have 96 operational enterprises. Two more EPZs will be established, one each at Mongla and Pakshey. Besides, the areas under EPZ at Savar and Chittagong are being expanded. Laws have been enacted enabling the setting up of private EPZs under which a Korean company has been given permission to set up an EPZ in Chittagong.

6.5.3 Investment totalling US \$ 236.56 million has been made in the two operational EPZs upto 1996. These zones employed 46,507 persons in their enterprises and the cumulative exports till 1996 amounted to around US \$ 1.30 billion.

6.5.4 The Board of Investment (BOI) is promoting private domestic as well as foreign investment with support services. Potential investors, both Bangladeshi and foreign, may register their project proposals with the BOI for facilitating provision of utilities. Previously, prior permission was required from the government for setting up industrial units in the private sector. From FY90 through FY96, the BOI registered 597 units for foreign investment involving a sum of Tk.175.94 billion. Foreign investment has been showing a rising trend.

6.5.5 The Government of Bangladesh, in principle, has approved the creation of Special Economic Zones (SEZs) in Bangladesh on the basis of a study report. The first SEZ will be established at Chittagong and three more SEZs in Dhaka, Khulna and Sylhet respectively in phases.

6.5.6 Foreign investment is being encouraged in almost all sectors of the economy, with special emphasis on the following areas:

- a. export-oriented industries (textiles, leather, chemicals, gems-cutting and polishing, jewellery, etc.);
- b. industries of high technology (engineering, electronics, computer software and data entry, etc.);
- c. industries based on natural resources (chemicals, power generation and distribution, exploration of oil and gas, etc.);
- d. industries based on local raw materials and agro-based food processing industries, etc.; and
- e. infrastructural facilities.

6.5.7 Important incentives for the foreign investors have been identified and will be provided in terms of:

- a. protection of foreign investment from nationalisation and expropriation;
- b. abolition of ceiling on investment and equity share-holding by foreigners;
- c. tax holiday of 5-10 years depending on location of industries and 15 years tax holiday for private power generation companies;
- d. avoidance of double taxation with different countries on the basis of bilateral agreements;
- e. tax exemption and duty free importation of capital equipment and spares for 100 per cent export-oriented industries;
- f. facilities for easy repatriation of invested capital, profit, dividend, royalty, technical fees, etc. by the foreign investors;

- g. tax exemption on royalty, technical know-how and technical assistance fees and salaries of foreign personnel working in Bangladesh;
- h. provision of banking facilities and other utility services on equal footing with local investors;
- i. keeping taka freely convertible for international payments in the current account ; and
- j. treatment of re-investment of repatriable dividend as new investment entitled to all these incentives.

6.5.8 The level of foreign private investment which was rather insignificant in the past has been rising these days. The volume of FDI registered with BOI rose from US \$25 million in FY91 to around US \$1.05 billion in FY96.

6.5.9 Since 1996, enormous interest has been shown by the foreign investors in power generation as well as in oil and gas exploration sector. Large investment is expected in these sectors and other areas of infrastructure development in the Fifth Plan period.

6.6 Financing of Private Investment

6.6.1 Both commercial and development financing institutions (DFIs) are involved in providing both short and long term credit to finance private investment (Table 6.8).

Table 6.8
Term Loan and Working Capital Financing by Scheduled Banks and DFIs

(in million Taka)

Year	Term Loan			Working Capital			Disbursed Term Loan as % of Disbursed Working Capital
	Sanction	Disbursement	Disbursement as % of Sanction	Sanction	Disbursement	Disbursement as % of Sanction	
1990-91	3,965.30	3,580.10	90.29	19,393.00	19,051.40	98.24	18.79
1991-92	3,453.10	3,282.40	95.05	23,053.80	22,913.30	99.39	14.33
1992-93	10,746.70	7,191.90	66.92	28,837.30	28,310.20	98.17	31.39
1993-94	22,123.70	13,881.70	62.76	41,942.40	40,711.80	97.07	34.10
1994-95	34,906.70	22,140.30	63.42	43,712.00	42,251.30	96.66	52.40
1995-96	16,212.00	11,338.10	69.95	39,528.70	41,320.30	114.58	27.44
Growth Rate	32.53	25.93	-	15.31	16.75	-	

Source : Bangladesh Bank.

6.6.2 Over the period 1990/91 to 1995/96, disbursement of term loans increased at 25.93 per cent per annum, while that of the working capital grew at a rate of about 16.75 per cent. In fact, since 1992/93 the term loans sanctioned and disbursed annually doubled and tripled respectively. Credit (both term loan and working capital) boom reached its peak in 1994/95 but subsequently subsided dramatically. Such a decline may be attributed to measures to combat inflationary pressure arising out of an over extension of credit. Despite rise in disbursement of institutional credit to the private sector in the early 1990s, conflict of interests stood in the way of efficient allocation of resources. The weakness in financial system precluded it from playing its due role efficiently allocating credit for a healthier private sector growth and investment. Along with the growth of institutional term loan, the capital market did not grow. Actual cost of term credit turned out to be quite high. Term credit more often than not was not matched by credit for working capital. Because of these

inadequacies and lopsidedness of the financial system the need of the private sector could not be met adequately.

6.6.3 During the 1990s, the share of credit to the private sector has ranged between 66 and 73 per cent of the total credit. The total quantum of credit appears to be adequate but because of the aberrations in the functioning of the financial sector, the credit was not always channelled to the deserving investors.

6.6.4 The banking system has occasionally suffered from periods of excess liquidity and shortages which are symptoms of response weaknesses and fundamental imbalance in the financial system. Non-payment of loans turned out as a serious problem affecting the sector. The amount of overdue loan in the banking sector as on 31 February 1997 was Tk.140 billion of which about 8 per cent of defaulters accounted for about one-third (Tk. 50 billion) of the liability. About 90 per cent of the over-due loan (Tk.126.28 billion) amounted to 41 per cent of the total loan and advances by the commercial banks implying a locked-in-rigidity of the system as a whole. A continuance of such a situation has come to threaten recycling of funds and has become an enormous impediment to resource mobilisation. Besides, the issue is latent with serious equity implications having elements social destabilisation.

6.6.5 Efforts are being made to introduce financial discipline in the banking sector since 1996. Tk.15.92 billion was recovered from the defaulters during January-March, 1997. The government has constituted a Bank Reform Committee for streamlining the operation of the banking sector. A Bankruptcy Law has been enacted and Financial Loan Courts strengthened to recover overdue loans from the defaulters. The Bangladesh Bank is monitoring the recovery programme. A task force has been set up in the Bangladesh Bank as well as for each nationalised commercial bank to oversee collection of overdue loans. It appears that loan recovery rates are higher amongst the small borrowers in contrast to rates accounted by the large borrowers.

6.6.6 Financing of private investment in rural areas has been a major focus of lending policy in recent years. Historically, the financial sector has failed to provide adequate credit to the private enterprises in both farming and non-farming sectors of the rural areas. In recent years, the rural credit disbursement has picked up with the Grameen Bank playing a pioneering role in the area of collateral free banking in the rural area.

6.6.7 Capital market : Funds are mobilised through the capital market through floatation and trading of listed shares, debentures and mutual fund certificates. Historically, the stock market has not played a significant role in the mobilisation of resources for financing investment in Bangladesh. The bulk of financing for long term investment has been provided by the commercial banks and DFIs as term loans. Raising resources through floating of shares, however, is usually cheaper than borrowing from banks because such floatation saves the cost of intermediation. In practice, this is available only to very large scale enterprises. The smaller or green field enterprises usually do not find the capital market, as it is now, a cost effective source of capital.

6.6.8 There are at present two stock markets in Bangladesh, one in Dhaka and the other one in Chittagong. The Securities and Exchange Commission (SEC) was established under the SEC Act, 1993. It is a central regulatory agency overseeing the activities of the entire capital market including issue of capital, monitoring the issue of stocks and operation of the stock markets. The SEC has also a mandate to protect the interest of investors in order to speed up the industrialisation process, and to this end, new measures are underway to strengthen the

role and capability of the SEC. The Commission constituted to investigate the activities and irregularities of the SEC during 1997 has submitted its report. Such actions including steps taken to inject professionalism and transparency into the working of the SEC will build up trust and confidence of the investors and help raise funds for investment.

6.6.9 Steps have been taken to set-up a National Stock Exchange (NSE) recently. Provision will be made to integrate the operation of two stock exchanges with NSE. Riding in a bullish wave in 1996, the stock markets turned fairly bearish at the end of 1997.

6.7 Development of Private Sector During Fifth Five Year Plan

6.7.1 Introduction: During the Fifth Plan, the private sector will be the main engine of growth. The public sector will act both as a promoter and as a partner rather than just as a regulator and will facilitate the growth of the private sector by providing improved physical and socio-economic infrastructure through regulatory and effective policy support measures.

6.7.2 Basic approach to private sector development: The Fifth Plan provides a broad canvas and a framework in which the private sector can play an effective role in the development process for which an indicative guideline is given. The government will take steps to ensure the creation of an enabling environment through legal and administrative measures and infrastructure support so that the private sector can function and contribute according to its potential. The impressive growth registered by many high performing economies including that of East Asian ones has brought into focus some essential ingredients for development, namely the need to have a liberal market oriented export led strategy along with the involvement of the government to provide necessary catalytic and effective support. The government may, where it is considered necessary, also participate in investment projects along with the private sector. Such ventures will normally be limited to areas where private sector is not forthcoming or where the government's presence is desirable as a support to the private sector.

6.7.3 Efforts will be made through adoption of a comprehensive and meaningful training programme to increase the level of efficiency in management, marketing and operation. Public awareness of this important ingredient of development will be generated through intensive public campaign and involvement of educational institutions. In potential export areas, special programmes for technology development and diffusion will be undertaken by technical institutes like textile, leather and ceramics, jointly supported by the government and the private sector.

6.7.4 The process of reform will be further intensified with the focus being sharpened on essential aspects. Since continuity of reforms along with adjustment of policies, is essential prerequisites for development and investment, the government will endeavour to forge consensus on basic and contentious issues. The process will involve meaningful interaction with the various chambers of commerce and industries and associations including FBCCI and public representatives. This will provide confidence and help businessmen and investors to plan for a longer period.

6.7.5 Steps will be taken to ensure that goods and services which are marketed conform to certain acceptable standards so as to protect consumer interests. To this end, the technical capability of the Standard Institute will be raised and the role of the regulatory bodies strengthened.

6.8 Agenda for Action for Development of Private Sector

6.8.1 During the Fifth Plan, provision of stable macro environment for efficient operation of the private sector will be high on the agenda. Monetary and fiscal policies will be so moulded and reformed as to maximise incentives to the private sector. Financial sector reforms will be accelerated to establish a viable financial sector. Trade policy will aim at reducing protective barriers for exports and enhancing incentives to exporters. The government will increase infrastructural support to the private sector.

6.8.2 Domestic market distortions will be removed to promote competition in both commodity and factor markets. For this, process of privatisation will be accelerated. Reforms of various macro and trade policies, industrial regulations, labour laws, institutions (such as trade unions) etc. will be undertaken to bring about flexible commodity and factor markets so necessary for growth of the private sector.

6.9 Macro Policy Reforms During Fifth Plan

6.9.1 Policies during the Fifth Plan will be designed to ensure a stable macro economic environment conducive to the development of the private sector. The fiscal regime will be further reformed keeping in view the twin objectives of reduction in government current consumption and increasing efficiency of resource allocation. Evidence from the neighbouring countries shows that appropriate resource allocation policy can also ensure resource mobilisation. As such, during the Plan period, the objectives of the fiscal policy will be to involve, through dialogue, the private sector so as to improve the efficiency of resource allocation and in the process, contribute to the mobilisation of domestic resources.

6.9.2 During the Fifth Plan, improvement in tax administration will be accelerated. Research oriented technical assistance for the NBR will be provided and improvements will be monitored using performance indicators. In particular, the corporate income tax rates will be lowered in order to maximise incentives to private investment, functioning of Duty Exemption and Drawback Office (DEDO) will be improved and tariff regime fully rationalised to remove anti-export bias.

6.9.3 A system of overall low tax rate will be complemented by specific investment incentives such as accelerated depreciation or tax holidays. Tax administration will be reformed to increase the confidence of investors. Extension of the coverage and improvement of collection of taxes will also be made so that further trade liberalisation and tariff rationalisation may not reduce the contribution to the exchequer. The coverage of VAT will be expanded after due study and anomalies will be removed to avoid any cascading effect.

6.9.4 Monetary, fiscal and trade policies are interlinked and need to be co-ordinated in order to ensure that targeted rate of growth is reached. Improved interaction and co-ordination of these policies amongst the Ministries of Finance, Commerce, Industries, NBR, Planning Commission etc. will be a definite steps to this end. This will also give a objectives as well as to positive signal to the private sector. The monetary policy will be reviewed to ensure supportive role in terms of investment facilitative monetary aggregates in reaching the targeted objectives. Bangladesh Bank will foster the development of secondary capital market, improve auction mechanism for its bills and also take measures to ensure efficient management of reserves.

6.9.5 With a view to encouraging private enterprise the government will provide infrastructural facilities. To attract more private investments in infrastructures, their operational problems will be reviewed and steps taken to mitigate them. More specifically, during the Plan period, the government will:

- a. continue and accelerate telecommunication sector reforms to allow greater participation of the private sector in telecommunication;
- b. accelerate reform in the power sector to enable private sector investment in power generation and distribution;
- c. continue and accelerate reforms in the oil and gas sector including divestiture of share of gas companies and development of gas fields by the private sector;
- d. allow private investment not only to develop new port infrastructures, but also to allow handling within the existing port facilities and to come forward for air cargo handling; and
- e. encourage private sector investment in physical infrastructures such as roads, highways, bridges, tunnels, flyovers, housing and real estate, etc.

6.9.6 During the Plan period, the government will press ahead with reform measures so as to raise the rates of savings and private investment through efficient allocation of resources. For this purpose, spread between the cost of fund and lending rate will be reviewed early in the Plan period. Policies will be adopted to make the money market more competitive so that the spread is commensurate with efficient operation in the money market. With the completion of the first phase of the FSRP, the government will consider reform measures in areas such as Bangladesh Bank's monitoring and supervision capacity, loan classification and provisioning guidelines, loan defaults; bank restructuring, procedural improvements and training needed to establish the viability of publicly owned and private commercial banks; non-performing SOE loans, development of investment companies and innovative financial instruments. The process of rationalisation and consolidation of the NCBs will be continued and their unprofitable branches will be replaced with viable alternative banking services. The Bangladesh Bank will ensure, through regulatory means, better internal governance in private banks. The issue of providing autonomy to Bangladesh Bank within a framework of accountability will be addressed during the Plan. The government will establish a separate development financing institution (DFI) in the northern region of Bangladesh as well as a bank for financing and supporting self employment. The major objective of reforms in the financial sector will be directed at financial deepening of the economy, creating transparency and sustaining accountability and augmenting confidence of the people in the financial system and institutions.

6.9.7 In the Plan period, diversification of savings instruments will be encouraged. Savings and loan associations and investment and leasing companies will be encouraged to be set up in the private sector. The roles of DFIs such as BSB, BSRS and BKB will be strengthened during the Fifth Plan. ICB will also be strengthened for bridge financing. In this regard, commercial banks will be encouraged to provide syndicated loans. Industrial credit and agricultural credit funds will be created up at the Bangladesh Bank to provide refinance. Venture capital institutions will be encouraged to be established. Bangladesh Bank Credit Guarantee Scheme will be continued and expanded. This scheme will be used to extend credit to professional groups such as engineers, doctors, academicians etc. for setting up enterprises/institutions for both manufacturing and services industries. Bangladesh Bank will establish an Export Credit Fund to operate on a matching grant basis to support upgrading of export product lines. Capital market will be further developed during the Plan period. Investment in all types of financial instruments will be made tax free. At the same time, strictest measures will be taken to eliminate the propensity to default. To this end, amongst other steps, a special task force will be set up in the Bangladesh Bank to deal with the top 100 wilful defaulters. Simultaneously, measures will be taken to ensure the

elimination of transaction costs which increases the actual cost of funds and to free bank management from the stigma of such allegations.

6.9.8 The issue of privatisation of nationalised commercial banks will be reviewed during the Plan period. Specialised institutions such as the Grameen Bank and Palli Karma Shahayak Foundation (PKSF) will expand their scope of operation during the Plan period for which government will provide adequate support.

6.9.9 Microcredit: The Fifth Plan recognised that the poor are assets rather than liabilities and, if ensured access to vital inputs like credit, they can contribute substantially to the growth process. As such, there is a necessity for implementing the philosophy of microcredit concept. The importance of micro lending has now been recognised world wide leading to World Microcredit Summit in February 1997. The declaration of the Summit called for the creation of an institutional capacity to reach the very poor in the developing countries by strengthening existing microcredit, savings and business development institutions through networking and exchange of experience. The Summit estimated that 21.6 billion dollars will be required to meet the needs of the poor all over the world upto the year 2005. Microcredit is a major means of financing private sector investment in the rural areas in Bangladesh. Grameen Bank, Government institutions such as BRDB, PKSF etc. and several NGOs such as BRAC, PROSHIKA, ASA and MIDAS are involved in this process. The recovery rate for institutions such as Grameen Bank and BRAC are commendable. However, the impact of these institutions on the economy as a whole is still limited. Grameen Bank has been able to develop a successful delivery mechanism for provision of microcredit, mainly for the development of non-crop farming and off-farm activities. Bangladesh Krishi Bank is another specialised financial institution delivering credit for farming activities. Several other parastatals are also involved in extending credit mostly to the agricultural sector.

6.9.10 In the Microcredit Programme during the Fifth Plan, one of the major priorities of the government will be to reinforce its efforts to generate employment opportunities and self-employment at the grassroot level, particularly in the rural areas through nation wide campaign and provision of support services for development of small and micro enterprises. The Plan envisages to develop a productive micro-enterprise sub-sector to provide profitable self-employment to the rural people supported by public and private sector institutions. To attain these objectives in the Plan period steps will be taken to:

- a. establish a separate credit line in the banks and financial institutions for the micro enterprises and entrepreneurs and to develop sustainable programme of services to meet the credit needs of micro entrepreneurs and to facilitate their access to financial resources for investment in micro enterprises;
- b. establish viable micro enterprises through rural family entrepreneurs by providing counselling and other advisory services from the relevant government and non government institutions and organisations;
- c. undertake programmes for skill development through training and dissemination of technologies at the grassroot level;
- d. establish private sector financial intermediation services to develop the market for credit to micro entrepreneurs; and
- e. develop replicable models for micro enterprises which can be disseminated for adoption throughout rural Bangladesh.

6.9.11 The Fifth Plan seeks to create enterprise ownership and employment opportunities to enable the rural and urban poor and the unemployed to break through the vicious circle of

poverty. The target group for ownership/operation of micro enterprises will cover, but not be limited to, the following:

- a. Owners/operators of existing micro-enterprises who have proven managerial and technical skills in self-employment and who wish to expand, upgrade or diversify their business;
- b. Family entrepreneurs interested in starting a micro enterprises;
- c. Persons who have acquired the capacity to operate micro enterprises through apprenticeship or working as skilled labourers and who will like to start their own business;
- d. Persons capable of running poverty alleviation schemes like those supported by different institutions including NGOs in related sectors and interested to expand their ongoing small income generating activities; and
- e. Unemployed graduates of universities, polytechnics, and monotechnics, or of the youth training institutions seeking self-employment in preference to wage employment and who are interested and capable of starting commercially viable micro enterprises.

6.9.12 Trade policy reforms: The Fifth Plan will follow an outward looking development strategy with export as an engine of growth. Import liberalisation will continue within an well defined time-frame in order to accelerate economic growth. For this purpose, the reforms in the trade policy, which have boosted exports in the recent past, will be further intensified during the Plan period. Protection will be provided through tariff adjustment rather than import control which will be phased out within a practicable time-frame. The tariff schedule will be reviewed and the rate and structure determined by government's overall objectives including the need to generate resources, encourage competitiveness and efficiency and to ensure supply of raw materials at world prices to promote local industries. The Import and Export Policies will henceforth be formulated for five years instead of two years with provisions for annual review to provide stable long term perspective for investors and the business community.

6.9.13 The government will create an enabling atmosphere for the growth of local industries by rationalising the tariff structure, encouraging their adoption of quality control measures such as ISO 9000 and ISO 14000, safeguarding them from unfair foreign competition through actions compatible with WTO trade regime and providing incentives to raise overall efficiency and productivity in the industrial sector. Measures will also be taken to protect consumer interests by maintaining adequate supply through import of goods.

6.9.14 Export credit will continue to be provided and steps will be taken to increase its coverage and intensity. The need to set up an EXIM bank along with facilities to disseminate information pertaining to trade will be examined. The support given for the export sector will be reviewed periodically and further measures consistent with WTO regulations will be adopted. These will include a variety of concessions including simpler duty drawback system so as to provide exporters with imports at world prices.

6.9.15 An appropriate policy regime will be created for exchange rate management with the objective of maintaining adequate reserves and competitiveness under the flexible exchange rate policy.

6.9.16 Privatisation of SOEs : The process of privatisation will be accelerated during the Plan period and will involve the main stakeholders so as to realistically determine the goals and strategies for privatisation including various options (e.g. open tender, worker buy out,

sale to strategic investors, liquidation, etc.) and arrangements for protection of labourer's interest and severance payment. Institutional reforms such as revision of the mandate and improvement of technical capabilities of the Privatisation Board will ensure achievement of such objective. A comprehensive privatisation law, taking care of the legal rights and obligations in so far as they relate to the privatisation process including indemnification of personnel for acts carried out in pursuit of their assigned responsibilities, will be enacted. The process will be completed by the year 2000 with intermediate annual targets. A special cabinet sub-committee will be set up to deal with and decide on privatisation issues. The policies will be adopted to ensure that the units to be privatised are sold outright rather than under instalment system. There will be progressive unloading of shares of the SOEs on the stock market and the workers of the privatised enterprises will be given the option to own and manage such units. The intensification of reforms relating to macroeconomic stability, legal system etc. during the Plan period is expected to contribute to the privatisation programme.

6.9.17 Provision of incentives to private sector: In addition to the supportive measures indicated the government will continue and provide and also examine the possibility of strengthening the incentive package for the development of the private sector during the Plan period taking into account facilities and incentives provided by other countries in the region. Steps will be taken to speed up establishment of special bonded warehouse facilities and to develop the existing export processing zones, which eventually will be integrated into the economy of the country. Improvements will be made in the functioning of the DEDO and new and revised flat rates will be introduced in response to demand. Further, such duty drawback will also be made available for those who supply inputs to exporters. No tax will have to be paid on amount which is reinvested from income of earlier investment. Any investment in manufacturing and investment in R&D will be made tax free. The export diversification will be encouraged through a professionally managed scheme for product and market development. The Export Promotion Bureau (EPB) will be streamlined so as to make it less regulatory and to increase its supportive role. In this context, formation of an Apparel Board will also be considered.

6.9.18 Legal reforms: The Fifth Plan recognises that an important pre-condition for greater private sector involvement will be the maintenance of the law and order. Creation of national awareness of this precondition and adoption of appropriate measures to fulfil this will be given priority by the government during the Fifth Plan. Law enforcing agencies will be geared up and strengthened during the Fifth Plan so as to create a safe and conducive environment for the private sector.

6.9.19 For development of an effective private sector, the legal system has to ensure the private property rights and enforcement of contractual obligations. For this, the adjudication process of commercial disputes will be quickened and bilateral settlement and arbitration rather than court based adjudication will be encouraged. Small causes courts will be set up to facilitate quick disposal of cases of small investors and traders. The work of the Law Commission will be expedited during the Plan period. The Commission will be asked to expedite recommendations, amongst others, on strengthening the legal and regulatory framework including improvement in business related laws, improving the alternate dispute resolution mechanism and drafting and vetting capacity of the relevant Ministries.

6.10 Projection of Private Investment During Fifth Plan

6.10.1 In view of the intensification of private sector oriented reforms, it is anticipated that the private investment will increase substantially during the Plan period. An amount of

Tk.1100.58 billion (56 per cent of the Plan outlay) has been projected as private investment in the Fifth Plan (Table 6.9).

Table 6.9
Projected Private Investment During Fifth Plan
(at 1996/97 prices)

(in million Taka)

Sector	1996/97 (Bench mark)	Plan Projection	Percentage Share
Agriculture	16,029	119,864.31	10.89
Manufacturing	33,431	298,776.16	27.15
Power, Gas and Natural Resources	2,749	37,726.07	3.43
Housing and Construction	23,814	180,017.61	16.35
Transport and Communication	18,777	118,876.80	10.80
Trade and Others	44,422	345,321.15	31.38
Total of All Sectors	139,222	1100,582.10	100.00

Note: The projection of private investment is indicative only. Sector wise private investment has been made on the basis of past trend of investment and its prospect during the Plan period

6.11 Private Investment in Agriculture

6.11.1 The bulk of the investment in agriculture sector is expected to be in the private sector. The basic thrust during the Plan period will be to increase the growth of private investment in both crop and non-crop sub sectors. For this purpose, provision of strategic inputs like credit through the banking system as well providing information on market and technology through the public extension services will be ensured. Some specialised extension activities such as those related to fruits and vegetables enterprises will be transferred to the private sector.

6.11.2 The public sector will provide infrastructure and support services including promotion of access to foreign markets, technology and capital. The government's major contribution to the development of infrastructure in the agriculture sector will be in the area of research and extension, provisions of quality seeds and creation of large scale irrigation works and barrages during the Plan period. One of the major efforts in this area will be the construction of the Ganges barrage. However, such activities in the irrigation sub-sector will depend on riparian agreements. Agreement on water sharing of the Ganges has already been signed with India. Efforts are underway to conclude more of such agreements in respect of the remaining 53 common rivers. Private investment in small irrigations will increase as and when such riparian agreements are reached and major flood control and irrigation works are completed by the public sector.

6.11.3 The main thrust of private investment in agriculture during the Plan period will be the attainment of food self-sufficiency, crop diversification and acceleration of investment in the livestock, fisheries and forestry sub-sectors. Special attention will be given to the development of poultry. Mechanisation of agriculture will be encouraged through tax incentives. Development of food storage and marketing facilities will receive priority through proper incentives and support. Adequate technical, material and financial support as well as training on various activities of these sub-sectors will be provided. The production of seeds

and feed, streamlining marketing, increasing credit and strengthening disease control, etc. will also be given to the private sector so that the growth of agriculture can be raised significantly. The technology packages so far developed will be implemented during the Fifth Plan. About 10,000 entrepreneurs will be trained in the Plan period. Some productive livestock farms set up in public sector will be transferred to the private sector. In the area of forestry, investment in agro as well as in social forestry will be encouraged.

6.11.4 Particular attention will be given to the improvement of the delivery system for distribution of strategic inputs, especially micro credit. Of the support services, government will particularly focus on provision of marketing assistance to the farmers. Building of storage facilities will considerably benefit those, particularly the poor farmers, who are involved in the crop sub-sector. Participatory approach will be followed during the Plan period in the implementation of the public programmes with full participation of local government bodies. Unemployed youths will be trained in installation and maintenance of small irrigation equipment.

6.11.5 Co-operatives have been working in rural development drawing inspiration from the success of the Comilla Academy approach. While there are many success stories, the co-operative system has, however, not expanded to the desirable extent nor the objectives have been reached. Failure to give due priority to such institutions as well as their management are the major reasons for such shortfall in performance. The present government intends to focus substantially on the development of co-operatives during the Plan period. The strengthening of such institutions will enable them to spur the growth of private investment in the rural economy and help attain poverty alleviation.

6.11.6 Several NGOs are also working in the field of agriculture, specifically in the areas of livestock, fishery and forestry. Many NGOs- such as BRAC, PROSHIKA, ASA, IIRD and GSS are at present providing microcredit to the people in the remote areas of the country for investing in income generating activities. These NGOs have achieved commendable success in service delivery. During the Plan period, attempt will be made to co-ordinate the activities of the government, NGOs, and co-operatives in order to minimise overlap of efforts of the various relevant institutions. Comprehensive participatory local level plan will take into account the linkages between these programmes.

6.11.7 The poor and the disadvantaged groups who are to be organised by the local government bodies, co-operatives and NGOs are going to be the main agents as well as the main beneficiaries in the local level participatory planning process. In order to assist the poor and the landless to benefit from such programme aimed to integrate them with the market process, government resources like khas land and jal-mahal will be distributed among them.

6.11.8 The issue of falling profitability (as revealed in the IBRD Report of 1995) in the crop sector will be addressed during the Plan period. An Agricultural Price Commission will be formed to formulate price policies. At the same time, the feasibility of agricultural insurance will be explored in order to minimise the impact of natural calamities in the volatility of income in the agriculture sector and welfare of rural households. Such measures are expected to contribute to the growth of private investment in the sector and reduce the risk of the banking sector as well.

6.11.9 In view of the success of the privatisation of agricultural input distribution during the past plan periods, efforts will continue in the same direction during the Fifth Plan. While privatising any activity or enterprise, special attention will be given to the workers/employees.

They may be involved in management and ownership of the privatised enterprises. Proper studies will also be undertaken in order to determine the time-frame for the implementation of privatisation in the sector. As a result of government policies, private investment in agriculture is projected to be around Tk.120 billion during the Plan period.

6.12 Private Investment in Manufacturing

6.12.1 During the Fifth Plan, highest priority will be accorded to the development of private investment in manufacturing. At the same time, efforts will be intensified to reduce the direct involvement of the public sector in production activities. For this purpose, the privatisation process will be accelerated and further extended to some other areas. Intense efforts will be continued to encourage FDI in manufacturing.

6.12.2 Government's role will be limited mainly to that of a facilitator and creator of an enabling environment wherein the private sector can operate and flourish. As discussed below, various institutional improvements will be made in the organisations like BOI, EPB, BSCIC, etc., to facilitate private investment. The government will strongly stress on the acquisition of information on market and technology and disseminating them to the private sector. Adoption and adaption of technologies through R&D efforts will be focused. Feasibility study for setting up of an institution like Korean Institute of Advanced Science and Technology (KIAST) will be undertaken during the Plan.

6.12.3 Thrust sub-sectors have been identified within the overall framework of an industrial strategy emphasising export-oriented and efficient import-substituting industries. In this context, private investment will be encouraged amongst others in the following sectors:

- a. Textile industries:** Private investment in the textile industries will be encouraged with particular emphasis on improvement of quality through technological improvement. This will be done not only with a view to maximising the backward linkage of ready made garments (RMG) manufacturing but also to enabling the exports of fabric and yarn. In view of the impending phasing out of MFA, efficiency of the private sector has to be increased through providing information and training, access to developed technology and effective marketing strategy. A new important dimension of RMG will be production and export of high value garments. For this purpose, necessary incentives, including import of specialised fabrics and materials, will be provided. Private investment will be encouraged in fashion industries and the government assistance will be provided in organising fashion shows of Bangladeshi products abroad. Setting up of schools of textile design teaching computer aided design (CAD) and computer aided manufacturing (CAM) will be encouraged in the private sector during the Plan period.
- b. Leather and leather goods industries:** Investment in the form of foreign direct investment and joint ventures in this sector will be encouraged on a priority basis because of its tremendous export potential. Like textiles, this sector is closely linked to the international market. Similar assistance, as given to the textile, will also be extended to this industry.
- c. Computer software development data entry and data processing industry:** In view of large international trade volume in the area of software development, data entry and data processing, private investment will be encouraged and accorded priority. This industry has an enormous potential for generating foreign exchange and employment.

In order to facilitate private investment in this area, steps such as development of appropriate manpower, extension of telecommunication services, including leasing out of V-SAT channels at reasonable costs, provision of bank loans and fiscal incentives, etc., will be pursued during the Plan period. To facilitate rapid investment in these activities, exclusive zones will be established in selected locations within a short time. Guaranteed infrastructural facilities such as electricity and telecommunication will be provided in these zones.

d. Electronics industry: Investment will be encouraged in electronics industry in view of its import substitution as well as export potential. Many such industries have been relocating from developed regions of the east, particularly Japan in labour abundant country. Semi-conductor is a large industry and is relocating. The strategy for encouraging FDI will take such factors into account. Planned efforts will be made during the Plan period to attract FDI to this sector. Electronics industry is quite amenable to sub-contracting. Hence, during the Plan period, linkages will be developed between small enterprises and large industries. This will be important from the point of view of poverty alleviation objectives.

6.12.4 Selected agro-based industries, relating to fish, vegetables, fruits and flower, etc., will be developed in view of growing international demand for such products. As these are perishable goods, exports of these will benefit from recent decision to privatise air freight. Deregulating air freight services will allow private cargo carriers to compete with the national carrier and ease the constraints on transportation of high-valued but fragile agricultural exports.

6.12.5 In view of their export potentials, growth of jewellery, printing and publishing, handicrafts, etc. will be encouraged.

6.12.6 Because of lack of an enabling environment as well as other reasons including inappropriate policies in the past and economic changes, many industrial units have become economically sick. Some of the industries affected are: steel, leather, chemical, jute, food and allied, rubber, pharmaceutical, textiles industries and handlooms. The issues pertaining to sick industries constitute an important element in the context of industrialisation of Bangladesh. Steps will be taken to rehabilitate those industries which are likely to become viable through reasonable investments. The possibility of creating a Sick Industry Fund for the purpose will be examined.

6.12.7 During the Plan period, strong emphasis will be given to the development of small and cottage industries with the objective of achieving balanced regional development. It is anticipated that such industries will also contribute to export. BSCIC will be strengthened to facilitate such development.

6.12.8 In view of the emphasis placed on industrial development, it is projected that the private investment in manufacturing sector during the Plan period will be around Tk.299 billion in which the share of small and cottage industries will be 40 per cent of the sectoral total.

6.13 Power Gas and Natural Resource

6.13.1 Power, gas and natural resources sector has been basically in the public domain in the past. Recently, the government has decided to involve the private sector in the development of hydro-carbon resources on a large scale through participation of international oil companies (IOCs) under production sharing contracts. Several contracts and MOUs have

been signed with the private sector for the exploration of gas and for expanding power generation. Although activities of the local investors in this field will be limited and be mainly in distribution, they will gain experience during the period. In view of the government efforts, it is anticipated that private investment, particularly foreign private investment, will increase substantially during the Plan period and it is projected that in this sector such investment will be around Tk. 38 billion.

6.13.2 South Asian Triangle has huge potential for development of power and natural resources. However, collective efforts are needed to harness this potential. The leaders of all the neighbouring countries have already recognised the role of sub-regional cooperation in the development of this sector. Efforts will be made to undertake joint venture projects in this context.

6.14 Housing and Construction

6.14.1 In view of large population, intensification of growth process and growth of population, the pace of private investment in housing and construction is going to increase during the Fifth Plan. During the Plan period, the involvement of the private sector/NGOs will be expanded to include slum improvement, waste management, sanitation, roads, water supply, flood control, development of markets for district towns and thana centres. Private sector participation in both the urban and rural housing, particularly low cost housing, will be encouraged through incentives, targeted loans and infrastructural support. Private investment will be encouraged in the production of construction equipment and materials, sanitary fittings including latrines by providing credit and technological support. Private sector/NGOs will be encouraged to develop and run tourist sites and other facilities.

6.14.2 The role of the commercial banks and financial institutions including House Building Finance Corporation(HBFC) has been quite significant in the past. The HBFC has provided considerable amount of credit in urban areas. Its programme in this direction will be continued during the Plan period. These institutions will be further strengthened so as to facilitate private investment. In view of the Plan's objective of maximisation of social welfare, low cost housing will receive priority in credit disbursement by such institutions. Private sector will be encouraged to invest in housing estates to ease housing shortages. Greater investment in turn, will enable families with modest means to purchase such dwelling units. Improvement of quality through technological improvements without increasing cost will be the prime objective of governmental efforts in this sector. Private investment in research on building technology will be encouraged. The government is going to evolve and enforce a uniform code for house building in the Plan period.

6.14.3 In view of expected high growth of the economy during the Fifth Plan and successful involvement of the private sector in housing in the recent past, it is anticipated that the private investment in this sector will be around Tk. 180 billion during the Plan period.

6.15 Transport and Communications

6.15.1 Although the transport sector is dominated by the private investors, adequate investment has not been forthcoming except in the road and water transport sectors. During the Plan period, steps will be taken to remove the obstacles to such investment in road and water transportation. These steps will cover militant labour groups, shortage of credit and inefficiency and corruption in traffic administration. An inter-ministerial task force will be formed and steps will be taken on a priority basis to eliminate the negative impact of these forces on private investments in this sector.

6.15.2 In the past, air transportation was in the public sector. The government has now opened up domestic and international routes to the private investors and deregulated the air freight so that domestic private companies can compete with international ones. This is vitally linked to the growth of export.

6.15.3 During the Fifth Plan, amongst others, the private sector will be involved in the development of appropriate regulatory framework and incentive packages for its increased participation in port development, establishment of container terminals, setting up ferry services and procurement of container feeder vessels and mother tankers. Use of private equipment for handling cargo will also be allowed. The possibility of forming a joint venture between Chittagong Port Authority and a private company for operation and maintenance of a Dredger Authority will be explored. Besides, private sector participation will be encouraged in the following areas :

- a. construction and operation of container terminals as well as bulk, break-bulk, multipurpose berth and specialised cargo berth out-side the port protected area;
- b. leasing of equipment for private handling ; and
- c. construction of a deep-sea port.

6.15.4 Private sector will be encouraged to set up inland container depots(ICD). Besides, the transportation of containers from sea ports to Dhaka will be opened to the private sector and private investment will be encouraged.

6.15.5 At present, there are no restrictions for private companies to own and operate ocean-going ships. Moreover, 12.5 per cent share of BSC is now owned by the private sector. There is a programme for divesting 49 per cent shares of BSC to the private investors.

6.15.6 In the inland water transport, private sector will be involved in the following areas :

- a. operation and maintenance of ferry ghats;
- b. development of rural launch stations/landing stages; and
- c. providing aid to navigation in inland water ways.

6.15.7 In the road transport sector, the private sector will be encouraged to invest in the construction of road and other related infrastructures also.

6.15.8 Historically, communication has been an area dominated by the public sector and the role of private sector in development and operation of communication has been negligible. Since mid-eighties, initiatives were undertaken to bring private sector participation in the telecommunications services. First private operator licence was issued in July, 1989. During the last couple of years, the telecommunication sub-sector has been opened up for increased private sector participation . As a result, three more private telecommunication operators were given licenses for providing digital cellular mobile telephone services all over the country. In November 1996, licenses for digital mobile cellular radio telephone services were issued to three private operators in addition to the only existing cellular mobile telephone operator, to increase competition in the sector. All these are joint venture companies between Bangladesh and foreign partners. In addition, six private companies have started providing internet and electronic mail (e-mail) services in the country. During the Plan period, a telecommunication policy will be designed and formulated so as to attract more direct foreign and local investments for building a fully digital telecommunication infrastructure in the country and providing competitive and cost-effective services. This will include value added services like high speed transmission cellular mobile phones, internet, e-mail, cable TV, etc. Necessary programmes and policies will be undertaken to facilitate the development of export oriented data entry/data processing and software industry in the private sector.

6.15.9 Further steps will be taken to encourage private investment in the communication sub-sector in terms of (a) competition for services among private cellular operators and between the private cellular operators and the Bangladesh Telegraph and Telephone Board (BTTB); (b) new investments creating competition between wired and private radio-based network.

6.15.10 In view of the privatisation efforts as well as other policies to be undertaken by the government, the private investment in transport and communication sector is projected to be around Tk.119 billion during the Plan period.

6.16 Private Investment in Trade and Others

6.16.1 Investment activities in these sectors include investment in trade and commerce, educational services, health services and professional services, etc. In line with the overall strategy to follow a private sector led-growth during the Fifth Plan, and in tune with the tradition of the private sector's involvement in such sub-sectors, efforts will be intensified to encourage private investment in these sectors.

6.16.2 The government will, amongst other areas, encourage private sector involvement in trade, education and health. Further, some activities including food procurement will be shared with the private sector. However, where welfare considerations are involved, it will be ensured that certain acceptable standards are met through framing of appropriate rules and regulations and their enforcement.

6.16.3 Steps will be taken during the Plan period to encourage institutes of higher learning such as universities, medical colleges, etc. in the private sector. These institutions must conform to acceptable standards and provide access to the poor but meritorious students. Academicians will be encouraged to set up educational institutions in order to ensure quality of education. To encourage private investment in education services, incentives such as credit, land, etc. will be provided through the credit guarantee scheme currently being operated by the Bangladesh Bank and allocation of appropriate government land by the Ministry of Housing and Public Works and urban development organisations like Rajuk.

6.16.4 In the area of health, establishment of private hospitals, clinics, diagnostic centres, etc. will be encouraged through deregulation and provision of incentives including reduction of tariff on imports of medical equipment, appliances, essential medicines and chemicals for surgery and complicated diseases. In the area of sports and culture, the involvement of the private bodies and individuals will be encouraged through financial grants and awards and other incentives. The affluent citizens will be encouraged to sponsor sports and cultural activities. In the area of mass media, private activities will be further expanded through opening such activities for investment and operation by the private sector.

6.16.5 In order to encourage tourism, development of hotels and other physical facilities in the private sector will be given high priority. Establishment of more investment banks and insurance companies in the private sector will be encouraged.

6.16.6 It is anticipated that due to intensification of efforts to encourage private investment in trade and others service sectors, the total investment will be around Tk. 345 billion during the Plan period.

6.17 Institutional Issues

6.17.1 To increase the efficiency of the labour force appropriate policies will be framed to develop necessary skill and knowledge. The government will take the lead in initiating a proper programme and will encourage greater participation by the private sector, as this is expected to reflect the demand for such training more effectively. Such training programme

will be adopted in consultation with trade associations, industries as well as educational institutions including the universities. The programmes will be aimed at raising skill and knowledge of existing personnel as well as that of the prospective additions to the labour force. The industries or relevant trade associations likely to benefit should be made to defray a part of the cost so as to ensure relevance and prevent wastage. A proper certification system reflecting the proficiency acquired will be introduced and efforts will be made to ensure their universal acceptance.

6.17.2 As the policy of privatisation will be pursued vigorously, the BOI and the Privatisation Board will have to shoulder greater responsibility. As such, the BOI will be restructured and staffed with additional professional personnel who will be appropriately trained. The mandate of the BOI has to be broadened and backed by necessary regulation and administrative orders so that its decisions are accepted as that of the government. BOI will be better equipped to supply information and data to potential investors and has also to facilitate, through the establishment of One Stop Cell, speedier decisions and implementation relating to the supply of power, water and telecommunications and to ensure basic infrastructural facilities. The Privatisation Board and the BOI will monitor implementation of the on-going projects. A "Wing" will be set up in the General Economics Division of the Planning Commission to co-ordinate the activities of the private sector and to review and support its performance.

6.17.3 EPB will be reorganised to enable it to play a more pro-active and supportive role for increase of exports. This will involve collection and dissemination of information on market and technology including providing technical assistance for new export products, carrying out market research and support for diversifying exports both in terms of products and destinations. There will be greater representation and involvement of the private sector in the management of EPB.

6.17.4 Bangladesh Standards Testing Institute (BSTI) and other specialised standards setting agencies will be strengthened to provide prompt professional services in order to ensure quality of export to the satisfaction of buyers.

6.17.5 Institutions involved in research and development such as BCSIR, BRRI, BARC, BIDS as well as Bangladesh College of Leather Technology, Bangladesh Institute of Glass and Ceramics, etc. will be strengthened with the object of facilitating the development of the private sector by undertaking relevant research and ensuring dissemination of such knowledge promptly and efficiently. An Institute of Biotechnology will be set up to facilitate research in various aspects of agriculture in general and food crops in particular. Further, an Institute of Oceanography will be established to explore the ways and means of harnessing sea resources more widely and effectively.

6.17.6 The Government will adopt measures ensuring linkages and contribution by the different chambers of commerce and industries and associations to R&D activities.

6.18 Partnership Between Government and Private Sector

6.18.1 The Fifth Plan will develop an effective mechanism for linking various chambers of commerce and industries and trade associations with the planning and implementing process. The present arrangement of having dialogues with these chambers and associations will be reviewed and joint consultative committees will be established in the relevant Ministries, for exchange of views to review policies, projects and programmes. These committees will resolve problems, identify bottlenecks in implementation of programmes and projects and suggest follow up measures.

6.18.2 Each ministry will prepare a plan delineating the role of the private sector in implementing the plan objectives in its relevant sectors and will also draw up, in consultation with the private sector representatives, the nature of government support needed to harness resources and to enable the private entrepreneurs to play their expected roles.

6.18.3 A Council of Private Enterprises will be constituted under the chairmanship of the Prime Minister with representatives from the private and public sectors. Minister of Commerce and Industries will be the alternate chairman of this council. The council at the highest level will advise the government to take such measures as will be needed over time to bloom out private enterprise and its creativity.

6.18.4 Skill development in the private sector is a sine-qua-non for speedy development and along with governmental efforts the private sector will also be supported to expand its activities in this area keeping in view international and national needs. Policies will be framed for proper certification of training received reflecting the standard of acquired proficiency and for helping the expansion and strengthening of such institutions. Attention on adoption of standards and quality control measures so as to keep pace with international requirements will be given.

6.18.5 The transformation of the role of the state from one of a regulator to that of a partner and facilitator will necessitate changes in the nature and content of the training of the civil servants. Such changes will reflect the new dimensions that have emerged as a result of the sharper focus on the private sector and adoption of market economy. Representatives of private sector should regularly participate in such courses both as resource persons and as participants.

6.18.6 The government, as a partner as well as promoter of the private sector, will reorganise its foreign missions so that they can assist the local private investors in marketing their products abroad. They will also provide information about market and opportunities in Bangladesh to the prospective foreign investors.

CHAPTER VII

PARTICIPATORY RURAL DEVELOPMENT AND LOCAL GOVERNMENT INSTITUTIONS

7.1 Introduction

7.1.1 In spite of two and a half decades of economic development, Bangladesh is still regarded largely as a rural economy. Agriculture contributes about one-third of its gross domestic product and about 80 per cent of its people still live in the rural areas. Further, most of the rural people are poor and disadvantaged. Their sufferings stem not only from low income but also from illiteracy, ill-health, ignorance and various kinds of deprivations. They are particularly vulnerable to calamities, both natural (cyclone, flood, drought, etc.) and man-made (black marketing, hoarding, etc.). Development planners recognise that the upliftment of the poor and backward masses is a pre-condition for the overall development of the country. Successive five year plans of the country, therefore, emphasised rural development with a focus on the rural poor, in one way or another. But in the implementation of this objective, the success was rather limited due to some constraints, at the top of which was the lack of participation by the stakeholders - the poor themselves, who hardly had any influence and control over development initiatives.

7.1.2 Participatory development embodies collective effort by the very people, who are the beneficiaries of development. In a well defined framework the people pool their efforts and whatever other resources they decide to pool together to attain the objectives they set for themselves. Participation is an active process through which stakeholders influence development initiatives and take action that is stimulated by their own thinking and deliberation, and over which they can exert effective control. Participation, thus, may be viewed as the exercise of people's power in thinking and acting and, thereby, realising the essence of democracy in conformity with the constitutional dictum that all power belong to the people. Implicit in this concept of participation is the concept of self-reliance, if not self-sufficiency.

7.2 Some Innovative Experiments in Participatory Rural Development in Bangladesh

7.2.1 The Comilla approach in the 1960s provided the first systematic opportunity for the small and the marginal farmers to participate effectively in the process of promoting agricultural revolution in this country. It had four basic strategies: (a) organisation of the village people into primary co-operatives (KSS) of their own; (b) the integration of these primary co-operatives into the Thana Central Co-operative Association (TCCA) for credit support; (c) an extensive extension training system through Thana Training and Development Centre (TTDC); and (d) development of water resources (along with other inputs) for agricultural development through a Thana Irrigation Project (TIP). Later, this institutional mechanism was modified to organise also the poor women and the landless (in their own co-operatives) for income generating activities.

7.2.2 Based on its initial success the Comilla approach in its second phase, developed a comprehensive thana/union development planning format with focus on optimal land utilisation and crop diversification. The exercise was to be initiated at the village level, to be consolidated at the union level and co-ordinated at the upazila level. During 1965-70, hundreds of officers, people's representatives and other social workers were trained in this format. In the absence of appropriate motivation, the system later degenerated into one dominated by the bureaucracy and the efforts could not be consolidated and applied in full for the benefit of the poor. The Comilla Academy has now developed another format for rural development called "Comprehensive

Village Development" (CVD) programme. Under it, the village is considered as an integral whole and all its inhabitants are brought under one umbrella co-operative for comprehensive bottom up development. Since 1984, it has spread into 40 villages (15 in Comilla, 10 in Sylhet, 7 in Sonargaon and 8 in Burichang Thana) as an experiment of local level planning.

7.2.3 In the late 1970s, the "Swanirvar movement", like the Comilla approach, attempted (a) to organise different interest groups at the village level; (b) represent them in an informal village based organisation; and (c) then link them informally with the union parishad on the one hand and the thana officials of the various ministries/agencies, on the other. Its differences with the Comilla approach was that (a) while Comilla approach paid more attention on the small and marginal farmers, the Swanirvar movement tried to bring all the interest-cum-functional groups (large farmers, small and marginal farmers, the landless labourers, the women, the youth, etc.) first under their own informal organisation and then bring them together under a village development committee with approximately two representatives from each group. It had two varieties: under the Sadullahpur model, the local ward member of the union parishad would become the head of this village development committee; under the Kushtia model, the villagers would select (on the basis of consensus) the chairman of this committee. As a model in its two variants, it did not survive beyond early 1980s.

7.2.4 A more successful experiment in poverty alleviation that attracted attention of all in the 1980s was the Grameen Bank. Its main hypothesis was that the poor were bankable. If credit could be advanced to them through an innovative process, they would not only repay the credit fully as per schedule, but also simultaneously generate a dynamic process of production savings and investment that could eventually lead them to graduate to self-reliance. More important, 95 per cent of the clientele of the Grameen Bank turned out to be women.

7.2.5 Role of NGOs at Grassroot Level Development: During this period, the number of non-government organisations (NGOs) also increased throughout the country. The process was helped by easy availability of donor funds for NGOs. The donors supported the NGOs to supplement the government's delivery system to reach the poor and to play a more creative role to conscientise them. This argument created an indirect pressure on the government to make its delivery system to be more efficient. The resultant competition between the GOs and NGOs to reach the poor brought the questions of cost-effectiveness, transparency and accountability of using public fund under sharper focus.

7.2.6 The major activities of the main NGOs in Bangladesh can be enumerated as follows:

- a. rural physical infrastructure building (food for works, canal digging): mainly by CARE;
- b. agricultural development by CARE, CARITAS, CCDB, BRAC, PROSHIKHA;
- c. non-agricultural development programmes for promoting employment by the local level organisations;
- d. health, population control and family welfare programmes of FPAB, BAVS, BRAC, Swanirvar Bangladesh, National Youth Federation and a number of women organisations; and
- e. training and education and conscientisation programmes of BRAC, FPAB, BAVS, IIRD, etc.

7.3 Main Constraints to Rural Development

7.3.1 In the light of experience gained in the past, the main constraints to rural development seem to be the following:

- a. Although "village" was the basic geographic unit and constituted the bottom-most entity for identification of development needs in rural areas, there was hardly any "effective development organisation" in it. Frequently, it was held that an average village in Bangladesh was too small to be regarded as a formal organisational unit. On the other hand, without such an organisation, the villagers, particularly the rural poor, found it difficult to effectively participate in the development process.
- b. There are a number of government agencies for service delivery at various tiers of local government (district, upazila and union) but, in the absence of effective "clienteles" organisations, the delivery structure had remained somewhat inaccessible and inefficient. In particular, this system did not reach the poor and the disadvantaged in all cases.
- c. The various efforts to organise the people at the grassroot level through local government bodies also did not succeed, as in the absence of democratically elected government, these bodies were used to serve political interest of the power that was in the central government. As a result, local government bodies in Bangladesh proved to be more of an extended arm of the Ministry of Local Government and Rural Development and Co-operative and, as such, they could not grow on their own. In particular, they remained heavily dependent on the government for their resources and initiative.
- d. The government personnel who were sent to the rural areas to work for the poor, largely proved to be inadequately motivated for participatory local level development (for various reasons such as inadequate training, incentive structure, logistics, etc.)
- e. No effective mechanism could be developed for co-operation and co-ordination at various tiers of administration (district, upazila and union). The need for effective co-ordination increased overtime in response to the expansion of development activities in the rural areas.
- f. The understanding of the decision makers of the need for and effectiveness of "participatory local level planning" was rather poor. Most development planners (including bureaucrats and technocrats) thought that such participation was unnecessary mainly because of ignorance and illiteracy of the poor. The usual emphasis was on the need for educating the poor before they could effectively participate. For the intervening period, therefore, the preference was for a top down decision making process.
- g. Although there was a broad consensus that Bangladesh being a labour abundant country should convert its surplus labour into productive capital, in practice, the decision makers could not clearly prescribe the process through which this goal could be achieved.
- h. The banking system expanded in the rural areas quite rapidly in the 1970s and 1980s, yet heavy dependence of the rural poor on the informal sector (e.g. money lenders who charge high interest rates) continued strangulating their creative potential to contribute more to the national growth.

7.3.2 The inability to clearly formulate effective strategies to overcome the constraints made the provisions of "safety net" (e.g. food for works programmes, vulnerable group development programme, rural maintenance programme, etc.) a necessity rather than taking effective measures for income generating activities as the main vehicle for poverty alleviation. In the 1980s, however, the poverty alleviation efforts through income generating activities of some government agencies and NGOs multiplied but in most cases, their coverage and cost effectiveness remained low.

7.4 Strengthened Local Government Institutions

7.4.1 The present government, in compliance with the relevant fundamental principles of state policy, in pursuance of its commitments to the nation and in following generally the recommendations of the Local Government Commission, will establish a four-tier local government institutions at the village, union, upazila and zilla level. These institutions will be known as Gram Parishad (GP), Union Parishad (UP), Upazila Parishad (UzP) and Zilla Parishad (ZP). GPs will be established in each of the 9 wards of every union of the country, while UzPs and ZPs will be also established respectively in every upazila and zilla of the country; except that in the three zillas of the hill-tracts area where existing ZPs will, subject to some modifications following signing of the Peace Agreement for the hill tracts, continue to function. UPs have been strengthened following the recent fair and impartial election. City corporations and paurashavas have been functioning without interruption.

7.4.2 In fulfilling the commitment of the democratically elected government, each of the local level institutions will have well-defined and extended functions to carry out. The gram parishads, for instance, will participate in the preparation of development programmes/projects to be undertaken for increasing production; maintenance of rural infrastructure (e.g. feeder roads, bridges and culverts); development of local natural resource base; supervision of primary schools, madrasahs and makhtabs and motivation of guardians to send their wards to schools; creation of awareness about health and health care; implementation of drinking water supply projects, especially regarding the selection of sites for sinking tubewells; establishment of co-operatives/associations for carrying out socio-economic activities; collection and preservation of vital statistics like dates of birth and death, marriages, etc.; maintenance of law and order in the locality; undertaking socio-economic survey of households in all villages; etc. The gram parishads will keep the union parishads posted about their functions and problems. The local government institutions at other three levels will be entrusted with similar functions at varying levels of responsibilities and authorities, including the authority to raise resources for financing local level development activities.

7.4.3 Standing Committees for such fields as (a) law and order, (b) health and family planning, (c) agriculture, irrigation and environment, (d) education, social welfare, development of women and children, (e) sports, culture and youth development, (f) fisheries and livestock and (g) other fields as felt necessary will be established to assist the local government bodies at all levels in conceiving, designing, formulating and implementing local level development programmes/projects. Priority areas of development and resource mobilisation responsibilities and authorities will be indicated for the local level bodies.

7.4.4 Development of local government in this country brings in the concept of "devolution" vis-a-vis "deconcentration" of decision making power into sharp focus. Under a system of "decentralisation" based on deconcentration, the central government retains the decision making powers; only some responsibilities for implementation of the central decisions are given to the local authorities. In contrast, under a system of decentralisation that is based on devolution, it is the "decision making power" that is handed over to the local government institutions by the central government. Devolution establishes reciprocal and mutually benefiting relationships between central and local government implying that the local governments are not subordinate administrative units but exclusive authorities in their areas to be able to interact reciprocally with other units of government in the political system of which they are integral parts.

7.4.5 Genuine devolution must vest in various tiers/spheres of local government clearly following delineated administrative, judicial, financial and developmental roles as envisaged in Article 59 of the Constitution. Such devolution will not only contribute to good governance through rational sharing of powers and responsibilities between the central government and the local government bodies, but also lead to greater success in the management of development programmes/projects and better delivery of services through more efficient discharge of respective functions. Moreover, people's vote will be seen to be bearing fruits and democracy will be seen to be functioning at the door steps of the voters when they will witness that the representatives elected by them to the various tiers of local government are in fact contributing to the upliftment of their lot. Needless to say, such visibility is very vital for democratic culture to take desirably deep roots.

7.4.6 Enhanced Developmental role of Municipalities and City Corporations: In the context of its new vision of local government, the present government will entrust the municipalities and city corporations with enhanced developmental roles in their respective areas of jurisdiction. In providing civic amenities to citizens, these bodies, more often than not, depend on other agencies for building up infrastructural facilities and generation of utilities and other services. In a departure from this age-old practice, the present government will encourage and empower the municipalities and city corporations to undertake increasingly more development programmes/projects for catering to the needs of citizens. They will be called upon to monitor and oversee educational institutions as well as health and family welfare services facilities. To enable them to meet their increasing financing needs, these bodies will be empowered to mobilise and raise additional resources through broadening the existing base of taxation and issue of innovative saving instruments, including bonds and debentures. They will also be given the role of co-ordinators to co-ordinate amongst different service producers and service providers. Towards these objectives, a substantial share of powers and authorities of relevant ministries/divisions of the government will be delegated to the municipalities and city corporations.

7.5 Strategies for Participatory Planning During Fifth Plan

7.5.1 Alleviation of poverty and employment generation are the central objectives of the Fifth Plan. Given the market failure, the public sector must play the role of a catalyst in associating the vast segment of the populace who are under privileged and often are left out of the development process. Local level participatory planning, therefore, will start with building a mechanism where people, at large, specially in the vast expanse of the rural areas, will provide inputs to the planning process of the country; and people at the grassroot level, through conscientisation, consultation and participation, will get the scope to determine the local needs and priorities and integrate them into an overall planning exercise of the country through their elected local bodies.

7.5.2 Local government bodies, therefore, will be vested with roles and responsibilities with particular focus on (a) how these institutions can be made participatory so that they will enable the people in the local areas to provide inputs for planning; and (b) how through a process of bottom up planning the development programmes/projects of various tiers of local government as well as of the central government will be integrated. Towards these ends, the following strategies will be pursued:

- a. First of all, selection of an appropriate local level planning unit, either Zilla or Upazila will be made on a careful analysis of planning capacity available at such levels.

Following the decisions, Zilla Parishad or Upazila Parishad will assume responsibilities for preparing local level development plans spreading over time as well as drawing up annual resource use plans in line with the exercise done at the national level during the preparation of annual development programmes. One approach which may merit consideration is to take Zilla as the planning unit, Upazila as the key implementing agency for local level development programmes/projects and union parishads as the local operational and supervisory agency for projects implemented at local ambits. Functionaries of relevant government ministries/divisions/departments posted at the local levels will be placed at the disposal of Zilla Parishad/Upazila Parishad to provide necessary support and assistance in these exercises.

- b. Standing committees of local bodies formed at the relevant levels will be made operational. These committees will represent the various functional-cum-interest groups in village, union, upazila and zilla levels. They will be given the responsibility to initiate local level plans and programmes. The outline of the village plan will be prepared by the villagers themselves with focus on eradication of poverty among the hard core poor and generation of employment including self-employment. The members of the village committee may divide responsibilities of different sectors of development (education, agriculture, tree plantation, family planning and population control, etc.) among themselves according to the skills and clientele representations.
- c. The development actors, belonging to the four spheres of local government, may be suitably trained by academicians as well as development practitioners. The Academy for Rural Development at Comilla, the Academy for Rural Development at Bogra, the National Institute of Local Government (NILG), the Academy for Planning and Development of the Ministry of Planning as well as the Planning Commission can be pressed in to this end.
- d. The process of integration of the village, union, upazila and zilla plans will be as follows:
 - i. by December, Union Parishad will collect from Zilla and Upazila Parishads the list of expected projects/programmes of the central government and of NGOs which are relevant for the concerned areas;
 - ii. by March next, Union Parishads will integrate their own programmes and projects, based on the needs and priorities of the villages under the respective unions, with the projects and programmes of the central government and the NGOs through a series of consultative meetings with the local functionaries of the government and other concerned persons;
 - iii. at the upazila and zilla levels, these projects/programmes will be further scrutinised to fill up the gaps in both plan formulation and implementation strategies; and
 - iv. the actual implementation of these projects/programmes will start with a participatory process from July which is the beginning of the financial year.
- e. The process of organising the rural people and training them for development activities will be reinforced by legislative support where necessary (an example of such legislative action for development was embodied in the debt settlement legislation in the late 1930's that substantially freed the poor peasants from the clutches of the money lenders). For this purpose, the members of the Parliament can take initiative on their own or Gram Parishads, through respective Union Parishads, can give them a list for such actions.

- f. Preparation of local level development programmes/projects will be backed up by supportive studies/surveys such as; (i) preparation of inventories of manpower resources -- skilled and unskilled, with particular focus on women; (ii) preparation of medium and long-term employment plans based on available land, capital, fiscal and material resources for the respective locality/region; (iii) local level industrialisation plans with emphasis on small and cottage industries; and (iv) drawing up local/regional level resource use plans, with special attention to optimising the use of land, within the framework of the national resource use plan.
- g. The process of project preparation at the national level under the annual development programme will be guided by the constitutional mandate for ensuring basic needs (food, clothing, education, health and housing). Initiation of the local level planning with Union as the focal point, on the line suggested above, will lead to the integration of the bottom up and top down planning process.
- h. A number of monitoring and evaluation teams will be set up at appropriate levels of the planning and administrative tiers to monitor and evaluate the local level development programmes/projects with respect to their impact and cost effectiveness so that their qualities and implementation efficiencies can be improved in subsequent periods.

7.5.3 The process outlined above will be refined through a process of trial and error. At the beginning, the following steps will be in order to make the process more effective:

- a. Identify the reasons for failure of self-governing local government institutions in the past.
- b. Accept Union Parishad as the focal point of local government institutions as a necessary but not the sufficient condition for promoting bottom up planning. To meet sufficient conditions, steps will be taken to:
 - i. promote devolution of decision making power in favour of the local government bodies in areas that concern them most and make them simultaneously accountable to their electorates;
 - ii. support this process through a system of social mobilisation, consultation and training that will enable the people at the grassroots to prepare and also implement (where possible) a bottom up plan through popular participation and community organisations; and
 - iii. provide a mechanism through which this process of preparing and implementing the bottom up plan can be linked/integrated with the different tiers of development administration so that the local level development plans are functionally integrated into national level sectoral plans.
- c. Allocate more resources to the restructured and reoriented local government bodies from the development budget of the central government with focus on human resource development and poverty alleviation.
- d. Understand that there has to be an effective equalisation of opportunities in favour of the relatively poor, if the group is to be brought into the mainstream of economic activity.
- e. Reorient all financial institutions and the government and non-government agencies involved in credit intervention in favour of the poor so that the poor receive adequate resources through innovative programmes at reasonably easy terms for required time

period; a reorientation of financial institutions and credit agencies will (i) make the monetary sector more responsive to societal needs ; (ii) ease the present excessive reliance on fiscal measures for resource mobilisation; (iii) motivate and activate the informal sector for greater contribution to development; and (iv) raise the growth rate through additional capital formation in the economy. Promotion of local level planning is expected to facilitate the process of this orientation of financial institutions and agency in a mutually reinforcing manner.

- f. Undertake massive training of government officials, peoples' representatives and other social workers in participatory bottom up planning.
- g. Institutionalise the process of conflict resolution particularly in important fields of (i) top down versus bottom up processes of planning; (ii) deconcentration versus devolution of power in favour of the local government bodies; (iii) allocation of development funds through sectoral plans versus district plans; (iv) incentive structures favouring the relatively more efficient versus inefficient groups and sectors; and (v) promotion of growth through structural adjustment reform programme without disregarding social responsibility. The most optimistic element in the field of conflict resolution is expected to be the "strategy of popular participation" because if it is allowed to find its own course, it is expected to generate its own dynamics of conflict resolution through a continuous process of dialogue and consensus.

CHAPTER VIII

POVERTY ALLEVIATION EMPLOYMENT AND HUMAN RESOURCES DEVELOPMENT

8.1 Introduction

8.1.1 The economy of Bangladesh with a large and rapidly growing population and low per capita income reveals conditions of abject poverty for the majority of the people. The task of poverty alleviation with the ultimate aim of its eradication is a challenging one.

8.2 Trend of Poverty

8.2.1 Broadly speaking, poverty refers to forms of economic, social and psychological deprivation occurring among people lacking sufficient ownership, control or access to resources for minimum required level of living. The low level of human resource development in Bangladesh is a serious constraint to the development process of the country. Measured in terms of the Human Development Index (HDI) by UNDP in 1996, out of 174 countries Bangladesh ranked 143rd in 1993. It gave a value/score of 0.365 for Bangladesh. For some of our neighbouring countries the scores were 0.698 for Sri Lanka, 0.442 for Pakistan, 0.436 for India, 0.451 for Myanmar, 0.332 for Nepal and 0.307 for Bhutan. Thus among the neighbouring countries the HDI for Bangladesh was slightly better than Nepal and Bhutan.

8.2.2 The profile of human deprivation (UNDP, Human Development Report, 1996) for 1993 revealed that 47.5 per cent of the people of Bangladesh were income-poor (head count index) while 76.9 per cent were capability-poor (capability poverty reflects the percentage of people who lack basic or minimally essential human capabilities considered as the capability to be well nourished and healthy, capability for healthy reproduction and capability to be educated and knowledgeable). This report posited that 52.85 per cent of people were without access to health services, 63.35 per cent were without sanitation and 26 per cent of children were not attending primary school. Regarding the trend in human development in Bangladesh this report revealed that life expectancy at birth was 39.6 years in 1960 and 55.9 years in 1993; infant mortality rate per thousand live births, 156 in 1960 and 106 in 1993; under-weight children as percentage of children under 5, 84 in 1975 and 66 in 1990; adult literacy rate, 24 per cent in 1970 and 37 per cent in 1993 and gross enrolment ratio for all levels (age 6-23), 30 per cent in 1980 and 32 per cent in 1990.

8.2.3 There have been discernible improvements in some of these social indicators in very recent years. In 1995 life expectancy was 58 years ; gross primary enrolment ratio, 92 per cent; adult literacy 47.3 per cent; infant mortality rate per thousand live births 78; and death of children per thousand before reaching the age of 5, 9.7 compared with 14 in 1991.

8.2.4 Narrowly defined, poverty is generally measured by the percentage of population having income below the minimum expenditure required for meeting the basic needs. A benchmark of the poverty situation in rural Bangladesh was worked out in 1977 classifying absolutely poor as those who could not take more than 90 per cent of the recommended calorie intake and extremely poor as those who could not take more than 80 per cent of the requirement (A. R. Khan, 1977). Poverty line - I is defined as daily intake of 2122 k. cal per person and poverty line - II which is extreme poverty is defined as daily consumption of 1805 k. cal per person.

8.2.5 Poverty is widely recognised as a multi-dimensional problem involving income, consumption, nutrition, health, education, housing, crisis-coping capacity, insecurity, etc. However, with the exception of income (consumption) measure, long-term trend in other dimensions of poverty is difficult to measure due to paucity of data. Focus is therefore on the income dimension of poverty supplemented by available evidences relating to its other dimensions.

8.2.6 The Household Expenditure Survey (HES) shows a modest improvement in poverty by head count since the early eighties. The incidence of poverty at the national level has declined from 52.3 to 49.7 per cent during 1984-92. The urban head count of the poor has declined from 40.9 to 33.6 per cent, while the corresponding figure for the rural area dropped from 53.8 to 52.9 per cent. This suggests a faster poverty reduction rate in urban areas than in the rural. Data officially collected for a Poverty Monitoring Project (BBS) indicate that the incidence of rural poverty stood at about 48 per cent in early 1995 which was about 5 percentage points lower than the level prevailing in 1991/92 as per HES.

8.2.7 The declining trend in income-poverty during the first half of the nineties is corroborated by other sources of data. Panel data collected over 1987-94 for a large scale survey (BIDS) show that the proportion of rural poor fell from 57.5 per cent in 1987 to 51.7 per cent in 1994. An important factor behind the improvement in rural economic conditions has been the reduction in growth of rural population due to rapid rural-urban migration coupled with the reduction in natural growth of population. It reveals a spatial shift in the incidence of poverty.

8.2.8 The early nineties has also witnessed improvement in terms of alleviating extreme poverty (BIDS). The incidence of hard-core poverty (corresponding to less than 80 per cent of minimum calorie needs) has registered a decline from 26 to 23 per cent during the 1987-94 period. This is in line with other evidences in respect of household access to bare necessities such as shelter and clothing. The proportion of rural households living in extreme vulnerable housing, i.e., jhupri, has fallen from 9 to 2 per cent during 1990-95. Those without minimum clothing (having less than two sets of clothing) has declined from 15 per cent in 1990 to 4 per cent in 1995. The proportion of rural population without winter clothing also dropped from 22 to 7 per cent during the same period.

8.2.9 Such trends notwithstanding, several areas of medium and long-term policy concerns can be identified. First, the pace of improvement in the poverty situation is rather slow. The average annual reduction in head count poverty was about one percentage point since the mid-eighties which is much lower than the comparable record of 2-3 percentage points achieved in East and South East Asian countries. This suggests the need for not only targeting a much higher and sustained growth rate in average incomes, but also making the growth process sufficiently broad-based, i.e., facilitating the active participation of the poor as agents of growth. Second, the measure of progress recorded in income-measure of poverty has not been equally matched by concomitant improvement in several crucial dimensions of poverty such as crisis-coping capacity, improved access to quality health care, etc. Average annual income erosion per rural household arising out of various crisis-events (such as natural disaster, health hazard, death of earning member, etc.) constitutes about 16 per cent of household income; for the extreme poor, the corresponding figure is as high as 27 per cent. Lack of adequate risk-insurance mechanism coupled with limited public health care underlies such a high burden of income erosion on the poor. This is true for the urban poor as well. The

urban poor who move up the income ladder after migrating to urban areas may actually experience deterioration in other dimensions of poverty such as lack of adequate shelter, sanitation, personal security, active community life, etc. Third, after every statistical adjustment has been made, the challenge of poverty in Bangladesh remains a monumental one with nearly 50 per cent of the rural population living in poverty of which approximately half are in extreme poverty. The sheer magnitude of poverty, particularly extreme poverty is staggering. More concerted efforts need to be undertaken in this regard involving direct capability-raising programmes through public education and health as well as safety net programmes, particularly for the poorest.

8.3 Movement In and Out of Poverty

8.3.1 All poverty alleviation efforts have been singularly concerned with the poor over time. The dynamic process of impoverisation is however more complex than caring for the poor. There are movements across the poverty lines (BIDS: 1996). In fact, relatively more people moved into the extreme poverty level from above than from the latter group, apparently resulting in polarisation of the non-poor and the extreme poor in the rural areas. In 1989/90, BIDS sample shows that the extreme poor group constituted 16.7 per cent, excluding households (18.3 per cent) who fluctuated between moderate poverty and extreme poverty, while 44.6 per cent were non-poor. In 1994, 17.6 per cent were in extreme poverty (excluding fluctuating group). The corresponding percentage of the non-poor was 45.6 per cent. Relatively more people also crossed into the group of the non-poor with the moderate poor being proportionately less (20.4 per cent in 1989/90 to 18.3 per cent in 1994). This movement from the moderate group is indicative of improvement in absolute poverty, while extreme poverty seems to be growing.

8.3.2 This movement has been caused by unredeemed pressure on land due to inadequate non-farm employment opportunities, consequent increase in marginal farming, frequent natural calamities and above all, fluctuations in sluggish economic growth.

8.4 Causes of Poverty

8.4.1 The major causes of poverty in Bangladesh are low economic growth, inequitable distribution of income, unequal distribution of productive assets, unemployment and under-employment, high rate of population growth, low level of human resources development, natural disasters and limited access to public services.

8.4.2 Low economic growth: High growth rate is conducive to efficiency and poverty alleviation, as is evident from the experience of the high performing Asian economies which have consistently achieved annual growth rates of 7 to 8 per cent. In contrast, during the past two decades, Bangladesh economy has suffered from low GDP growth of 4 to 5 per cent. This was too low a growth to lift the population, particularly the poor, to a higher level of living. According to a 1996 CPD (Centre For Policy Dialogue) study if per capita income were to grow at a rate of 4 per cent per year then it would take an average poor person 13 years to be lifted out of poverty. For an extremely poor person the time will be 23 years. Many may hasten to add that growth per se is not poverty-reducing. But it is a necessary condition though not sufficient. Growth, poverty and inequality are consequences of public policies. If growth is based on appropriate policies inclined towards poverty alleviation, it has the potential to reduce poverty. Participating in and contributing to such development/growth processes, the poor may improve their situation.

8.4.3 Inequitable distribution of income: The pattern of income distribution in the rural areas of Bangladesh reflects deteriorating economic situation of the poor. It indicates that the share of income accruing to the bottom 40 per cent of the rural households deteriorated slightly in 1991/92 (18.96 per cent) compared to 1983/84 (19.24 per cent). The income distribution pattern also indicates that the top 5 per cent of rural households enjoyed 17.8 per cent of the income in 1991/92. The income distribution is presented in Table 8.1.

Table 8.1
Bangladesh: Income Distribution

Residence	1983/84	1985/86	1988/89	1991/92
1	2	3	4	5
Income accruing (per cent) to bottom 40 per cent households				
Bangladesh	18.95	19.35	17.53	18.44
Rural	19.24	19.95	18.02	18.96
Urban	17.87	19.20	17.52	18.68
Income accruing (per cent) to top 5 per cent households				
Bangladesh	18.30	21.36	20.51	18.85
Rural	18.14	21.36	19.81	17.80
Urban	16.93	18.04	20.02	19.42
Gini ratio				
Bangladesh	0.36	0.37	0.38	0.39
Rural	0.35	0.36	0.37	0.36
Urban	0.37	0.37	0.38	0.40

Source : BBS, 1993

8.4.4 Unequal distribution of productive assets: Since land constitutes the main component of the physical capital of the economy, particularly in the rural areas, and is one of the major determinants of rural income, unequal ownership of, and access to land is of particular relevance to analysing rural poverty. Available data (BBS) indicate the presence of considerable inequality in the distribution of rural land ownership. In 1983/84 according to the Agricultural Census, 79.88 per cent of the rural households were in the group of small farms (0.05 - 2.49 acres of land), 16.27 per cent in the medium group (2.5 - 7.49 acres) and 3.85 per cent in the large group (7.5 + acres). In 1991/92 according to HES (BBS) the figures for these groups were 66.64 per cent, 12.66 per cent and 3.13 per cent respectively. These show some improvement in land ownership distribution. About access to land which is defined in terms of operating size of farms, in 1983/84, 70.34 per cent of the total farm households were in the small farm group covering 28.98 per cent of the total farm area; 24.72 per cent, in the medium farm group covering 45.09 per cent of the total farm area; and 4.94 per cent, in the large farm group with 25.93 per cent of the total farm area. Thus while less than one-third of the farm households (medium and large farms) operated more than two-thirds of the farm area, more than two-thirds of the farm households (small farms) operated less than one-third of the total farm area. But access to land through tenancy arrangement was very limited in 1983/84. Only 8.26 per cent of operating farm households were accounted by households who owned no land, but most of them operated very small farms. About 86.24 per cent of them operated less than half an acre and 91.7 per cent less than one acre. Though land is the most valuable physical capital for the rural economy, non-land resources like

technologies, skills and credit are gaining importance. But the poor have limited access to these for lack of education.

8.4.5 Unemployment and under-employment: Unemployment and under-employment are essentially at the root of poverty. The unemployment and under-employment situation is presented in Tables 8.2 and 8.3.

Table 8.2
Unemployed Population Aged 10 Years and Over

Locality	Both Sex		Male		Female	
	No. of unemployed* population ('000)	Unemployment rate	No. of unemployed population ('000)	Unemployment rate	No. of unemployed population ('000)	Unemployment rate
Bangladesh	1417	2.5	931	2.7	486	2.3
Urban	455	4.5	324	4.4	131	4.6
Rural	962	2.1	607	2.2	355	1.9

Source : BBS, Labour Force Survey (LFS) 1995/96

*A person of age 10 years and over is considered as unemployed if he/ she did not work at all during the preceding week of survey and was actively looking for work or was available for work but did not work due to temporary illness or because there was no work available.

Table 8.3
Under-employed Population Aged 10 Years and Over

(million)

Category	Bangladesh			Urban			Rural		
	Both Sex	Male	Female	Both Sex	Male	Female	Both Sex	Male	Female
Employed persons*	54.5	33.7	20.8	9.7	7.0	2.7	44.8	26.7	18.1
Employed persons (<35 hrs/week)	18.9	4.2	14.7	1.9	0.7	1.2	17.0	3.5	13.5
Under-employment rate**	34.6	12.4	70.7	19.6	10.0	44.4	37.9	13.1	74.6

Source : BBS, Labour Force Survey (LFS) 1995/96

* Employed person is a person who was either working one or more hours for pay or profit or working without pay in a family farm or enterprise or organisation during the reference period or found not working but had a job or business from which he/she was temporarily absent during the reference period.

** Those who worked less than 35 hours per week as percentage of the total number of employed population.

8.4.6 The total civilian labour force (10 years and over) in Bangladesh was 56 million in 1995/96 (male 34.7 million, female 21.3 million; rural 45.8 million, urban 10.2 million). Considering the size of the labour force, the number of unemployed population vis-a-vis unemployment rate may not appear significant. What is significant is that more than one-third of the employed persons both at the national and rural levels are under-employed. It is also highly significant that under-employment is much higher in the female population than that in the male population at both the national and rural levels.

8.4.7 Unemployment among the educated youth is one of the major problems in Bangladesh. The educated labour force in 1995/96 was 24.7 million and educated unemployment rate about 4.4 per cent (LFS, 1995/96).

8.4.8 Besides unemployment and under-employment, an understanding about the employment and wage situation is necessary for formulation of a strategy for improving the situation of the

poor. Employment opportunities constitute a major factor in determining income-status of a household. Average days of employment per household may be similar across income groups though they vary in terms of type of employment. It was noticed in a BIDS report that wage employment accounts for only 26 per cent of total employed days among the non-poor whereas for the extreme and moderate poor group it stands at 59 and 44 per cent respectively. Self-employment accounts for the remainder.

8.4.9 Positive changes in income status increase economic opportunities. A BIDS report of 1996 indicated that employment increased by 36 per cent for the non-poor relative to 27 per cent for the extreme poor and only 22 per cent for the moderate poor. The poor still work a lesser number of days in self-employment than the non-poor and wage rate of the non-poor is higher than that of the poor. The extremely poor households increased their share of self-employment over time which should have meant an improvement of their situation. But indirect evidence suggests that the shift may have been to low productivity jobs because of lack of access to capital, technology, credit and capacity to invest in education. It caused substantial erosion of earning for many extremely poor persons over the early nineties. Productivity increases as well as better employment prospects are necessary for improving the situation of the poor.

8.4.10 High rate of population growth: The size of the population would not have been a major concern if sufficient development were achieved to improve the quality of life. But the slow growth of the economy in the past coupled with relatively high rate of population growth and high dependency ratio of population exerted a direct and negative pressure on development and poverty alleviation. The latest census (1991) shows an annual population growth of about 2.17 per cent (1981-91) which is an improvement on the annual growth of about 2.35 per cent during 1974-81. Although the current growth rate is below 2 per cent, it is still high as there is a lack of complementary resources with which the growing labour force can be productively utilised. The success in controlling population growth in recent years will have little impact on the growth of labour force in the short and medium run as the new entrants into the labour force during the next five years are already born.

8.4.11 Low level of human resources development: It is now recognised that human resources development through education, better health and family welfare makes important contribution to poverty alleviation. Even with low calorie intake, the provision of these services and facilities can make the poor better-off and facilitate their graduation from poverty.

8.4.12 Education is considered as the best investment in human resources development. Low income countries get high rates of returns by investing in education. Female education, family planning and welfare services contribute to decline in infant and maternal mortality and improve maternal and child health by allowing spacing of births. Better sanitation and access to clean water reduce infection, boost nutritional status and contribute to better health. A healthier population can be more productive and generative of higher income which can lead to improvement in the quality of life of the people.

8.4.13 As a result of increasing emphasis on human resources development and increased allocation in recent years some improvements in human resources development have been achieved as can be seen in Table 8.4.

Table 8.4
Improvements in Human Resources Development

Indicator	Year	
	1991*	1995
1	2	3
Total fertility rate per woman	4.3	3.4
Crude birth rate per thousand population	32	27.5
Crude death rate per thousand population	13	9
Infant mortality rate per thousand live births	92	78
Maternal mortality rate per thousand live births	4.7	4.5
Contraceptive prevalence rate (%)	40	48
Life expectancy at birth (National)	56.1	58
Access to safe drinking water (% of population)	80	96
Population per hospital bed	3205	3453
Population per physician	4526	4870
Access to sanitary system of latrines (% of population)	9	35.3
Adult literacy rate (National)	35.3	47.3
Gross primary enrolment ratio (6-10 years, National)	76	92

*BBS

8.4.14 There still remains a great necessity for substantial improvements in various aspects of social/human resources development which will provide substantial economic benefits over the long term by improving labour productivity and accelerating the adoption of improved technologies. Achieving these objectives, however, requires a long term commitment to allocate more funds to human resources development programmes to make them sustainable.

8.4.15 Natural disasters: Natural disasters like floods, cyclones and droughts aggravate poverty in two ways : through destruction of food stocks and whatever meagre assets the households on the margin of poverty have and by making employment opportunities scarce. While natural disasters of a moderate proportion in limited areas tend to cause or aggravate impoverishment, disasters of severe magnitude covering larger areas may cause famine. Furthermore, diseases, injuries and afflictions immediately after disasters drastically reduce the capacity of the poor to cope with adverse circumstances. The frequency and magnitude of natural disasters in Bangladesh have been more unfavourable to the economically disadvantaged than to others. In the absence of safeguards against these sudden shocks, rural households above the threshold poverty line are prone to be pulled down and those who are already below it experience further slippage. Cyclone in Bangladesh is almost a regular feature. The entire coastal belt as well as inland areas experienced cyclones, which often produced surges or high tidal waves causing severe loss of lives, standing crops and other properties.

8.4.16 Access to public services: One of the major reasons of poverty is limited access to public services. There are a number of government agencies for service delivery at various tiers of administration and local governments (divisions, districts, thanas and unions). The

public service delivery system suffers from inadequate allocation and supplies, lack of accountability, lack of motivation on the part of the service providers, on the one hand and from the absence of effective "cliente" organisations on the other. As a result the public service delivery structure has remained largely ineffective and inefficient. The World Bank Study on Poverty and Public Expenditure shows that benefit of expenditures in social sectors largely accrue to the poor people but since the level of expenditure is not high, benefit is limited. The recent trend for higher allocation for health and education will definitely help the poor. Access to public services can increase on a sustained basis through properly functioning representative government. The basis for this was laid through setting up the democratically elected government in June 1996.

8.5 Past Efforts

8.5.1 The problem of acute poverty caught the attention of successive governments and programmes were chalked out to tackle the problems. The scheme for intervention in the First Five Year Plan envisaged both production and institutional programmes for development with special focus on rural development and equitable distribution of benefits of development. It visualised a need for restructuring institutions to meet the problems of organising the rural people, utilisation of resources and development of local planning system. The Second Five Year Plan aimed to reduce poverty through participation of the rural poor within an expanded programme for development. However, certain major constraints impeded the institutional development in this respect. The Third Five Year Plan also aimed at reducing poverty by ensuring better access of the rural poor to the means of production through providing facilities in such areas as development of agriculture, basic physical infrastructure, employment and production programme for the rural poor at the micro-level and social service needs. All these programmes met with limited successes. The Fourth Five Year Plan intended to pursue an employment oriented growth policy to promote employment opportunities for the rural poor in both farm and non-farm sectors of the economy. Human resources development was also given high priority during the Fourth Plan .

8.5.2 In order to overcome crises and to get sustained long term growth Bangladesh started implementing wide ranging reforms under Structural Adjustment (SA) package since 1980s. But alongwith promotion of flexibility and efficiency Bangladesh needs to take care of the initial adverse impact of the structural adjustment policy on the poor. Higher levels of investment in macro-economic growth process affected the disadvantaged group as there is a trade-off between faster growth and distribution. The government started promoting targeted income and employment generating programmes as a 'development safety net' for the poor who survived below market level and are left out of market-based production and distribution processes.

8.5.3 Annual Development Programmes (ADP) used to finance a good number of projects in agriculture, rural development and social sectors to alleviate poverty. Bangladesh Rural Development Board (BRDB) is the most prominent and potential government organisation in respect of poverty alleviation. BRDB operates micro-credit funds for poverty alleviation. Upto March, 1997 BRDB enrolled 1.553 million poor and disbursed Tk.6,643.7 million as credit under the poverty alleviation programme for production and employment for the rural poor.

8.5.4 Palli Karma Shahayak Foundation (PKSF) was set up by the government in 1990 and its revolving credit fund created through ADP allocation and grant from Revenue Budget

provides income generating employment opportunities, particularly for the rural poor women. PKSF disbursed total loan amounting to Tk. 1099.59 million covering 9229 villages in 51 districts of the country upto June 1996. Besides these, wide ranging packages funded from ADP include credit programmes, training, counselling, infrastructure development, health services, etc. Also specific programmes on rural poverty and urban poverty have been taken up in ADPs.

8.5.5 Safety Net Programme of Food for Works (FFW) provides employment to the rural poor during lean periods through construction of rural infrastructure. Six thousands FFW schemes generating employment of over 70 million man days were implemented since late seventies. More recently, a Food for Education Programme was launched with the aim to encourage the distressed families to keep their wards in primary schools. Vulnerable Group Development Programme (VGDP) which is predominantly a relief operation was also introduced. This programme is designed to reach over 85,000 beneficiaries exclusively headed by destitute females. In recent times this programme for destitute women is trying to move from its role of relief provider to a larger development role like providing agriculture and health care training to women beneficiaries. However, the volume of foodgrains channelled through FFW and VGD declined in absolute terms from 716 to 640 thousand tons during the period between 1991/92 and 1995/96. This had a negative impact on the extreme poor. Another important poverty alleviation project named Rural Maintenance Programme (RMP) is being implemented through the monetisation of Canadian food aid since 1983. RMP (phase-III) is now being implemented by LGED, Ministry of Local Government, in collaboration with CARE. Under this programme approximately 82,000 kms. of rural earthen roads will receive year round routine maintenance in 4,100 unions and provide employment to approximately 41,000 destitute women.

8.5.6 Besides government programmes, a large number of NGOs are also engaged in activities for socio-economic upliftment of the rural poor. Some of these NGOs, in terms of both beneficiary coverage as well as investment, have the ability to reach the poor and address the issues of poverty alleviation effectively. Among the NGOs major ones are BRAC, PROSHIKA, ASA, GSS, RDRS, etc. A number of commercial banks (Sonali Bank, Janata Bank, Agrani Bank, Bangladesh Krishi Bank, Rajshahi Krishi Unnayan Bank) have also participated in poverty alleviation programmes through providing micro-credit to the landless and small farmers. Grameen Bank has so far disbursed Tk.72.45 billion (as in Feb. 1997) inclusive of general and collective loan of Tk. 66.87 billion and housing loan of Tk.5.58 billion. As in March 1997, total number of beneficiaries of Grameen Bank figured at over 2 million people.

8.6 SAARC and Poverty Alleviation in Bangladesh

8.6.1 The Dhaka Declaration for Poverty Eradication under the Seventh SAARC Summit Meeting of the Heads of State/Government of SAARC countries held in April, 1993, stipulated that each SAARC country would prepare a pro-poor plan and an action programme for implementing it for eradicating hard-core poverty by the year 2002 A.D.

8.6.2 In the light of Dhaka Declaration (1993), a Task Force for Preparation of a National Pro-poor Plan and Action Programme was set up by the Government of Bangladesh.

8.6.3 The Task Force started its work with the following directions embodied in the Dhaka Declaration :

- a. Each SAARC Country should produce a national poverty eradication plan to eradicate poverty in the country, preferably by the year 2002.
- b. The main agenda of action under the national poverty eradication are :
 - i. the strategy of social mobilisation involving the organisation of the poor and their empowerment through appropriate national support mechanism;
 - ii. a policy of decentralised agricultural development and sharply focused household level food security for meeting the basic nutritional needs;
 - iii. a policy of decentralised small scale labour intensive industrialisation with the choice of efficient and cost-effective technology; and
 - iv. a policy of human development directed towards the enhancement of social role and status of the poor women, protection of children, provision of universal primary education and primary health care and shelter for the poor.
- c. The above endeavours are to be supported by adequate financial resources.
- d. Finally, the national pro-poor plan has to be harmonised with the open economy and structural adjustment strategies.

8.6.4 The Task Force held a series of meetings and critically examined a number of poverty alleviation activities and found that there are at present 36 projects under different Ministries/Agencies specifically for poverty alleviation and human development which can reach the poor, particularly the hard-core poor.

8.6.5 The pro-poor development effort was re-inforced subsequently by the recommendations of the Eighth SAARC Summit Meeting at New Delhi in May 1996. The Delhi Declaration provided opportunity to link the efforts for poverty eradication through social mobilisation with the experiences of different SAARC countries. Bangladesh responded positively to the challenge of organising the poor through a process of social mobilisation as the poor were accepted to be efficient and creative. In this process it accepted private organisations as desirable partners in such efforts that bring creativity of the poor in the mainstream of development planning.

8.7 Social Summit

8.7.1 Poverty alleviation was also the main issue of the Social Summit held in Copenhagen in March, 1995. As a follow-up to the Summit, the Government of Bangladesh established a 37 member national committee to provide leadership in the formulation and implementation of the National Programme of Action aiming at fulfilling government's commitment towards the Declaration of the Summit within the framework of the country's next Five Year Plan (1997-2002). The committee chaired by the Secretary, Planning Division, has drawn representatives from all sectors of society including representatives from relevant ministries, departments, directorates, NGOs, research organisations, women organisations and Federation of Bangladesh Chambers of Commerce and Industry. This committee has been charged with the responsibilities to formulate a co-ordinated National Programme of Action in line with the Copenhagen Declaration and to monitor the implementation thereof.

8.8 Micro-credit Summit

8.8.1 In the World Micro-credit Summit held in Washington during February 1997 micro lending was endorsed as the right answer to the problem of rural poverty. The micro-credit campaign has succeeded in focusing world attention to the fact that the scale of poverty in the developing world is so deep and widespread that nothing short of a "missionary approach" can alleviate it. While this has also created world-wide awareness about the importance of

institutional lending to the poor for creating self-employment opportunities, the financial resources required to fund the micro-credit programmes on a large-scale need to be raised through joint efforts at both the national and international levels. Bangladesh has conceived the idea of micro-credit as an efficacious instrument of poverty alleviation and has successfully implemented the scheme through Grameen Bank, BRAC, PROSHIKA and a number of other NGOs and government organisations recognising that the poor are not liabilities but assets; they can save and contribute creatively even with their low income when organised. Grameen Bank concept developed in Bangladesh has been replicated in as many as 45 countries including the United States. The commitment announced in the micro-credit summit for international co-operation in this field can make significant contribution to further strengthening and sustaining the ongoing programmes of Bangladesh by augmenting the required credit fund.

8.9 Pro-Poor Plan for Alleviation of Rural Poverty

8.9.1 Objectives: The factors that facilitate poverty alleviation are by this time widely known. At the same time the efficacy of various institutional frameworks, their limitations and the extent of complementarity are also becoming common knowledge. The aim of a pro-poor plan is to improve the economic conditions of the poor and human resources development. Given the magnitude of the problem the pro-poor plan envisages that the pace of poverty eradication will accelerate and there will be significant reduction in poverty during the Plan period. The objectives of the pro-poor plan will be to:

- a. develop democratically elected local government bodies with appropriate representation of women;
- b. develop human resources with adequate provisions to expand and strengthen education, health, population planning and family welfare facilities, measures and services;
- c. link the rural poor with basic social services/institutions in the fields of education, health, population planning, family welfare, drinking water supply, sanitation, etc.;
- d. increase gainful income generating activities and employment opportunities on a sustained basis for the rural poor;
- e. strengthen small scale and informal sector production;
- f. promote social mobilisation defined in terms of building organisations of the poor at grass-root level to enable them identify their problems themselves, make their own development decisions, particularly in areas which concern them most, and articulate these with the relevant government agencies for necessary economic, technical, administrative, financial and other supports in form of projects;
- g. improve technology and skill as significant elements of human resources development for productive activities of the rural poor;
- h. upgrade technical skills to enable workers to adapt to rapidly changing international conditions;
- i. provide the rural poor with better access to resources, especially to micro-credit which is critically important and has high poverty reduction potentials;
- j. raise savings/capital formation by the poor to a greater volume so as to stimulate and enhance growth from the bottom;
- k. give particular attention to the development of hard-core rural poor and poverty-depressed rural areas ;

- l. promote participation and development of the poor and disadvantaged women and female-headed households alongwith males;
- m. empower the poor through affirmative activities and participation in the local government institutions;
- n. maximise impact of the pro-poor plan through an efficient delivery system minimising administrative and organisational expenditure; and
- o. review policies and regulations that affect the poor and reform the same, if necessary, based on the review.

8.10 An Indicative Strategy for Poverty Alleviation During Fifth Plan

8.10.1 Growing reliance on the market in resource allocation is the main characteristic of the Fifth Plan. The Plan, however, recognises that because of market failures there is a need for government intervention in the area of poverty alleviation.

8.10.2 Human resources development: In the Fifth Plan period allocation to social sectors will be adequately increased, while maintaining the necessary financial and fiscal discipline. Programme coverage will be increased through expansion of existing successful projects and launching new projects in education, health, family planning, family welfare, social services, women development, youth development, drinking water supply, sanitation, etc. Measures will be taken to improve the quality of services in these sectors so that additional expenditure will be utilised in a cost-effective manner. Alongwith general education, there will be emphasis on technical education and skill training to produce a greater number of skilled workers. Export oriented industries such as electronics, garments, dolls, computer data entry, etc. will be set up in rural areas to provide large scale employment opportunities.

8.10.3 Economic development of the poor: The basic element in the programme towards poverty alleviation is creation of employment opportunities. One of the major objectives of the Fifth Plan will be generation of substantial gainful employment opportunities with increase in productivity through an optimal choice of traditional labour intensive and new generation technologies. The Fifth Five Year Plan envisages to increase total employment from about 50 million persons in 1996/97 to 56.3 million persons. The employment projection of the Fifth Five Year Plan is given in Table 8.5.

Table 8.5
Employment Projection for Fifth Plan

Sector	1996/97	2001/2002
Agriculture	31,500	33,382
Industry	3,700	5,847
Power, Gas, Natural Resources	105	215
Physical Planning, Housing and Construction	1,034	1,196
Transport & Communication	2,238	2,626
Trade & Other Services	11,423	13,079
Total	50,000	56,345

8.10.4 The pro-poor plan will create self-employment opportunity for the rural poor, mainly through targeted production and employment programmes and increase in wage employment opportunities through rural infrastructure building and maintenance.

8.10.5 In the Fifth Plan rural development has been accorded priority (more than 10 per cent of the total public sector outlay) for reduction of rural poverty. The major objectives of the production and employment programme for the rural poor will be (a) increase in production in both farm and non-farm sectors; (b) generation of self-employment opportunities; (c) increase in income through productive income-generating activities; and (d) human resources development, mainly through training.

8.10.6 The production and employment programme will be developed as a package consisting of (a) organisation/social mobilisation of the targeted poor into formal and/or informal groups; (b) dissemination of technology and training; (c) micro-credit for income-generating activities; (d) capital formation through shares/savings; and (e) market information and promotional activities.

8.10.7 The assetless/landless and functionally landless, owning not more than 0.5 acre of land and small farmers owning land upto 1.5 acres will be the target groups under the production and employment programme. Both men and women will be covered at an approximately equal ratio. Besides them, the non-poor who are marginally above the poverty line with the risk of sliding down the line as a result of any sudden economic pressure will also be included in the production and employment programme for enhancement of their economic conditions.

8.10.8 The major focus of poverty alleviation programme in the urban areas will be as follows: (a) education, as studies show that it has a positive impact on income generation, particularly in the case of non-slum households; in the case of permanent migrants, skill training will be a major means of income generation; (b) access of the urban poor to non-land assets will be improved through targeted public/NGO programmes as well as through generation of self-employment opportunities; and (c) improvement of living conditions in the slums by providing facilities for pure drinking water, electricity, gas, etc.

8.10.9 During the Fourth Plan the average GDP growth rate was 4.1 per cent. This was too low a growth to lift the population, particularly the poor, to a higher level of living. A higher growth has, therefore, been targeted for the Fifth Five Year Plan. To achieve the target there is a necessity to make the growth process broad-based. In view of this, more resources will be diverted to the poor. The past experiences in Bangladesh have established that the poor are efficient and relative to their income they have a higher rate of savings; if they are organised into functional groups and are given financial supports through simplified procedures, they will generate a dynamic process of capital accumulation (e.g. Grameen Bank's experience). The diversion of more resources to the poor will facilitate their active participation as agents of growth.

8.10.10 Existing successful targeted poverty alleviation programmes/projects will be continued and expanded. Coverage will be quantitative as well as qualitative. At the same time in the expanded phases care will be taken for corrective measures in their institutional arrangements, if warranted, for more effective implementation.

8.10.11 Among major programmes, safety net programme of FFW will need to be reformed. Besides, its focus on lean season survey results show that economically poor areas still do not get preferential access to these programmes. Such programmes will need to be adjusted to make their operation sensitive to special needs of the poor areas.

8.10.12 Evidences suggest that safety net programmes do not reach the poor during period of most acute need i.e. September-October period which is the wet post-monsoon season. The current portfolio of FFW projects will need to be changed in favour of a mix that allows greater flexibility in selecting projects during this season. A shift towards maintenance project and environment protection are feasible options. It may also be useful to move from providing Food for Works to Cash for Work, to provide greater flexibility over both the choice of projects and commodities for consumption .

8.10.13 In addition to the successful existing projects, new targeted pro-poor production and employment projects based on social mobilisation will be taken up. The new projects will pay particular attention to the hard-core poor. The new projects will aim at poverty reduction of the rural poor by sustained increase in productive employment, particularly self-employment opportunities in nutrition-oriented activities like animal husbandry, fisheries, poultry, horticulture and in various non-farm activities having potentials of better economic returns.

8.10.14 The pro-poor projects will create linkages/accessibility for the target group members with various social and economic facilities and services locally available under various nation building agencies.

8.10.15 Local resources such as government khas land, jal mahals and khas ponds, land by the side of embankments, railways and roads, deforested areas/land, etc. will be made accessible to the poor for productive purposes/activities by them on long term lease through adequate institutional means decided upon by the government in consultation with the relevant stakeholders.

8.10.16 Some new pro-poor projects will specially address the poverty of vulnerable groups with additional allocation of resources, with particular reference to: (a) nutrition supplement for malnourished children and women in distressed areas, (b) development of areas which are prone to flood , drought and salinity experiencing seasonal or periodical food scarcity, (c) credit, housing, schooling, health and sanitation for people in the distressed areas, including the urban slums, and (d) provision of old age allowance.

8.10.17 Some of the new projects will have to address the issue of risk insurance (with respect to natural disaster, health hazard, etc). Aggregate burden of various risk events has been estimated as 16 per cent of household income. For the extreme poor it is as high as 27 per cent. For minimising risk, effective risk pooling, risk sharing institutions (including market institutions) will be developed. In the case of health related risk key responsibility lies with public health intervention.

8.10.18 Adequate funds for the pro-poor production and employment programmes/ projects will be channelled from the government, donors and other sources, e.g., the commercial banks. The bulk of the funds will be given to the poor as micro-credit to enable them take up productive income generating activities in both farm and non-farm micro enterprises.

8.10.19 Generating savings by the group members will be stressed in the pro-poor production and employment projects. The savings deposit will be channelled into the investment stream/fund for income generating activities of the respective groups when they decide to do so. This will gradually reduce their dependence on institutional credit.

8.10.20 Over time a wide range of technologies with different applications have reached Bangladesh; their dissemination however has been poor. Arrangement will be made for dissemination of available technologies with necessary training.

8.10.21 As the poor are efficient in most cases, it is unlikely that any major conflict between the structural adjustment programme and the social mobilisation movement will take place provided that the market is sufficiently responsive and friendly to the poor. This however, is not the case at present. The production and employment programmes/projects will therefore put adequate thrust on promotion of better accessibility of the poor to market and fair prices for their products. Market promotion cells will be constituted in relevant agencies. The activities of these cells will include, among others, publicity through mass-media for popularising the products of the poor, establishment of display and sales centres in important places, motivation of the businessmen through chambers of commerce and industry and various organisations of the business community to promote and purchase the products of the poor and liaise with the Export Promotion Bureau to create foreign markets for the quality products of the poor. The products of the poor and the self-employed may carry a seal of pride and honesty.

8.10.22 The basic elements of the sustainability of pro-poor projects will be self-reliant groups. The project activities will continue over a sufficient length of time to permit the groups/beneficiaries to successfully graduate from the poverty level. On graduation, the groups/beneficiaries may remain linked to the agencies sponsoring the projects for minimum support, if required, but the bulk of the credit support to them will be ensured through linkages with institutional sources of credit like the commercial banks, the PKSF and the self-generated fund, if any, created in the project.

8.10.23 Under the production and employment programme each project must cover an area, compact but as large as is necessary to ensure the economy of scale.

8.10.24 The NGOs will continue to expand their pro-poor and rural development projects. An effective government and NGO collaboration will be necessary. The fields in which such collaboration is feasible will be determined by mutual consultations.

8.10.25 Gainful wage employment for the rural poor will be generated through rural infrastructure development and maintenance programmes of the government and local bodies. They will be implemented with financial resources and food-aid. The infrastructure development work will comprise construction of rural roads, embankments, bridges, culverts, development of growth centres and markets, re-excavation of ponds and canals, repair and maintenance of roads, construction of community buildings and cyclone shelters, etc. These projects will be implemented through involvement of the landless groups or individuals including women as workers. Labour-intensive construction methods will be followed. These schemes will include awareness-raising and skill development training. The local government bodies will implement the infrastructure development and maintenance projects with technical and financial support from the central government.

8.10.26 From the view point of productivity enhancement as well as poverty alleviation, establishment of the right of the sharecroppers and fixation of minimum wages of agricultural labour are important issues that still await a determined action of the government. The Land Reforms Ordinance, 1984 provides, among others, the right of the sharecroppers (Bargadars) and the Agricultural Labour (Minimum Wages) Ordinance, 1984 calls for immediate action

as insecurity over occupancy and tenancy rights and exploitation of labour by the landed gentry in respect of wages to the labour not only adversely affect the poor tenants but they are also inimical to efficient use of land. The Land Reform Ordinance, 1984 provides that every land owner who intends to give land to another for cultivation will have to execute a 'barga contract' for 5 years during which the bargadar or his able heir will have continuous and undisturbed possession on the land. The produce or crop will be divided into 3 shares--one third will go to the land owner, one-third to the bargadar for his labour and one-third to the owner or the bargadar or to both in proportion to the cost of cultivation borne by them. The bargadar will have a prior right to purchase land under barga cultivation provided that he will negotiate the price of land with the owner and purchase the land on such terms as may be agreed upon between them. A ceiling of 15 bighas has been provided for barga cultivation by a single bargadar. The above ordinance also (a) prohibits acquisition of new agricultural land by an owner or his family over sixty standard bighas by transfer, inheritance, gift or any other means, (b) prohibits benami transactions of immovable property, (c) prohibits eviction from homestead land in the rural areas, and (d) gives preferences to landless farmers and labourers in settling khas land fit for use as homestead in the rural areas. The Agricultural Labour (Minimum Wages) Ordinance provides that the minimum daily wage of agricultural labour should be 3.27 kg of rice or its equivalent market price. It should be stated here that alongwith implementation action the above ordinances/laws will be reviewed by the government to see if they can be made more friendly to the poor in the light of the efforts for poverty alleviation.

8.10.27 The land record and revenue system in Bangladesh is vast and complex with over 30 million land holdings which must be mapped, recorded, verified and updated. The conventional system prevailing in the country is not adequate for the task. Litigations and violences due to back-dated and erroneous records of rights, holding demarcations, etc. are of great social concerns. For poverty alleviation the most important implication of land record is that due to erroneous/bad records the legal right of the poor is not always protected. This is one of the reasons for dispossession of a poor farmer from his land. Modernisation of land administration and management system for an efficient and responsive land surveying, documentation and recording system will provide a rapid and transparent land administration service. Towards this end, measures will be taken to (a) modernise the printing system for printing and updating Mouza maps and Khatians by using computer technology, (b) introduce modern equipment in land survey for maximum precision/accuracy in survey output, (c) modernise record maintenance system by using modern technology like micro filming/computer recording which will create quick access of the people to land records and prevent tempering with records, and (d) develop human resources for technical and other services for land administration and management. These measures will be first taken at the central level and will gradually be followed up with a comprehensive modernisation programme covering different land administration units in the country.

8.11 Institutional Development at Local Level for Implementation of Pro-Poor Projects

8.11.1 The new production and employment projects will be based on social mobilisation of the poor for implementation. Under the social mobilisation strategy the poor at the grass-roots will be enabled to organise themselves, identify their own problems, make their own development decisions particularly in areas which concern them most. This process will be

helped by government functionaries, NGO's, other community organisations, people's representatives, local leaders and local government bodies.

8.11.2 Over years the co-operatives have lost attraction due to complexities and rigidities of hard laws and by-laws, rules and regulations, mismanagement, and by-passing of the interest of the poor. On the other hand, small informal group approach has proved successful under NGO programmes. Therefore, presently preferences of the poor as well as the planners and administrators are in favour of mobilising the poor in small informal groups rather than in formal co-operatives. In conformity with the recent experience the new production and employment projects will put emphasis on social mobilisation of the poor in small informal groups. However, considering that the institution of co-operatives can also be important for implementing poverty alleviation projects, the government in collaboration with the representatives of the co-operatives will review the co-operatives laws, by-laws, rules, regulations, management system/structure, etc. for necessary modifications/changes to make the institution fully pro-poor oriented and suitable for taking up poverty alleviation projects.

8.11.3 The groups will go through a process of social development including conscientisation, development of group cohesion and solidarity, group discipline and leadership, and group capability to interface with the development agencies. Training, credit and other support services will follow group development. The project personnel will serve as social animators or facilitators for social development of the groups and they will help the target groups to take up income-generating activities. This process of social mobilisation will be an integral part of the government's efforts to institute local level participatory planning. It will also link the micro policies with macro policies arising from the need for short term stabilisation and the long term movement to a higher growth path.

8.11.4 Local government bodies in rural areas will be involved in different stages of the pro-poor projects as facilitators and will be integral parts of local level participatory planning structure. Their roles in this respect will be decided upon by the government when the new local government system is instituted.

8.12 Basic Support/Services Required by a Poor Person

8.12.1 A poor citizen of Bangladesh requires some basic support/services for satisfaction of certain essential needs in different cycles of his/her life for poverty alleviation. In broad and generalised terms these are presented in the following list:

Essential needs in different cycles of life

Ante-natal cycle

*Ante-natal medical care,
nutrition.*

Basic support/services required

- Ante-natal health education and medical care for the mother at her residence through periodical visits by trained medical personnel
- Ante-natal health education through mass-media
- Ante-natal health education and medical care for the mother at local level medical institutions
- Ante-natal medical care at higher level medical institutions, when necessary

- Nutrition awareness-raising
- Education on nutrition, specially on low cost food nutrition, preservation of food value and quantum of intake for the well-being of mother as well as the expected baby

Natal cycle

Safe delivery, immediate post delivery care for the mother and her baby, registration of birth and death.

- Trained birth attendants
- Local level medical institutions
- Higher level medical institutions
- Supply of medicines from the above institutional sources

Infancy cycle

Medical care (including immunisation/vaccination), nutrition, safe drinking water.

- Baby health education and health care at the community/local level through trained personnel and mass-media
- Local level medical institutions
- Higher level medical institutions
- Immunisation and vaccination
- Supply of medicines from institutional sources
- Nutrition awareness-raising
- Education on nutrition, specially on breast feed-milk and other low cost food nutrition, preservation of food value, quantum of necessary intake and water purification
- Tube-wells at the neighbourhood/ community level for safe drinking water

Childhood

Health and medical care, nutrition, clothing, safe drinking water, schooling, recreation.

- Trained health workers
- Health education
- Local level medical institutions
- Higher level medical institutions
- Supply of medicines from the institutional sources
- Immunisation and vaccination
- Nutrition awareness-raising
- Education on nutrition, specially on breast feed-milk and other low cost food nutrition, preservation of food value, quantum of necessary intake and water purification
- Installation of tube-wells at the neighbourhood /community level for safe drinking water
- Primary school at the village level
- Secondary schools
- Playground, parks etc. provided by the community
- Orphanages

Adulthood

Education, employment, housing, food security, clothing, transport and communication, health services, family planning and family welfare, safe drinking water, community facilities, social security, relief and rehabilitation (after severe natural calamities), local government institutions.

- High schools
- Colleges and universities (for those who would pursue higher education)
- Technical and vocational educational institutions
- Non-formal education
- Free studentships, compensation for lost working hours in the cases of family unpaid labour, subsidies, stipends, scholarships, free books, free school dresses, etc.
- Long term lease of government khas land and ponds, jal-mahal, road side land, etc.
- Creation of employment opportunities for self-employment and wage-employment both in the farm and non-farm sectors
- Motivation and organisation into groups (social mobilisation)
- Legal provision for minimum wage
- Extension services for improved methods of production.
- Supply of different production input and equipment etc. at fair prices
- Training for skill/human resources development
- Micro-credit for productive income-generating activities
- Grant of government khas land (in small pieces) for house building purposes to the rootless/assetless
- Consumption and house-building loan alongwith micro-credit for productive activities
- Development of appropriate technology and diffusion
- Product marketing facilities both domestic and international
- Product development for better return
- Foodstuff price support
- Regular flow of foodstuff in the market at fair prices
- Effective enforcement of law against artificially created scarcity of foodstuff
- Food support during the lean agricultural season
- Procurement of foodstuffs at fair prices during the peak season
- Development of roads and navigable water ways
- Development of rural transport
- Health and family planning education and supply of contraceptives

- Hospitals, qualified physicians and nurses and other trained medical personnel
- Tube-wells for safe drinking water
- Knowledge on water purification
- Hygienic/sanitary latrines
- Community centres with facilities like library, newspaper, TV, radio, indoor games, etc., playgrounds, clubs, places of worship, graveyard, etc.
- Legal protection against maltreatment of women and unjustified divorce
- Priority to the female headed households for economic and other support relating employment
- Centres for economic activities and social interaction for the physically and mentally disabled/handicapped
- Police to control anti-social activities and maintain normal law and order situation
- Disaster preparedness, safe shelter, relief and rehabilitation
- Local government bodies to render support/ services (to the poor) in respect of social mobilisation, micro-credit distribution and realisation, community participation, creation of adequate access to the locally available medical care, economic and social institutions, distribution and management of khas land/jalmahals/ road side land, regular supply of food stuff in the local market, control of anti-social activities and maintenance of peace
- Co-ordination among village-union-thana-district level pro-poor plans and programmes, co-ordination between government and non-government/private sector pro-poor plans and programmes

Old Age

Light economic / income generating activities, income subvention, geriatrics care and services.

- Centres for old people with facilities for light economic/income generating activities, geriatrics medical and social welfare services, income subvention for the poor and the aged.

8.12.2 This list is indicative of various fields of programmes and actions needed to help the poor. For alleviation of poverty and blooming out of the poor programmes and actions in all these fields will have to be co-ordinated and cohesed. For the needed social planning and engineering stipulated in the Fifth Plan period, this will remain a challenge as this will be an area of opportunity for application of creativity.

CHAPTER IX

WOMEN IN DEVELOPMENT AND CHILD DEVELOPMENT ISSUES

9.1 Women in Development

9.1.1 The goal of economic development of a country is to increase the well-being and quality of life of the population through growth with social justice. This includes women as well as men. Women are nearly half of the population. They represent a half of the country's human resources and thus a half of its potential. Continuing disparities between women and men in life expectancy, health status, employment and income opportunities, education, control over assets, personal security and participation in the political process demonstrate that development investments and programmes do not benefit women equitably. Inequitable distribution hinders the process of women's development. It also limits the country's ability to achieve its full potential.

9.2 Constitutional Provisions

9.2.1 Women's rights to equality and affirmative action in respect to equality are guaranteed in the Constitution. According to the Constitution of Bangladesh, all citizens are equal before the law and are entitled to equal protection of the law (Article 27); the State shall not discriminate against any citizen on the grounds of religion, race, caste, sex or place of birth [Article 28(1)]; women have equal rights with men in all spheres of the State and public life [Article 28(2)]; nothing shall prevent the State from making special provision in favour of women or for the advancement of any backward section of the population [Article 28(4)].

9.2.2 The Constitution further advances and incorporates the principle of special representation of women in local self-governing bodies (Article 9). Three women members are elected to the Union Parishads and Municipal Councils. Provision has also been made to reserve thirty seats for women in the Parliament (Article 65).

9.2.3 The pursuit of equal opportunities for women and men is an important goal in its own right. It is also increasingly recognised that development objectives such as accelerated economic growth, poverty alleviation, family well-being and employment creation cannot be achieved without the contribution and participation of women. The benefits of action on issues of women's equality and development are generally accepted in principle. However, in practice, initiatives have been limited and progress has been slow. The Fifth Plan aims at realising the constitutional goal of equality between all citizens - women and men. Thus a major thrust of the Fifth Plan will be integration of WID concerns and gender issues in the mainstream of development.

9.3 Situation of Women

9.3.1 Women constitute about 49 per cent of the population. Various indicators reveal that the status of women is much lower than that of men. Traditional socio-cultural practices limit their opportunities in education, skill development, employment and participation in the overall development process. Their literacy rate is only 38.1 per cent, much lower than that of men (which is 55.6 per cent); life expectancy is 58.1 years for men and 57.6 years for women. Excessive mortality among women due to discrimination has resulted in a sex ratio in the population whereby there are 105 men for every 100 women. Nutritional status of women and girls is marked by sharp differences with that of men and boys. Health care for women is often restricted to their reproductive health. General health of women at all ages is often neglected. Women are married at a much lower age than men; mean age at marriage of

women is 20.0 while that of men is 27.6. Early marriage, repeated pregnancy, and long child bearing spans have serious implications for women's low nutritional status and high maternal mortality rate (4.4 per 1000 live births). Violence against women is alarmingly on the increase. The Bangladesh Bureau of Statistics, in a special report in 1993, revealed that death due to unnatural causes (suicide, murder, burn, snake bite, poisoning, accident and drowning) is almost three times higher for women than pregnancy related causes.

9.3.2 Despite the Constitutional mandate that women cannot be discriminated in respect of any employment or office of the State (Article 29), women's visibility in the public service has been negligible. Their participation in institutional development and decision making is also minimal. Wage differentials between men and women are very high in case of wage employment. The incidence of divorce, desertion and widowhood has been growing; 15 per cent of all rural households are female-headed and 25 per cent of all landless households are headed by women showing strong links between gender disadvantage and poverty. Female-headed households earn 40 per cent less income than male-headed households.

9.3.3 As per LFS 1995/96, of the total 56 million labour force, 34.7 million are males and 21.3 million are females. However, women are generally pushed into the unskilled labour force, primarily because of the obstacles women and girls face in acquiring marketable skills. The climate is still adverse for accelerated entry into the formal labour force by women with vocational and management skills.

9.4 Women in Development Plans

9.4.1 Women have been considered as a distinct target group in the development plans of the country. The First Plan (1973-1978) emphasised a welfare oriented approach and focused on rehabilitation of war-affected women and children. The Two Year Plan (1978-1980) was characterised by a shift from welfare to development efforts. The Second Plan (1980-1985) emphasised creating a congenial atmosphere for women's increased participation in development through expanding opportunities for skill development, credit and entrepreneurship development programmes. The Third Plan (1985-1990) had specific objectives to reduce disparity between development of men and women. The Fourth Plan (1990-1995) placed women within the context of a macro framework with multi-sectoral thrust and focused more on the development of poor and disadvantaged women. However, women's development issues were not made an integral part of the process of formulating, implementing and evaluating development programmes across all sectors. Some sectoral projects incorporated an understanding of differences between women and men in situations and opportunities as a means of seeking a fair distribution of project benefits and a reduction of gender disparities, while some projects included specific targets or objectives for women's development.

9.4.2 During this long period, no significant shift has been visible in terms of addressing women's needs and interests. No tangible progress was made due to lack of a comprehensive integration of WID aspects in development planning and inadequate co-ordination and monitoring in various sectors. The need for coherence in the government's thrust on WID among different sectoral agencies, as well as between government and NGOs was not clearly perceived.

9.5 International Perspective and National Framework

9.5.1 Bangladesh ratified the UN Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in November 1984. Within the overall framework of the CEDAW and as a follow-up to the United Nations Fourth World Conference on Women held in 1995, Bangladesh Government has adopted a National Policy for Women's Advancement (NPWA). It sets the goal of eliminating all forms of discrimination against women by empowering them with the ability of being equal partners of development. The national policy aims at promoting and protecting women's human rights; ensuring equal rights to have access to politics, administration, sports, culture and socio-economic activities; reflecting positive image of women in the media; eradicating persistent burden of poverty on women; ensuring equal access to health and nutrition care; prioritising education and skill training for women; emphasising protection from environmental hazards; supporting measures for the security of abandoned, deserted women in need of special protection measures including elimination of trafficking of and violence against women, and rehabilitation of women affected during natural calamities; and, facilitating participation of women in all the national and international bodies and fora. Based on the findings of the institutional review and sectoral needs assessment studies of 12 ministries conducted during 1996, a National Action Plan (NAP) for Implementation of the Beijing Platform for Action has been formulated. The NAP emphasises the incorporation of gender dimension and concerns such as gender equality, gender desegregated information, gender specific allocation of programmes and projects to the sectoral ministries, special resource allocation for gender responsive programmes towards achieving gender equity in key social and economic indicators. The NAP, therefore, aims at translating the policy statements made in the NPWA into concrete programme packages and project components to be implemented and certain policy adjustments to be made within a specific time-frame.

9.5.2 The shared responsibility for women's equality and development is strongly emphasised in the Beijing Platform for Action which was endorsed by the Government of Bangladesh in September, 1995. Various studies in the institutional review of the government's 'WID Capability' carried out during 1995-97, considered the formulation of long-term and annual plans and the process by which these plans were translated into projects by sectoral ministries. The institutional review identified many gaps in institutional mechanisms, professional skills and information resources in various agencies of the government. The review has found that initiatives for women's development are ad hoc and uncoordinated. Attention to women's development issues is largely compartmentalised in the women's development sector. There have been inherent constraints in addressing gender concerns through development intervention, primarily because of not reaching the socially and economically vulnerable women. Overall, there is a limited understanding of the requirement of a mainstreaming approach. All ministries and agencies of the government have responsibility for women's development. Accordingly, all agencies have responsibilities for ensuring that their policies and programmes respond to the needs and interests of women as well as men and distribute benefits equitably between women and men. These are the basic elements of the mainstreaming approach of the government. It seeks to move beyond isolated and marginal programmes for women to consistent and systematic efforts in all sectoral plans, programmes and projects. Thus, gender issues are to be addressed cross-sectorally and horizontally.

9.6 Co-ordination and Monitoring

9.6.1 Both the institutional review and the NAP have focused on institutionalisation and implementation of sectoral gender-accounting system by setting time-bound and quantifiable targets to achieve gender parity in all the development sectors. Necessary co-ordination will be maintained through various institutional arrangements. The Fifth Plan will establish a national monitoring mechanism to review the status of women at regular intervals.

9.7 Macro Framework of Women's Development

9.7.1 The Fifth Plan will be people-centred, with equitably distributed allocations and environmentally and socially sustainable projects. No meaningful development can be made without equal and equitable progress of women who constitute nearly half the population. Left to themselves, market forces will not be able to remove the gender disparity; government intervention will be necessary. Attainment of a reasonable growth rate, reduction of poverty through generation of production, self-employment opportunities, especially in non-formal sector energised with micro credit input and increased self-reliance are inextricably linked with increasing participation of women in the development activities during the Fifth Plan period. The main aim of the Plan is to integrate women's development into the macro-framework and to reduce gender disparity in all sectors through integration of women into the mainstream development efforts. This may be achieved through the adoption of a multi-sectoral thrust targeting women's increased participation in all sectors, at all levels.

9.7.2 A major thrust of the Fifth Plan will be on developing skills of women with the aim to yield substantial increase in productivity of existing women labour force and opening up new windows of opportunities for future entrants into the labour force. This will be supportive of the Fifth Plan macro-objective of poverty reduction and human resource development. Gender perspective will be integrated within the context of the macro-economic framework. Women's needs and interests will be incorporated with quantifiable, time-bound targets for all the major social and economic development programmes.

9.8 Goals and Objectives

9.8.1 In the Fifth Plan period, the set goals and objectives for development of women and children will be to:

- a. promote equality between women and men in the sharing of power and decision making at all levels;
- b. bring about changes in attitudes, structures, policies, laws and practices in order to remove obstacles to achievement of human dignity and equality in society, including the family, the community and the state;
- c. ensure equal rights of women and men in all spheres of development, including access to information, skills, resources and opportunities;
- d. enhance the participation of women in political, civil, economic, social and cultural life;
- e. promote economic self-reliance for women and generate economic policies that have positive impact on employment and income of women workers in both formal and informal sectors;
- f. establish and transform state structures and practices to enhance gender equality and improve the status of women;
- g. create appropriate institutional arrangements with necessary financial and human resources and authorities at all levels to mainstream women's concerns in all aspects and sectors of development;
- h. identify obstacles faced by members of disadvantaged groups in availing opportunities

- and services, in particular those suffered by women members of these communities, and take necessary steps to mitigate such barriers;
- i. formulate and implement specific economic, social, agricultural and related policies and programmes in support of poor female-headed households;
 - j. review existing discriminatory legislations and make recommendations for progressive elimination of such laws;
 - k. take necessary steps for implementation of CEDAW, the National Action Plan for Implementation of the Beijing Platform for Action and the recommendations of the Institutional Review of the government's WID capability;
 - l. mainstream women's concerns in agriculture and rural development, industry and commerce, basic services, e.g., health, education, drinking water supply and sanitation, and in the informal sector;
 - m. ensure the visibility and recognition of women's work and contributions to the economy;
 - n. reduce the gap in male-female labour force participation rates;
 - o. promote support services for working women, e.g., child-care and transport facilities, accommodation, etc.;
 - p. increase women's representation in governance and administration, including in all tiers of local government;
 - q. reduce the gender gap in literacy rates and in access to educational opportunities, including skill development and technical training;
 - r. promote women's full access through the life cycle to health and related services under the goal "Health for All";
 - s. adopt appropriate measures towards the reduction of insecurity faced by women and girls, the elimination of all sorts of violence against women and for the treatment and rehabilitation of violence survivors;
 - t. eliminate trafficking of women and girl children;
 - u. ensure participation of women in national and international peace negotiations;
 - v. recognise women's role and concerns in environmental and natural resource conservation and management;
 - w. promote the positive portrayal of women and girl children in mass media; and
 - x. institutionalise a national monitoring mechanism to monitor progress in achievement of plan targets on WID.

9.9 Strategic Concerns

9.9.1 The attainment of these objectives requires a conscious pursuit of a gender redistributive orientation to the broad strategies adopted by the Plan. The following strategic concerns are highlighted for their potential direct impact on reducing gender disparity and contributing to the advancement of women:

- a. **Poverty reduction** : The most significant approach towards supporting women's development is to alleviate the persistent and increasing burden of poverty on women; public sector policies should, therefore, pursue sound policies that are gender sensitive, designed with the participation of women and based on development strategies that are centred on people.
- b. **Public expenditure** : Public sector expenditures in general, and public administration budgets in particular, need to be restructured and targeted to address the basic needs of women; mechanisms to ensure that resource allocations at the macro, sectoral and project levels reflect the social costs and benefits of women's

work need to be established; public expenditure programmes will have to explicitly provide women with access to employment, credit and productive resources.

- c. **Public employment** : Measures will be taken to accelerate the integration of women into public service. For example, priority will be given to women for jobs of primary and secondary school teachers, health assistants, family welfare workers; quotas for women in policy level positions will be maintained; and preference in appointive positions such as in the judiciary will be given.
- d. **Education** : Steps will be taken to support a gender sensitive educational system and to increase participation of women in education policy formulation and administration; public education programmes designed to raise awareness on women's rights will be pursued.
- e. **Health** : Provision will be made for health interventions and services designed to take into account women's special health needs, including women's reproductive health, as well as women's multiple roles and responsibilities. The doctor-nurse and doctor-population ratios will be improved to ensure better health care services.
- f. **Legal protection** : Support for the promotion and protection of women's rights through more effective enforcement of law and public education will be extended.
- g. **Security** : Mobilisation of relevant organs of the state machinery at all levels for prevention and redress of violence and crime against women will be aimed at.
- h. **Institutional infrastructure and/or capacity building** : Appropriate institutional development from grass roots to national level, co-ordination of activities among different sectoral agencies, and upholding of women's interests in all spheres will be planned for. The planning capability of the Ministry of Women and Children Affairs, and other line ministries/agencies to take systematic account of gender issues will be increased.
- i. **Support services for women's employment** : Employment support for women, especially child-care, work-place security, accommodation and transport, as necessary prerequisites to women's ability to sustain the gains made through employment, will be prioritised.
- j. **Research and data base development** : Adequate research capability on gender issues to create a reliable knowledge/data base on the situation of women will be developed. Generation of sex-desegregated data in all national data collection systems and use of such data in planning and programming of development activities will be ensured.
- k. **Institutional arrangements** : The Ministry of Women and Children Affairs (MWCA) as the lead ministry on WID has to act as a catalyst for action by various government agencies, and for the promotion of a better understanding of and a more consistent response by all government agencies to the needs and priorities of women. Different ministries/agencies of the government will undertake and implement their respective sector-based projects/programmes to achieve the goals and objectives for the advancement of women. MWCA, being the lead agency, will play a vital role to facilitate, co-ordinate, plan and monitor social development programmes that will be implemented through the sectoral ministries/departments as well as provide critical inputs to the overall development planning process.

An Inter-Ministerial WID Programme Implementation and Evaluation Committee, chaired by the Minister, MWCA will be formed to review, evaluate and co-ordinate WID activities. Thus the nodal ministry will be strengthened with increased competence and technical resources. The Inter-Ministerial Advisory Committee for

the Prevention of Violence Against Women, chaired by the Minister, MWCA will continue to review reports on violence against women and monitor the functioning of the district, upazila and union level committees, set up under the Central *Nari Nirjatan Protirodh* Cell in MWCA.

The National Council for Women's Development (NCWD), chaired by the Prime Minister, has been set up to provide overall policy guidance, oversee inter-ministerial co-ordination and promotion of WID and monitor WID activities across the sectors.

WID focal points have been established in 32 ministries and agencies to co-ordinate and take care of gender aspects in respective sectors. A focal point mechanism within the Ministry of Planning/Planning Commission, especially in the Implementation, Monitoring and Evaluation Division, and the General Economics Division will be evolved in order to develop a common approach and to specify a strategy for more consistent action on women's development. Training of WID focal points to increase specific competence on gender analysis will be undertaken.

A Parliamentary Standing Committee for Women's Development may be constituted to advise the government on necessary steps for effective implementation of the National Policy for Women's Advancement. Legal reforms such as inheritance, parental responsibility may be the main areas of attention of this Committee.

1. **Administrative measures** : The government will attach priority to gender analysis, training and sensitisation of key personnel in public and private sectors. A comprehensive training programme on gender issues will be set up through major government training institutions. Measures will be adopted to expedite quota (for jobs) fulfilment by women, including adoption of affirmative action in recruitment. Service conditions and working environment for women in the public sector will be improved. Positive measures will be adopted to expedite the increase in the number of qualified nurses and the number of women school teachers at all levels, especially at primary, secondary and higher secondary levels.
- m. **Participation in development planning** : Recognising the critical role of women in development planning, conscious efforts will be made to facilitate women's participation in the planning and formulation of sectoral programmes/projects at all levels (union, thana, district and national). Necessary attention will be paid to the enhancement of skills of planners and implementors in incorporating participation of women at all stages of the planning cycle.
- n. **Awareness/public education** : A massive programme will be undertaken to create public awareness of women's legal rights, and where necessary, legal support will be provided to women survivors and victims of violence. The government will undertake programmes for political education and awareness among women.
- o. **Allocation of public resources** : Steps will be taken to integrate gender issues into the budgetary process and to evolve a methodology whereby all budgetary actions and related policies are desegregated to ensure that the government's distribution of resources contributes to the reduction of gender disparity and to the advancement of women. Women's priorities in public investment programmes for economic infrastructure, such as, water and sanitation, transport, markets, etc., will be included. Poor, assetless and homeless families, specially female-headed families, will be allotted government lands, ponds and other water bodies to assist them in securing a sustainable livelihood. In case of married couples, allocations will be made in names of both husband and wife.

- p. **Provision of basic services** : Women's access to basic services such as child-care, education, transport, health, water and sanitation will be prioritised and promoted. Time-bound, quantifiable targets for reaching women, particularly disadvantaged women, will be set in each sector and implementation monitored.
- q. **Skill development training** : Women's access to all skill development training opportunities will be prioritised, and special programmes for women and girls on the development of traditional and non-traditional skills will be supported.
- r. **Financial services** : Women's access to financial services at all levels, and in particular, to micro credit for investment into small-scale production and undertaking entrepreneurial activities will be actively encouraged in both government and private sector financial institutions.
- s. **Consideration of women in need of special measures** : Steps will be taken to reach socially and economically disadvantaged and vulnerable groups, such as abandoned, destitute and homeless women and girls, women with disabilities, women engaged in commercial sex work, women victims of violence and trafficking, etc., and to take appropriate measures for their welfare.
- t. **Data base** : Steps will be taken to ensure that Bangladesh Bureau of Statistics (BBS), henceforth, adopts data collection and analysis methods that result in a sex-desegregated national data base. Particular emphasis will be given to staff training on design and analysis of data from a gender perspective, so that a gender sensitive statistical data base, and information and monitoring system can be developed.
- u. **GO-NGO co-operation** : Instances of co-operation between government and NGOs have been encouraging. NGOs will be encouraged to complement and/or supplement activities undertaken by the government towards enhancement of women's situation and government-NGO co-operation will be strengthened, particularly in reaching the disadvantaged women. A GO-NGO Consultative Council has been formed to provide a forum for dialogue between the government and NGOs and to suggest modalities for creating an enabling environment for greater involvement of NGOs in national development.

9.10 Child Development Issues

9.10.1 The integration of child development as a cross-sectoral theme throughout social development programmes is of critical importance. Issues concerning children's interest cannot be confined to a single sector. Thus, key social development sectors will be responsible for implementing programmes related to protecting children's rights and ensuring children's full development. Children constitute a large number of the population with 16 per cent under 5 and 44 per cent under 15 years of age. Investment in them will, thus, bring a better future not only for the children but for the whole country.

9.10.2 The United Nations General Assembly adopted the Convention on the Rights of the Child (CRC) in November 1989 (UNGA Resolution 44/25) and it came into force in September 1990. The World Summit (September 1990) for Children, which strongly endorsed the Convention, was the first major global action for its implementation. The Declaration and the Plan of Action of the World Summit for Children and the Convention together constitute the global agenda for the well-being of children. The guiding principle adopted globally is that the essential needs of children should be given high priority in allocation of resources at national and international levels.

9.10.3 The Government of Bangladesh has demonstrated its support for human development by signing the CRC in 1990 with reservation in respect of children's religious rights and right for adoption making it one of the first 22 countries to do so. Decisions on these 2 reservations are slated for revision soon. The ratification of the Convention and the commitment to achieve the goals of the World Summit were critical steps towards recognising the importance of placing the well-being of children at the forefront of the social and economic development agenda in Bangladesh. The National Plan of Action (NPA) for the children (1990-1995) was prepared by the government to accelerate progress on children's issues. The NPA set 1990 as the benchmark year to measure and achieve World Summit goals.

9.10.4 According to the Constitution of Bangladesh, "Nothing shall prevent the State for making special provision in favour of women and children, or for the advancement of any backward sections of citizens" [Article 28(40)]. In pursuance of the fundamental principles of the Constitution and the Convention on the Rights of the Child, and in order to harmonise government actions, a National Policy on Children (NPC) was formulated. Under the policy, all children of Bangladesh, irrespective of caste, creed, colour, sex, language, religion or opinion, social and economic status, wealth or birth, shall enjoy equal rights and opportunities. As envisaged in the NPC, a National Children Council (NCC) was set up as the highest policy making body under the chair of the Minister-in-charge of the Ministry of Women and Children Affairs. High level representatives from concerned ministries, as well as NGO representatives and child welfare activists from civil society are members of the NCC which is expected to give a real inter-sectoral thrust on the children's programme. As the supreme body in the country, it is responsible for monitoring enforcement of the legislation towards protection of child rights and all sectoral social development activities for the benefit of the children. The Ministry of Women and Children Affairs (MWCA) acts as the secretariat of the NCC.

9.10.5 The Ministry of Women Affairs has been re-designated by the government as the Ministry of Women and Children Affairs to emphasise the special focus on children. Therefore, the MOWCA is the lead agency to co-ordinate and monitor the progress on child development programmes implemented through various sectors. Bangladesh Shishu Academy was founded with the aim of undertaking special programmes for moral, psychological, cultural and recreational upliftment of the children and to imbibe a spirit of self-confidence among them towards blooming up their talents.

9.10.6 There has been a steady decline in the infant mortality rate from 110 per 1000 live births in 1988 to around 78 per 1000 in 1995, and under-5 mortality rate per 1000 from 162 in 1988 to 128 in 1995. Much of this has been due to tremendous success in immunisation coverage and oral rehydration therapy. There have also been some forward strides in nutrition, water supply, sanitation and primary education. Various legislations related to issues concerning children have been enacted and revised.

9.10.7 Some other actions initiated by the government, both at the policy and implementation level, include: (a) increased budget allocation for the development of social sectors, including primary education and adoption of a comprehensive non-formal education policy; (b) free education for girls upto class X and a policy announcement to make education free for girls upto Class XII; (c) observance of Child Rights Week annually with participation from all concerned as a sign of corporate social commitment under the leadership of the government; (d) institutionalisation of Multiple Indicator Cluster Survey (MICS) methodology within the Bangladesh Bureau of Statistics to monitor progress towards achievement of the World Summit goals and an annual publication of Progotir Pathay that includes national and sub-national data

on each major child development indicator, allowing implementors to track progress and take corrective measures; (e) support to private sector and NGOs to develop a model for phased elimination of child labour in the garment sector by providing educational opportunities; (f) launching of Bangladesh Integrated Nutrition Project to address children's nutrition needs; and (g) examination of existing laws to identify inconsistencies with CRC and revision and enforcement of existing legislations.

9.10.8 To implement the Fifth Plan objectives within the overall framework of CRC and the National Policy on children, a National Plan of Action (1997-2002) will be formulated by the Ministry of Women and Children Affairs.

9.11 Situation of Children in Bangladesh

9.11.1 The actions taken so far are still inadequate in terms of needs and concern. Children in Bangladesh continue to lack basic amenities and opportunities of life. One-third of the babies are born with low birth weight. Infant and under-5 mortality rates are still very high, 78 and 128 respectively per 1000 live births. About 70 per cent of all children under five years of age are malnourished and 11 per cent children are severely malnourished. One in every seven children born in Bangladesh dies before their fifth birthday. Although sanitation coverage has increased significantly, only 40 per cent of the children have access to sanitary latrines. Over 80 per cent of the school-going age group children enrol in the formal schooling system, about half of them attend regularly and almost 40 per cent of them drop out. From this precious fifty per cent, approximately 60 per cent reach completion level of primary education and a mere 5 per cent are able to pass the Higher Secondary School Certificate examination. In every social indicator, the female child fares worse than the male child. Child labour has been a major concern for Bangladesh. Laws regulating child labour exist but implementation is not adequate. Around 11.7 per cent of the total civilian labour force constitute child labour in the age-group of 5-14 years. Although the mean age at marriage is rising, almost half of all girls are married before the age of 18, leading to early and frequent pregnancies. With the fast growing urban population, 20 per cent of the total population now live in the urban areas. Of them, about one-third belongs to the hard-core poor group. A considerable proportion of children of these families is hard-to-reach and grow up uncared for, deprived of the basic needs and opportunities. These children hardly have any family support. Urban poor children are generally victims of neglect and exploitation; girl street children are particularly vulnerable to coercion and exploitation.

9.12 Goals and Objectives

9.12.1 Giving due emphasis on the World Summit goals, Convention on the Rights of the Child, SAARC (1996) and the declared National Children Policy, the Fifth Plan will make a co-ordinated approach towards overall development of the children. This will be complementary to the Fifth Plan macro objective of the human resource development. Considering the situation of children in Bangladesh, availability of resources and national commitment to enable them to grow to their full physical, mental and social potential, the following goals and objectives will be pursued to :

- a. make conscious efforts for ensuring children's rights to basic services such as education, health and nutrition, water and sanitation and social services;
- b. adopt appropriate measures for providing equal opportunities to all children for development of their personality, talent and mental and physical abilities to the fullest potential through the local government structure at various levels as well as other institutional arrangements including NGOs;

- c. open up opportunities such as global information systems like internet, distance education and electronic reporting systems towards ushering a child-friendly environment;
- d. improve the health status of children by reducing infant and child mortality rates by 2002 to half of the 1990 level;
- e. reduce severe and moderate malnutrition among under-5 children by half over the benchmark of 1990;
- f. provide a favourable environment to children through the universal access to safe drinking water and sanitary means of excreta disposal;
- g. provide universal access to basic education and completion of primary education by at least 80 per cent of primary school-age children;
- h. promote secondary school enrolment and non-formal education with focus on vocational education and skill development to meet the growing demands;
- i. protect children from economic exploitation, hazardous occupations and to reduce child labour in a phased manner;
- j. take measures for delaying the age of marriage of girls and prevent early pregnancy;
- k. take necessary steps for children, requiring special protective measures such as urban slum children, children without shelter, children exposed to sexual exploitation and violence with particular focus on adolescent girls, disabled, destitute and displaced children and those caught up in armed conflicts;
- l. adopt appropriate measures towards elimination of trafficking of children, including immoral trafficking of female children;
- m. expand early childhood-development activities, including appropriate low-cost family and community-based interventions; and
- n. fully implement CRC in all its spirits and contents.

9.13 Strategies : The Plan will emphasise on the public sector intervention in promoting, supporting and protecting the children's rights to create an enabling environment for a better world for the children. The 'First Call for the Children' and addressing their best interest will be the guiding principle in developing their strength and potential. The Fifth Plan will thus, focus on preparing the children to face the challenges of the new millennium. Keeping these in view, following strategies will be adopted during the Plan period.

9.13.1 Inter-sectoral Approach : Strategies for child development will have a multi-sectoral approach involving the key social development sectors, such as education, health and nutrition, water and environmental sanitation, urban basic services, labour law, and justice, social services, etc. The sectoral ministries will be responsible for implementation of programmes with measurable, time-bound targets relating to tasks allocated to them. As the lead agency, the Ministry of Women and Children Affairs will provide overall policy guidance, build up information-base, co-ordinate with relevant ministries, review and monitor progress in the child development programmes, and develop and sustain effective inter-sectoral linkages as important strategic interventions.

9.13.2 Advocacy : On child development related issues, advocacy will form part of all the programme activities at all levels to make people aware of the rights and needs of the children. The dimension and magnitude of child development is so extensive that collaborative efforts of the government, NGOs, civil societies and private sectors will be essential. Effective communication for attitudinal change is necessary for the attainment of goals as well as for development of an appropriate structural and social environment for bringing about these changes and sustaining them. The focus will be on optimal mix of advocacy, social mobilisation

and programme communication with NGOs, private sector and the civil society's involvement. Declaration of Bangabandhu's birthday (March 17) as children's day will be acted upon to carry the advocacy of children's rights and potentials.

9.13.3 Decentralisation : With the active participation of concerned departments, particularly the local government at city/town, district, thana, union and village levels, a decentralised planning and programming for child development and welfare will be initiated. An effort will be made to intensify child development activities and allocate more resources in the low performing areas. Efforts will be made to build up a harmonised mechanism for decentralised programme, planning and implementation.

9.13.4 Capacity Building : Capacity strengthening for the child development programmes at national, sub-national and community levels will be emphasised through all the programme sectors. Strengthening the government's institutional capacity and the creation of new opportunities in the private and NGO sectors, particularly in the areas of training, research, product development and social innovative technologies, will be emphasised.

9.13.5 Community Participation : Demands for children's basic services will be generated at the community level by empowering social groups, particularly parents, with necessary information on child survival, protection, participation and other related development issues. This will have positive impact, both directly and indirectly on consumer behaviour that will lead to increase beneficiary participation in terms of leadership development. NGOs will be encouraged to work in co-operation with the government towards providing basic services, particularly in reaching the under-served children.

9.13.6 Co-ordination and Monitoring : Co-ordination among the participating ministries will be strengthened through the National Children Council. The forum of the Joint Government-UNICEF Advisory Group will also continue to be used for this purpose. Effective field level co-ordination will be enhanced by strengthening professional capacity of the local government institutions, delegation of responsibility to the field level government functionaries and involvement of NGOs and local communities. National and local planning and monitoring mechanism will be strengthened through various government institutions. The NCC will provide overall supervision in terms of monitoring child development goals. As the lead agency, MWCA will monitor the progress on the child development programmes implemented by the line ministries.

9.14 Major Strategic Interventions

9.14.1 For achieving the objectives and the goals, the following major strategic interventions will be made:

- a. Time-bound, quantifiable targets will be set and monitored for child development activities, and these will be made explicit within the key sectoral social development plans and programmes, particularly in education, health, nutrition, water and sanitation;
- b. Convergence of essential services (e.g. health, nutrition, safe water, hygiene and sanitation) will be promoted and strengthened at the community level through the local government structures and partnership with NGO and private sectors;
- c. A co-ordinated information campaign will be undertaken to apprise people about child survival, protection, participation, development and child right issues to enhance awareness and commitment, and to create a broad partnership;
- d. Data-base on children's issues will be improved: registration of birth, death and other important events will be acted upon;

- e. Monitoring mechanisms to review progress on the child development and welfare activities will be established and strengthened at national and sub-national levels;
- f. Due emphasis will be given to enforcement of the existing laws, rules and regulations. Existing legislation relating to child welfare and development will be enforced, reviewed and necessary amendments made. State machinery will be mobilised at all levels to prevent violence and trafficking of children;
- g. Voluntary organisations/NGOs/civil societies will be encouraged to supplement government efforts in creating facilities for the development and welfare of the deprived, disadvantaged, and disabled children as well as for urban poor children;
- h. Appropriate welfare measures will be adopted to reach the socially-disadvantaged children such as disabled, destitute, abandoned, shelterless and the children who are victims of violence and trafficking; and
- i. Activities of the Shishu Academy will be extended in order to provide favourable conditions for full exploitation of latent and potential talents and abilities of the children.

9.14.2 Children represent one window which enables a society to gaze into the kaleidoscopic composition of the near and the distant future of its shape in the next millennium. Therefore, outlay in terms of planned, adequate investment in this crucially sensitive area will provide the parameter of our ability to intervene in terms of social engineering for a rapid, planned and positive change in preparation for the next century. The ability of the children to climb out of the present morass and in creating an enabling and participatory environment for them will indicate the success of the political will and the commitment of the government to prepare the children to face the challenges of the Twenty First Century.

CHAPTER X

ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

10.1 Introduction

10.1.1 The Constitution of Bangladesh asserts that ‘it shall be a fundamental responsibility of the state to attain, through planned economic growth, a constant increase of productive forces and a steady improvement in the material and cultural standard of living of the people’(Article-15). In pursuit of this goal of prosperity of the people through planned development, the individual and the society come to interact with the environment and have to take care of it, lest not to speak of global warming, excessive use of natural resources like land, water and forest turn this land into a ‘dust bowl’ with ‘individuals scratching a living like a scrawny hen’.

10.1.2 With the awareness of the above potential threat, Bangladesh has so far signed, ratified and acceded to 22 international conventions, treaties and protocols related to environment. The important ones, among them, signed at the UN Conference on Environment and Development (UNCED), held at Rio de Janeiro, Brazil in 1992, are the Agenda 21, Climate Change Convention and Biodiversity Convention. The Agenda 21 is a basis to attain sustainable development through policies initiated and co-ordinated at the national level. The second phase of the Bangladesh National Conservancy Strategy (BNCS), the Forestry Master Plan and the National Environment Management Action Plan (NEMAP) all reiterate Bangladesh’s commitment to implement the international conventions and treaties signed from time to time.

10.1.3 As a signatory of these international and regional treaties/conventions/protocols, and in fulfilling the constitutional obligation, further efforts will be continued to chart the course to prosperity ensuring that no irreparable damage is inflicted on the environment and prosperity is sustained in the long run.

10.2 Major Environmental Issues in Bangladesh

10.2.1 Environment, as per the Environment Protection Act, 1995 includes water, air, land and physical properties and the inter-relationships which exist among and between them and human beings, other living creatures, plants and micro-organisms. The environment is thus the sum total of all social, physical, biological and ecological factors. Social environment is centred round human beings. It is their institutions, group behaviour, habitation and interaction in production and consumption of their wealth. The human activities entail using natural resources and interfering with natural environment, increasingly with the increase in growth. Environmental concerns have, therefore, assumed vital importance. It is now widely accepted that there must be an integrated approach between environment and development. As such, there is a need for integration of environment into development planning and activities. Environment is where we live and development is what we all do in attempting to improve our standard of living. Bangladesh has many environmental problems, natural or man-made, such as frequent natural disasters, industrial pollution, poor health and sanitation, deforestation, desertification, changes in climatic conditions, salinity, deteriorating habitat of flora and fauna, etc. which we have to face, solve or compensate for.

10.2.2 Agricultural resource base : The vast majority of the population depend on agricultural and natural resources for a large part of their food and income. Thus, a more

dynamic agricultural sector, better use of natural resources and increased concern for environment are essential. No growth or poverty alleviation strategy can bring success without a healthy agricultural sector. Land and water are the two natural resources for agricultural development. One of the difficult strategic issues is how to allocate limited supplies of water to its uses for agriculture, salinity control, fisheries, navigation and a growing urban population for sustained development. There is also competing demand on land from non-agricultural uses of land. As a result, agricultural resources in Bangladesh are already under severe pressure and environmental strain. It is essential to reverse this trend and rebuild, and where possible, augment the productive capability of scarce and essential agricultural resource base. To produce enough food for an increasing population, it is necessary to maximise the benefits that can be derived from the existing technologies and to maintain the sustainability of the food production system beyond the medium term of the Fifth Plan, it is essential that Bangladesh continues to make all out efforts to bring about a major breakthrough in agricultural technology.

10.2.3 Biodiversity : In making a breakthrough in agricultural technology, it is necessary to preserve the variety of life, i.e. biodeversity. The preservation of biodiversity is both a matter of insurance and investment, necessary to sustain and improve agriculture, forestry, livestock and fisheries production systems in order to keep future options open as a buffer against harmful environmental changes and as a raw material for scientific and industrial innovations. Moreover, we must conserve biodiversity as a matter of survival. The variety of life helps make the earth fit for balanced enjoyment of life. It plays an important role in all major life-support services, from maintaining the chemical balance of the earth and stabilising climate to protecting the watershed and renewing soil. Maintaining a nation's biodiversity is integral to maintaining its wealth. The Plan, therefore, attaches due weight to the development of our biological resources. The importance of species and ecosystems will be considered in the formulation of development policies and programmes. Institutions assigned responsibility for conserving biodiversity will be supported by necessary financial and organisational resources. The species and ecosystems on which our survival depends will be clearly identified and appropriate technology applied to make our survival worthy of human beings.

10.2.4 Biomass: In Bangladesh, especially in the rural areas, where about 80 per cent of people live, biomass plays an important and complex role. The problem is not merely the supply of wood or of fuel or of food. These products are linked by competition for land and by different product's end uses that may compete with, or complement one another. Thus shortage of any form of biomass will affect the quantity and composition of different end-uses. At the moment, there is an acute crisis of biomass fuel, which constitutes 73 per cent of total energy consumed. The per capita supply of biomass fuel is declining. There is an increased use of crop residues and dung as fuel which is depriving soil of valuable nutrient and organic matter.

10.2.5 Impact of chemicals : Modernisation of agriculture has led to an extensive use of fertilisers and pesticides. Although production of foodgrain and other crops has increased significantly by the use of fertilisers and pesticides, quality of land has suffered due to indiscriminate use of chemicals. Farmers spraying pesticides and using fertilisers, in many cases, are suffering from heart and skin diseases. Cows, goats and other domestic animals eating fertiliser-fed and pesticides-affected grasses are also suffering from diseases. Fish population in the rivers and other water bodies have drastically decreased due to water pollution by chemicals including fertilisers and pesticides.

10.2.6 Industrial pollution: The growth of industries in the country has generally been unplanned without keeping the issue of environmental protection in careful consideration. There are many industries in the residential areas causing air and water pollution through smoke emission and dumping of untreated effluent. Industrial wastes have polluted the water of the Buriganga, the Shitalakhya, the Karnafuli and the Rupsha rivers. Effluents from tanneries are extremely harmful to human beings since they contain high concentration of chromium compounds. About 250 tanneries in Hazaribagh area within the Dhaka city are causing serious environmental pollution and health hazard making the area unsuitable for human habitation.

10.2.7 Deforestation: Bangladesh has a classified natural forest area of around 6-8 per cent of the total land area which is far below the desired level. According to a study, 50 per cent of destruction of forests took place during the last 20 years affecting top soil and causing land erosion. Such deforestation could not yet be compensated by social forestry and backyard plantations.

10.2.8 Wetland and fisheries: Bangladesh has a high proportion of wetland area, which has, of late, been declining. Rivers, canals, beels, lakes and haors are the open wetlands while baors, dighis, ponds and ditches constitute the closed ones. They are significant sources of sweet water fishes. The decline in fish production has been attributed to a general deterioration of the wetlands, characterised by silting up of bed levels, water logging as well as water pollution.

10.2.9 Mangrove ecosystem: The Sundarbans, located in the south-western part of Bangladesh is the largest single expanse of mangrove forest in the world. It is a dynamic, fragile and complex ecosystem in delicate balance with land and water. It is a good habitat for offshore fisheries and onshore shrimp cultivation, a natural coastal protection, a highly valuable forest resource and a recreational resort. But a gradual degradation of environment in the Sundarbans has been taking place due to rapid deforestation, top-drying, saline water intrusion, killing of wild lives, inadequate reforestation and lack of efficient conservation programmes.

10.2.10 Coastal and marine water: Disposal of chemical fertilisers, insecticides and industrial effluent into water are leading to a severe pollution of the coastal and marine environment. Rare species living in these areas will disappear if they are not preserved.

10.2.11 Salinity: Diversion of the Ganges water has thus far drastically reduced the down stream flow of its distributaries. Consequently, saline sea water entered into the mainland rivers. It has adverse effects on agriculture and sweet-water shrimp cultivation and also on availability of sweet water for domestic and other uses. Following signing of the long term treaty on sharing of water of the Ganges with India on December 12, 1996, there has been an improved inflow of water down the Ganges in Bangladesh. This seems to be having an improving effect, which needs to be further improved through building a barrage across the Ganges.

10.2.12 Sanitation: In order to benefit from the increased coverage of water supply, the vicious cycle of bacterial contamination has to be broken by introducing some form of safe disposal of domestic waste including human excreta. The present state of affairs in this area is quite unsatisfactory particularly in the rural areas. Only 36.9 per cent of the population have acceptable sanitary system for safe disposal of excreta.

10.2.13 Urbanisation: Serious problems of environmental degradation resulting from unplanned urbanisation need to be evaluated in terms of (i) land use alterations, (ii) inadequate shelter, water/sanitation, and other facilities in slums and other urban poor areas, (iii) degradation of community ambient environment, and (iv) little control of industrial waste emissions, which often greatly compounds the problem of environmental pollution due to inadequate management of human and domestic wastes. Provision of water, sanitation and other environmental infrastructure will adequately improve urban life.

10.2.14 Inter-sectoral linkages: Rapid economic development will put ever increasing pressure on natural resources such as land, water, energy, etc. and tend to increase the discharge of pollutants to the environment. It is, therefore, essential to choose the future pattern of development in such a way that environmental degradation is minimised through judicious use of resources on an inter-temporal basis and development is sustained. Moreover, the access of the poor and the disadvantaged, especially women, to common property resources is to be appropriately looked into to promote sustainable management of the environment. Such developmental efforts must focus on the creation of an “efficiency and quality culture” in our planning process. Along with the increase in capital and labour efficiency, the contribution of other factors to growth has to be maximised through measures like development and application of appropriate and/or modern technology, inter-sectoral linkages, internal and external economics in production, etc.

10.3 Goals and Objectives

10.3.1 In order to promote, nurture, protect and expand nature and natural resources and to link all developmental activities with environment for improving the quality of life, the Fifth Plan aims at the following objectives:

- a. promoting sustainable environment management in pursuit of quality livelihood and to alleviate poverty;
- b. promoting participatory, community-based environmental resource management and environmental protection (considering the poor’s access, equity as well as gender issues);
- c. ensuring active participation of the poor, especially women, in environment protection activities;
- d. promoting environment-friendly activities in development interventions;
- e. preserving, protecting and developing the natural resource base;
- f. strengthening the capabilities of public and private sectors to address environmental concerns;
- g. controlling and preventing environmental pollution and degradation related to soil, water and air;
- h. creating public awareness for participation in environment promotion activities; and
- i. conserving non-renewable resources and sustaining auto and eco-generation of renewable resources.

10.4 Policy Outline

10.4.1 Sustainable environment management has emerged in response to the need for new co-ordinated approach and practices which can accommodate diverse realities, yet not so all-encompassing as to be vague and ineffective for leading to action. Such action must still flow from institutional arrangements, policy making, resource mobilisation and initiatives by the society’s major actors such as government at all levels, NGOs, leaders of business and

civil society and groups. The flow must, however, be within an interactive and dynamic framework which has the promotion of sustainable environment for all the people as its goal.

10.4.2 Sustainability is based on decision making which reflects a balance among long term economic growth and efficiency, ecological unity and human well-being including equity. More specifically, the concept seeks to offer an alternative approach to redress the failures of the past development strategies to contain growing inequality and deprivation of decent living. It builds on the lessons learnt in ‘delivering development’ and the challenges of today’s world due to changing nature of work and its multiplicity and the desire for sustainable well-being and environmental security. The sustainable environment management concept allows the integration of social, gender and environmental equity issues in the search of a better living in a sustainable state.

10.4.3 National Environment Management Action Plan (NEMAP) of Bangladesh provides the policy framework of an action plan for environmental development in combination with a set of broad sectoral guidelines which emphasise, *inter alia*, the following:

- a. maintenance of the ecological balance and overall progress and development of the country through protection and improvement of the environment;
- b. protection of the country against natural disasters;
- c. identification and control of all types of activities related to pollution and degradation of environment;
- d. undertaking environmentally sound development programmes in all sectors;
- e. sustainable long-term and environmentally congenial utilisation of all natural resources; and
- f. active association with all environment related national and international initiatives.

10.4.4 Government has its forestry policy and the 20-year Forestry Master Plan in operation. National Conservation Strategy (NCS) is in its final stage of approval. National Environment Management Action Plan (NEMAP), finalised recently, is a government plan prepared by the Ministry of Environment and Forest in consultation with people from all walks of life. NEMAP is the product of a pro-active public consultation process, where the concerned people had the opportunity to define the environmental concerns, priorities and problems and suggest solutions. It is a synthesis of perceptions of the government, NGOs and the people on environmental issues and actions required to address them.

10.4.5 There are other sectoral plans and policies with emphasis on environment and its conservation. They are: Flood Action Plan, Bangladesh Water and Flood Management Strategy and National Energy Policy.

10.4.6 A range of parallel/sequential interventions will be necessary to help promote sustainable environment. The actual range, combination, sequencing and methods of implementation will be determined in the local contexts. The interventions will include:

- a. policy: eco-tax reforms, subsidy shifts, land tenure, licensing arrangements, credit, incentive schemes, education, health, macro-micro linkage, especially a bottom-up feed-back for policy-making;
- b. governance: strength of the democratic process and institutions, accountability and transparency of the government, local government autonomy and capacity, people’s democratic institutions, participatory decision-making, independent judiciary and law enforcement;

- c. technology: identification of opportunities for synergy between local and outside technologies in agriculture, industry, environmental services, telecommunications, energy, etc. and promoting such synergy; and
- d. finance, investment and private sector development: debt relief, micro-credit, entrepreneurial development, etc.

10.5 Strategies

10.5.1 Strategies will include the following :

- a. National Environment Council will be activated;
- b. Environment Committees at district and thana levels with people's participation will be formed and activated;
- c. Ministry of Environment and Forest will be strengthened in the light of the existing Environment Policy and Action Plan in order to co-ordinate, monitor and oversee all NEMAP implementation activities by various sectoral ministries and agencies;
- d. Rules, regulations and guidelines under the Environment Protection Act (EPA), 1995 will be finalised earliest in order to ensure effective enforcement of EPA;
- e. Sectoral legislation are to be reviewed and formulated in the light of Bangladesh's commitment to international conventions and protocols on environment;
- f. 'Polluters Pay Principle' will be followed in order to ensure strict compliance of environmental legislation;
- g. Incentives in the form of tax rebate, tax holiday, etc. will be provided and the incremental cost incurred by the environment-friendly entrepreneurs will be met in various forms;
- h. 'National Environment Fund' will be established in order to provide assistance to the victims of environmental degradation caused due to natural disasters and anthropogenic activities; and
- i. Environmental impact analysis will be continued in processing development projects for approval of the government.

10.6 Financial Management

10.6.1 Implementation of NEMAP, Forestry Master Plan, National Conservation Strategy and a number of development activities related to environment will require adequate financing. The shared responsibility for improvement of the environment by all partners in development including various government organisations, local government bodies, NGOs, research and training institutes will be strongly emphasised. Private sector will be increasingly involved in providing support to the environment protecting programmes under the Fifth Plan.

10.7 Government-NGO Co-operation

10.7.1 Growing instances of co-operation between the government and NGOs have been witnessed on the issues like environment, resettlement and disaster management, education, health, population, women and youth development, livestock and fisheries. The participation of the poor in these sectors is increasingly high. By and large, the government acknowledges the effectiveness of the NGO approach in reaching the target groups, while NGOs enjoy widening (scaling-up) of their impacts as a result of such co-operation. Till now, it has been more prevalent in project implementation than in project formulation and design with a broader perspective.

10.7.2 The increased involvement of NGOs in forestry and fisheries programmes is a step in the right direction. GO-NGO co-operation at local levels in project formulation and implementation has a high potential for conservation of environment.

10.8 Disaster Management

10.8.1 Bangladesh faces many natural hazards. The environment in Bangladesh is adversely affected by severe floods which erode lands and by cyclones which destroy natural vegetation. Bangladesh is also in the seismic zone. Man-made hazards like over-use of land and over-exploitation of forests and unrestricted burning of fossil fuel by industries are no less important to be aware of in securing national well-being by averting environmental degradation.

10.8.2 Previously, people reacted to the situation after a disaster had taken place. The concept has changed in recent years. People need to be prepared in advance to face a disaster through information and motivation and by adequate structural and nonstructural measures, to mitigate the impacts of a natural disaster. Advance preparedness which reduced the loss of life to the barest minimum during the devastating cyclone of 19th May, 1997 is a success story that might be cited here. In the light of experience gained from this success disaster management committees have been formed at national, district, thana and union levels. A national programme in line with International Decade for Natural Disaster Reduction (IDNDR) objectives and resolution is being implemented to minimise the adverse impacts of disaster on population and environment in Bangladesh. The government has undertaken a massive programme to train people living in the disaster prone areas in order to improve their capability to cope with natural disasters. Development partners and NGOs are also working in this field. The government has issued a new set of standing orders for disaster management and necessary legislation are being processed. A National Disaster Management Plan is also being prepared.

10.8.3 The impact of cyclone can be reduced by massive afforestation and construction of appropriate housing and cyclone shelters in the coastal belt. Afforestation also helps diminish chances of drought and desertification. Strong embankments in the coasts and islands can reduce devastation by tidal bores and salinity. An effective early warning system may alert people against natural disasters and help them take precautionary measures in time. Cyclone shelters in the coastal areas and raised earthen platforms in the flood prone areas can save lives and properties. Incentives and awareness creation at the grassroots level can help develop coping mechanisms of disaster victims. Strongly built structure (houses in cluster having low heights, roads, bridges, culverts, sluice gates, etc.) can better withstand onslaught of disasters.

10.8.4 The Fifth Plan will accord priority to disaster preparedness, warning system, response and rehabilitation. Appropriate resource allocation will be made for measures to mitigate impact of disasters and prevent environmental degradation.

10.9 Implementation

10.9.1 Major thrusts for environment protection will include the following:

- a. training of technical personnel for control of pollution;
- b. environment education in schools, colleges and universities, and creation of environmental awareness among people;
- c. land use planning;

- d. optimum utilisation of water resources;
- e. coastal and social afforestation;
- f. conservation of genetic resources;
- g. wildlife preservation;
- h. development of agricultural resource base through biodiversity and soil conservation;
- i. conservation of coastal and marine resources;
- j. industrial pollution control;
- k. preservation of living aquatic resources; and
- l. disaster mitigation measures.

10.9.2 Environmental concerns encompass all sectors of the economy. A multi-disciplinary approach is, therefore, needed for the formulation of policies and implementation of programmes related to environmental issues. Poverty, environmental degradation and sustainable livelihood, all interact in a complex way. A comprehensive approach is also needed for implementation of policy measures. A distinguishing feature of the Fifth Plan is the explicit attention given, *inter alia*, to environmental issues. Public sector involvement in encouraging, supporting and protecting environment is manifest in all government sponsored development efforts. In addition to the specific measures for protection of environment through active monitoring, enactment of enabling laws will be actively pursued.

10.9.3 A two-fold approach in the public sector will be adopted to create an environment friendly society all over the country for improving the quality of life. The first is an inter-sectoral one which requires perceiving the sectoral impact on environment, collecting appropriate and relevant information, carrying out assessment of impact and suggesting remedial measures. The second is the adoption of direct measures to prevent environmental degradation. Review, amendment and implementation of laws for the protection of environment will be actively pursued under the Fifth Plan. While the responsibility of establishment of the institutional arrangement for development of environment will remain with the government, in view of the success of NGO programmes on environment issues, formal mechanisms allowing for the exchange of information as well as undertaking joint programmes will be encouraged.

10.9.4 NEMAP will require continuing efforts and multiple strategies. It will require close monitoring, supervision and evaluation of implementation of various programmes and measures with swift course of corrections in government approaches, process and skills from time to time.

10.9.5 Implementation of NEMAP as a follow-up of the Agenda 21 as well as needed institutional and administrative supports for the purposes mentioned above, require participation of many different ministries and agencies of the government. To this end, and for the various steps to be harmonised, in-house leadership role is the precondition to attain the desired goals and objectives of the Plan. MOEF will be in a better position to pursue a cohesive strategy, apply clear priorities, select appropriate programme/project activities, and to monitor/co-ordinate effectively with all other concerned ministries/agencies to maintain ecological balance.

10.10 Public-Private Sector Co-operation

10.10.1 In recent years, industrial pollution as well as urban environmental condition has been worsening. In this regard, co-operation between the public and private sectors is an important input needed for environmental protection. There are four main areas, in principle,

where public and private sector co-operation in industrial and urban pollution management is possible:

- a. **Policies and guidelines :** New policy initiatives will be duly introduced to curb the current levels of industrial pollution and to bring it to a satisfactory level. This package of new policy initiatives will contain a blend of improved guidelines and standards; improved monitoring and enforcement of those guidelines and standards; and the introduction of newer market-based policies such as changes in relative prices; tax swaps and tradable discharge rights. The private sector will be vigorously persuaded for its strenuous involvement in the shaping of these guidelines and policies.
- b. **Information, technology and financial programmes to support pollution abatement :** Under the possible umbrella of the public and private sector co-operation, encouragement will be given for unhindered dissemination of new technologies to enterprises of all sizes. This may involve specific programmes to promote clean technologies, improved energy efficiency through access to information, and training and credit. Also, in the international arena, increasing pressure to comply will be exerted on firms through inspection of quality standards, since export companies who do not abide by the environmental standards will be exempted from large export markets. Some form of cushion such as concessionary credit requiring public funds may be needed for smooth adaptation of the change to market solutions of pollution abatement.
- c. **Privatisation:** Increased managerial and technical efficiencies as well as increased environmental accountability to the public can possibly be obtained by the privatisation of SOEs. This is likely as this will end the conflict of interest inherent in SOEs in relation to their self-assumed regulatory roles. In turn, these changes will provide incentives for SOEs to lower pollution intensities.
- d. **Municipal service delivery:** Through the possible commercialisation, or even privatisation of the concerned sector, more efficiency will be ensured in the delivery of municipal services such as solid waste disposal, water supply and sanitation. Across Asia, contractual use of the private sector services is becoming wide-spread in all of these municipal service areas. Also in Bangladesh, new management approaches involving the private sector will be scrutinised. However, in general, relevant policy and legal issues will be within the realm of the public sector, whereas the actual service delivery can increasingly be procured under competition.

10.10.2 The tools to achieve increased public-private sector co-operation are briefly mentioned below with an eight-fold modality of programme implementation:

- a. **Environmental standards and guidelines:** From 1995, series of consultations took place among the Department of Environment (DOE), and representatives of public and private sector firms. Consequently, a forum for dialogue was initiated. Continuation of this mode of work is vital, and hopefully, this attitude can further be strengthened during the elaboration of the remaining set of sector-wise rules and regulations. Moreover, the role of the Bangladesh Standard and Testing Institute (BSTI) will be enhanced commensurate with its capacity to provide necessary certification.
- b. **Incentive-based policies:** A review of the present environmental policy framework should be undertaken. This is to be done to see how a system of incentives, operating

through the price and tax system, can be designed to expedite compliance with the Environmental Protection Act and NEMAP. The government will establish close contacts with its counterparts in other Asian countries to compile examples of effective and efficient market-based policies. A framework for a joint government and private sector review will be set up to lay out feasible solutions to distribute the cost of pollution abatement and adoption of cleaner technologies in a rational way.

- c. **Access to information:** While a more incentive-based environmental policy will be developed, the government will emphasise to ensure continuous updating of basic data on pollution levels, and perhaps, even firm-specific compliance, and that information on these are available to the people. In this regard, close studies of recent experiences from Indonesia, the Philippines and China will be undertaken for applicable lessons.
- d. **Awareness:** For productive discussions on the industrial pollution issues, the prerequisite for the private sector is to educate itself in replicable, common and international practices on the subject. To achieve this, the private sector should spring up a set of internal activities on environmental topics. These activities should be designed to prepare the private sector for its role as a partner with the government in policy formulation and implementation. Some of the issues to be studied and discussed are : (i) the net financial implications of pollution abatement and improved waste management; (ii) the need for information and incentives regarding investments in cleaner technology; (iii) ways to introduce ISO 9000/9001/14000 into Bangladesh ensuring compliance, and (iv) new business opportunities emerging from improved environmental management. More concretely, since many firms will be required to invest in cleaner technologies, both general awareness of the issues and specific information on available options will be required. The Federation of Chambers of Commerce and Industry and the other business groups should consult with their international counterparts to establish a data-base in environment-related actions and investments, including the following :
 - i. ways to conduct environmental audits;
 - ii. improving factory house-keeping;
 - iii. models for process modification;
 - iv. examples of smart product design and its adaptation in Bangladesh;
 - v. consolidation of inefficient units;
 - vi. methods for conservation and recycling of inputs; and
 - vii. methods for upgrading of energy systems.

Companies that want to get access to updated information on the international agenda can also establish links with various green business networks such as ‘The Natural Step’ and similar groups. The government assistance will be mobilised for work in this area.

- e. **Voluntary compliance:** Once firms become more aware of international efforts at voluntary compliance, the process of modernisation should begin. Any company can, and usually should, start with a simple EMS which reflects the character and sophistication of that enterprise in relation to environment. As an enterprise gains experience and upgrades its operations, it can seek ISO 14000 certification to demonstrate that it has a high quality EMS in place. In many cases, this issue of certification is critical or controversial and is at the very heart of discussions on trade implications. It is possible that ISO 14000 certification may eventually become a practical requirement for success in trading in a small number of sectors and markets,

and it may also be a useful marketing tool for companies to demonstrate their commitment to environmentally sound behaviour.

- f. Financial incentives:** Both large and small companies will need financial concessions to afford necessary pollution abatement or process-change technology. Even access to capital, whether or not at subsidised interest rates, may help some firms as commercial banks may not be willing to lend for investments in pollution control equipment. In these cases, the government will facilitate investment in clean technology through the establishment of a 'Green Fund'. The fund may ideally be handled through the existing banking system, whereas, the screening of applications should be shared between the public and the private sector. The screening criteria should seek to ensure that the funding goes to companies that will have difficulty in finding regular bank credit for environmental investments. The financing facility should be for a limited time, say for five years. Several examples for such schemes can be found in SAARC countries, drawing on both the World Bank and the Japanese support.
- g. New business opportunities :** Environmental concern does not only incur costs for the private sector, it also opens up new business ideas. In the short run, various types of environment-related services to manufacturing companies such as environmental audits, engineering, import/export of environmental technology, environmental assessment, and ISO certification are all expanding. In case of urban pollution, possibilities for municipal service provision such as through the privatisation of collection and management of solid waste can be promoted. The case of increasing the application of renewable and more energy-efficient resources has a strong environmental impact, but is generally unexplored in Bangladesh. In this backdrop, at least five areas may be suggested for further studies and actions:
- i. preparation of renewable energy development programme;
 - ii. a feasibility study and assessment of wind energy;
 - iii. a socio-economic survey of the photo-voltaic pilot project for the Rural Electrification Board;
 - iv. assistance to Grameen Shakti's photo-voltaic market development project; and
 - v. field visits and training of staff involved in renewable energy development.

This is another area where constructive co-operation between the public and private sectors may yield important results. A public-private and donor cost-sharing approach to technology demonstration and dissemination may be explored.

h. Cleaning-up of hot-spot pollution areas:

The operation of the Hazaribagh tanneries in Dhaka is considered a major provocateur of environment pollution. In the path to improved co-operation, the government and private sector will take this problem up as a test case. Rather than completely relocating the tanneries, attempts will be made to set up one or more common treatment plants. The prescribed actions to clean up Hazaribagh are :

- i. The government
 - a. acknowledges the importance and relevancy of leather industry;
 - b. condemns the existing pollution levels i.e. leather industry;
 - c. directs the concerned ministries to produce a feasible solution to the problem;
 - d. ensures that, possibly through the Green Fund, part of the investment for a common treatment plant will be financed;
 - e. recommends a practical financing arrangement defining public and private sector burden-sharing in conjunction with the main stakeholders in the leather industry.

- ii. The leather industry:
 - ◆ abhors the existing production environment;
 - ◆ pledges full co-operation in the common plant solution;
 - ◆ accepts the binding financial responsibility, i.e. paying the waste charges necessary to finance the running of common plant(s); those who cannot afford the charges should probably shut down ;
 - ◆ seriously assesses the cost of cleaner technology and take a longer term view in the profitability of the industry;
 - ◆ informs and trains management staff and workers in environmental management.
- iii. Media:
 - ◆ shed light on the present situation, its health impact and ways to improve the situation;
 - ◆ mobilise the local community (residents, workers) to take active part in the process to clean up the area.

Steps along these lines will encourage collaboration, prove both political and private intentions and provide valuable experience for tackling other important, although perhaps less urgent, pollution management issues in Bangladesh.

10.11 Areas of Special Concern

10.11.1 A special note has to be taken of the environmental damage caused recently at Magurchara while exploring gas. Attention needs to be intensified on drilling for gas and oil in offshore areas. Following ensuing exploitation of coal deposits in Barapukuria, Jamalgonj in Khalispur, hardrock in Madhyapara, and limestone at Joypurhat, special attention will have to be given to avoid environmental loss or degradation. Similar attention should be there right from now while extending roads and highways into the remote areas of the hill tracts following establishment of peace in the area and setting up of tourist resorts in places like Kuakata, Mujibnagar, Madhabkundu and Teknaf. Conscious preventive steps in all these areas and cases will be in order in stead of mitigation of degradation after it takes place because of implementation of projects *prima facie* designed in public interest.

10.12 General Remarks

10.12.1 There is feeding frenzy in the present global economy to ascertain higher exploitation of resources, superior technological innovation, bigger markets and exponential profits. Monetary and psychological pressures are pushing people in the developing and developed parts of the world alike towards a blind profitability bereft of social costs or consideration.

10.12.2 There is a little opposition to a unified global economy but a little realisation about its social and environmental disadvantages. The concept of unity has a symbolic. The ideals of universal harmony and coming together have been accepted by all countries and have come to fleet high goal of humanity. 'One market' implies community of mutual exchange and co-operation and the 'global village' sounds like a healthy place of tolerance and living in prosperity.

10.12.3 There is almost no recognition that economic unification and technological uniformity are actually causing environmental destruction and the disintegration of

communities. Rather than bringing people together, economic unification is fostering divisiveness and creating a gap between the affluent and the lesser beings.

10.12.4 Information about the long-term effects of everything from uses of antibiotics to dependence on fossil fuels tend not to reach the least developed areas. And the alluring images in the media and advertising that are not accompanied by warnings about toxic wastes, erosion of grove lands, acid rain, or global warming, nor do they secure rights to choose - between the beneficial and the harmful.

10.12.5 As things stand now, we need to regain a balance between the local and the global positions. Even though the phrase 'think globally, act locally' is uttered frequently these days, the thrust of modernisation is mostly in the direction of globalization. Local cultures and economies are disappearing at faster rate, taking animal and plant species with them. Finding a sustainable middle path will necessarily involve active steps toward realisation of these effects and decentralised production and decision making.

CHAPTER XI

IMPLEMENTATION AND MONITORING

11.1 Introduction

11.1.1 Like any other Plan, the success of the Fifth Five Year Plan will depend on the proper implementation of its programmes and projects, implementation monitoring and post-implementation evaluation. This is particularly important in view of the fact that it is a flexible plan and plan projections will be revised based on evaluation of actual performance. Annual Development Programme (ADP) is the operational document of a Five Year Plan in respect of the public sector. It is basically a list of all public sector development projects undertaken during a fiscal year. While ideally, it should be a list of approved projects duly appraised by appropriate authorities, the list in reality consists of projects at different stages of approval including unapproved ones. The implementation of the public sector part of a plan involves the implementation of these projects in ADPs and policies supporting them. While for all practical purposes, plan implementation was essentially viewed as the implementation of the public sector projects, monitoring and evaluation of the projects, policy planning and policy implementation have received less attention. But with the reorientation of the economy towards a free market, the private sector will assume greater role and public policies, greater significance. So monitoring of their impact on the private sector and on the economy as a whole will demand greater attention.

11.2 Implementation of Plan/Projects

11.2.1 In the project cycle, project implementation is the most critical phase as it is determined by realities and contingencies. It is further determined by the initial conditions such as project approval status and timely commitment of fund. As mentioned above, ADP is traditionally composed of many unapproved schemes which affect project implementation. Project implementation consists of the following main stages which may overlap with one another:

- a. Feasibility study;
- b. Appraisal of project and acceptance by development partner (for aided project);
- c. Approval of projects and assigning responsibility of implementation to an agency;
- d. Appointment of project director (PD) and project staff;
- e. Setting up of project office (where applicable);
- f. Appointment of consultants (where applicable);
- g. Allocation and release of fund;
- h. Land acquisition (where applicable);
- i. Procurement of goods and services;
- j. Execution of projects;
- k. Evaluation of completed projects; and
- l. Impact evaluation.

11.2.2 Project approval : Strictly speaking, approval of projects should pre-date its implementation. However, due to delays in processing of projects or exigencies, sometimes implementation of a project begins even prior to its formal approval. In the recent past, there has been a marked improvement in the process of approval of projects. The government is also seriously considering delegating more power of approval to administrative ministries in

order to expedite implementation. This will, however, require further strengthening of the planning wings of some of the ministries for ensuring quality of project formulation and evolving an alternative institutional procedure for co-ordination.

11.2.3 Assigning responsibility of implementation to an agency : While there is no bar against ministries directly implementing projects, this is generally left to their subordinate agencies like autonomous bodies (e.g. Water Development Board for irrigation projects), directorates and departments. Usually, project formulation and preparation are also the responsibility of the implementing agencies in so much as they conceptualise most of the projects in line with the policy parameters given by the relevant ministries.

11.2.4 Appointment of project director and project staff : Once a project is approved, the relevant agency appoints a Project Director with the concurrence of the administrative ministry. The PD then has to appoint the project staff some of whom may be seconded from the ministry and/or the agency. The selection of a suitable PD is crucial to the project's success. Project implementation suffers frequently due to the selection of a wrong type of PD. Project implementation also suffers from frequent transfer of PDs and absence of PDs at project sites during implementation. Forward planning to complete the preparatory works of a project may help in partly resolving this problem. This issue needs serious attention of implementing agencies.

11.2.5 Allocation/Release of fund : The procedure for release of fund has become simpler than before. Yet it still remains one of the major causes of slow utilisation of financial resources for project implementation. Every year a new circular detailing procedures for fund release is issued by the Finance Division. The delay in its circulation along with occasional changes in the provisions make it difficult to get early release of funds. Release procedures for approved and unapproved projects are different and are more stringent in case of the latter. Financial powers delegated at different levels need to be re-examined and where necessary, may be enhanced. Standard procedures of fund release will also be put in place.

11.2.6 Land acquisition : Land acquisition, particularly in case of infrastructure projects has remained a sore point in project implementation. The legal procedures are cumbersome and delay the implementation of projects. The social cost due to displacement of people from the project land is sometimes high. Recently, however, large development projects like the Bangabandhu Bridge Project has put in operation the resettlement/rehabilitation of people affected by land acquisition. The government is also considering a set of guidelines for land acquisition and resettlement for private sector infrastructure development. All these procedures need to be made uniform and a clear legal and institutional framework will be introduced during the Fifth Five Year Plan. An important way to minimise social cost of land acquisition is to involve the beneficiaries of a project at the project formulation stage through formation of advisory committee. Quantum of land will be determined judiciously so that no land is acquired which will remain unutilised.

11.2.7 Procurement of goods and services : Delay in procurement of equipment and hiring of consultancy services are major problems affecting project implementation. The problem is particularly intractable in case of aided projects because the multi-lateral and bi-lateral development partners tend to pursue their own standards for procurement of goods and services. Such diversities compound the problems of procurement at the users end. The problem may be further confusing in case of co-financing (from more than one sources). To overcome these problems, after a careful study in the late 1980s, new procurement guidelines were issued by the Economic Relations Division (ERD) in 1992. Project directors and agency

officials need to be trained in the use of these guidelines. The effectiveness of the new system should also be reviewed and problems which may still persist should be resolved.

11.2.8 Construction management : Most investment projects entail construction of physical facilities like buildings, roads and embankments. But weather condition of Bangladesh tends to limit the construction season and so the pace of physical work varies over seasons. This together with the programme of mobilising financial and physical resources need to be spelt out in a time-bound critical path. Some components may be time-specific while others may float. A critical path analysis must identify both, while some flexible work may be delayed. In the sphere of physical works building codes are needed in order to speed up implementation. More importantly, in construction of public buildings, the role of the Public Works Department should be one of providing technical support to the project authorities in respect of design, tender evaluation and verification of work quality and the project authority should get the work done through private contractors. When a Ministry has a large number of building works like the Ministry of Education it may contract out designing works in a time-bound frame.

11.2.9 Execution of projects : Project implementation means strict adherence to design specification, approved cost, time-schedule and quality. Project authority should prepare a work plan for project implementation including a bar chart, critical path analysis, synchronisation/programming of various activities, identify milestone decisions, implementation procedures and techniques, review and monitoring mechanism. A project launching workshop, particularly in big and complex projects, should be held before the project starts and all rules, procedures and systems for implementation and monitoring should be discussed and agreed upon.

11.2.10 Evaluation of completed projects : In a real sense project implementation cannot be deemed to have been completed without its evaluation. The executing agencies are required to furnish to Implementation Monitoring and Evaluation Division (IMED) in a given proforma certain information. On the basis of such information and also field verification, project completion reports are prepared and submitted to NEC. At present a very limited number of projects are taken up by IMED for ex-post evaluation. Some ministries/agencies carry out impact evaluation of some of their activities through consulting firms. Efforts should be mounted to get an increased number of programmes/projects evaluated about their impact on the society at large.

11.3 Monitoring of Projects

11.3.1 Monitoring implementation of development projects is a relatively new idea. Many developing countries undertook large number of projects under their development programmes since the middle of the century. But no institution was created to monitor the implementation and evaluate the results of those development projects until recent years. Bangladesh experienced monitoring problems after independence and new institutions had to be built up. The primary responsibility of monitoring of projects rests with the sponsoring ministry/agency itself. Along with the officials of the executing agencies officers of the ministry, particularly in the development and/or planning wing, should undertake regular field visits to keep abreast of the progress of work and to help resolve bottlenecks of implementation. Monitoring by Implementation Monitoring and Evaluation Division in its present form cannot be all-embracing. This Division has neither the resources, nor the time to look into the details of some 1200 projects being implemented annually. In fact IMED was initially conceived to monitor critical projects in order to expedite their execution, not to obviate sectoral responsibilities.

11.3.2 For the purpose of effectively carrying out monitoring and evaluation activities several institutions and practices have developed in Bangladesh. From the government side these have emerged both at the central level as well as at the levels of corporations and departments. The development partners in Bangladesh also introduced their own monitoring and evaluation system. Although both of these systems operate fairly independently in the country, institutional linkages are often set up and used.

11.3.3 Besides, IMED and the planning wings of the administrative ministries, monitoring cells of some executing agencies, project implementation units (PIU) of some large projects, etc. Planning Commission, Statistics Division, Economic Relations Division, etc. also undertake some sectoral reviews of performance.

11.3.4 Monitoring arrangements

- a. Planning wings in administrative ministries :** Planning wings of the administrative ministries were created to strengthen their project planning and monitoring capabilities. Except for the planning wings of the Ministry of Agriculture, Fisheries and Livestock, Irrigation and Flood Control and Education, most of the other planning wings in other ministries are understaffed and ill-equipped to carry out the planning, monitoring and evaluation functions effectively. Monitoring is carried out mainly through obtaining progress reports from the project management, field inspections and monthly review meetings in the ministries. Representatives from Ministry of Finance, Ministry of Establishment, Planning Commission, ERD and IMED attend these meetings.
- b. Economic Relations Division of Finance Ministry :** ERD is responsible for aid mobilisation and also for programming of external resources for projects. They undertake quarterly and annual reviews of fund utilisation, especially foreign aid. Development partners also maintain constant liaison with ERD and inform them of disbursement situations from time to time. A cell to keep track of the issues related to aid line-up and utilisation is functioning in the ERD. The information collected and collated by this cell provide important inputs for the policy makers.
- c. Finance Division :** With the assistance from UNDP, the System for Autonomous Bodies Reporting and Evaluation (SABRE), as a computerised database is in operation at the Autonomous Bodies Wing of the Finance Division. The objective of the system is to provide standardised financial information on autonomous and semi-autonomous bodies which are regularly required for budgetary and financial control, economic planning and performance evaluation. SABRE envisages to cover all autonomous and semi-autonomous bodies as well as their units or enterprises falling under the budgetary control of the Finance Ministry. The Development Wing monitors progress of claims and disbursement of Reimbursable Project Aid (RPA).
- d. Development Partners :** Most of the development partners have developed their own system of progress monitoring, namely Tri-partite Review Meetings (TRM mainly by UNDP), Review Meetings, Review Mission Reports, Consultants' Progress Reports and Local Mission Reports, etc. Except for UNDP, the World Bank and the Asian Development Bank who pursue intensive monitoring techniques, the other development partners rely more on consultant's progress reports and review meetings with the government.

11.3.5 Monitoring by IMED : IMED is involved in the entire life cycle of a project - pre-project appraisal, monitoring during implementation and reporting on completion of projects as well as ex-post evaluation as discussed below.

- a. Pre-project stage :** Identification, formulation and appraisal of projects are undertaken at this stage. During pre-project stage IMED contributes as under:
- i. Undertakes cost rationalisation prior to submission of the PCP for approval (This has been discontinued from February 1997);
 - ii. Involves in the preparatory stage of ADP;
 - iii. Represents in the NEC/ECNEC/SPEC/DPEC/DSPEC;
 - iv. Checks rationale of estimate of costs;
 - v. Checks reliability of implementation schedules;
 - vi. Checks duplication, overlaps, if any, with other projects;
 - vii. Compares with experience of similar project(s) implemented before; and
 - viii. Checks manpower size, reliability and also the suitability of institutional framework planned for implementation of the project.
- b. Monitoring during implementation:** IMED monitors progress during implementation of projects through :
- i. Periodic Reports>Returns;
 - ii. Field inspection; and
 - iii. Co-ordination/Review meetings.
- i. Periodic reports/returns:** IMED has introduced a system of progress reporting for collection of various information on project implementation. The system attempts in translating the work schedule of projects into quantifiable work components and to relate the physical performance with the financial expenditure. In fact, the system follows 'PERT' (Program Evaluation and Review Technique) management system which the government desires to introduce in case of all development projects in the country. IMED presently uses different proforma for the purpose of collection of information about physical and financial progress of projects/programmes for their evaluation. The reports on the progress of implementation are examined by IMED and consolidated into Ministry/Agency-wise reports on physical and financial achievements vis-a-vis targets. Various implementation problems are identified on the basis of these reports and information collected by the officers of IMED during their inspection. These reports are then placed before the National Economic Council (NEC), Executive Committee of the National Economic Council (ECNEC) quarterly/periodically along with the recommendations of IMED for removal of bottlenecks in order to speed up the implementation of slow-moving projects. The NEC/ECNEC takes decisions on major issues which become binding on all concerned.
- ii. Field inspection :** On-site inspection of progress of implementation of projects is one of the basic responsibilities of the IMED. All the officers of IMED visit projects to identify problems/bottlenecks of the projects. In fact every month each sector officer is to inspect at least three projects grouped as follows :
- Project targeted for completion;
 - High priority projects;
 - Sick projects; and
 - Other aided projects.
- Projects targeted for completion during a financial year are generally inspected every quarter, high priority projects twice a year and other aided/sick projects once a year. Bottlenecks identified during inspection are conveyed through

inspection reports to the concerned Project Director/Agency/Ministry for corrective action.

- iii. **Co-ordination/review meetings:** IMED officials hold Co-ordination /Review meetings with the ministries/ divisions/agencies at appropriate levels and attempt to resolve problems/bottlenecks standing on the way of smooth implementation of projects. The unresolved problems are taken up by the Secretary/DGs with the concerned heads of ministries/ divisions/agencies. Some problems are required to be attended to at the level of the Ministers. Problems of more intricate nature which cannot otherwise be resolved are placed before the ECNEC/NEC for their decisions which are followed up by IMED until those are implemented.
- c. **Reporting on completed projects :** A project management is required to submit certain information through the administrative ministry to IMED as soon as a project is completed. Generally this takes place at the end of a financial year. IMED completes reporting on the projects completed in the preceding year in about 3/4 months of the following year. The findings form a part of the annual report presented to the NEC about overall implementation of development projects in the country.
- d. **Ex-post evaluation :** IMED also carries out ex-post evaluation of a few selected projects on a limited scale. The Population Development and Evaluation Unit (PDEU) of the Planning Commission was transferred to IMED. The personnel of this Unit are being used to gear up ex-post activities of IMED.

11.3.6 Monitoring of post-implementation operation (Sustainability monitoring)

- a. Sustainability monitoring is a recent concept. In Bangladesh, institutional arrangements for sustainability monitoring has not yet developed in most of the agencies. Some agencies undertake this function in a very limited way. These are Bangladesh Water Development Board, Bangladesh Rural Development Board, Bangladesh Academy for Rural Development, Bangladesh Institute of Development Studies, etc. The Ministry of Finance through SABRE made efforts to install performance evaluation of public sector agencies with limited success. IMED undertakes sustainability monitoring function on an *ad hoc* basis on assignments from the ECNEC, the Planning Commission and upon request from the ministries/agencies.
- b. Sustainability monitoring, though a very necessary tool in the development process, has not yet taken its desired shape in Bangladesh. The government is aware of this fact and this is emphasised in the Fifth Five Year Plan.
- c. The Environmental Impact Assessment that needs to be carried out during formulation of projects should be observed by all the concerned agencies and truthfully followed up during and after implementation. It is high time that adequate attention is focused on the issue of environment in the formulation and implementation of all development activities.

11.4 Project Evaluation

11.4.1 Formative or on-going evaluation : Formative or on-going evaluation or diagnostic study is undertaken both by the executing agencies as well as IMED. This type of evaluation is done during the implementation of large projects which are of programme nature and implemented over many years on a continuous basis. The projects are selected from major

sectors facing implementation problems. ECNEC and the Planning Commission sometimes ask IMED for undertaking on-going evaluation. In addition, agencies also request IMED for undertaking such evaluation. Data collection is done through field visits, discussions with project implementation authorities and study of the project document, previous reports, inspection reports, review papers, etc. These data are compiled and analysed and the evaluation report is prepared. A simple format for such evaluation is used. It contains information on objective of the project, approval status, date of actual commencement, expected date of completion, original and latest implementation period, original and latest estimated/approved cost, cumulative and component-wise latest physical and financial target and progress, existing implementation problems, general observations with suggested solutions/recommendations etc. These reports are published as a part of the Annual Report prepared for review by the National Economic Council. The NEC directs all concerned to implement the recommendations made in these evaluation reports. IMED follows up the implementation of the recommendations. Some agencies also undertake on-going evaluation of their respective projects, e.g., Population Control & Family Planning Department, Rural Electrification Board, Bangladesh Rural Development Board, etc.

11.4.2 Summative or terminal evaluation : Since 1983/84 IMED started evaluation of completed projects on a limited basis immediately after its implementation is declared complete by the executing agency. Subsequently, from 1986/87, all the projects declared complete during a particular FY are being evaluated. Evaluation of projects immediately after its implementation is complete, is termed as "terminal evaluation". Data collection procedure for terminal evaluation is similar to that of on-going evaluation. Collected data are collated, compiled and analysed for preparation of the evaluation reports. A simple format for terminal evaluation is used which contains mainly information on project's latest approved estimated cost and implementation period, actual expenditure and implementation period, cost and time over-run analysis, component-wise planned physical target and actual achievement, planned objective and actual achievement, etc. Measurement of "outputs" as against the PP targets is mainly emphasised in these evaluation reports including the reasons for non-completion or partial completion, if any, of any component as per project document. Problems faced during implementation of the projects are analysed and possible measures for avoiding such problems during planning and implementation of similar future projects are identified and incorporated in these evaluation reports. These reports are also prepared as a part of the Annual Report for review by the National Economic Council. Ministries/ divisions/ agencies prepare a project completion report (PCR), designed by IMED, for each of the projects declared complete by them. These reports contain information on seven major areas : (a) Project Description; (b) Implementation Position; (c) Financial and Physical Program (d) Achievement of Objectives of the Project; (e) Benefit Analysis; (f) Monitoring and Auditing; and (g) Descriptive Report.

11.4.3 Ex-Post or impact evaluation :

- a. Impact evaluation studies are comparatively a new activity in Bangladesh. As per the current monitoring and evaluation practices, the lead agency in this area is IMED though the basic responsibility of such evaluation lies with the respective administrative agency of projects.
- b. The IMED could not take the function of ex-post/impact evaluation on a systematic and regular basis owing to lack of well-trained manpower in the techniques of ex-post evaluation and other logistic support. However, since 1983/84, IMED started ex-post evaluation of selected projects and incorporated them in the Annual Reports. In the recent past IMED also implemented a pilot project with the

assistance of ADB, to strengthen evaluation capabilities of the division. More comprehensive technical assistance projects for enhancing evaluation capability of IMED and the relevant ministries are required to be developed during the Fifth Five Year Plan period. It is hoped that IMED will be in a position to undertake the function of ex-post evaluation in a more systematic manner on regular basis after the evaluation capability of IMED is increased through extensive training of the existing manpower, increasing the existing manpower strength and other logistic support. It may be mentioned that intensive impact evaluation has been carried out in the population sector since 1992. However, in a limited scale within the existing manpower of IMED, ex-post evaluation work has been taken in hand for all sectors.

- c. Some agencies also undertake impact evaluation. Among them Bangladesh Institute of Development Studies (BIDS), Bangladesh Rural Development Board (BRDB), Bangladesh Academy for Rural Development (BARD), etc. may be mentioned. Some of the development partners also undertake independent impact evaluation of their aided projects.

11.5 Monitoring and Evaluation Experiences

11.5.1 Pre-project appraisal

- a. IMED was assigned from FY 93 the function of rationalisation of cost estimates of development projects before the Project Concept Papers (PCPs) are finalised for submission to the Planning Commission for processing the PCPs for approval. The exercise was being carried out through discussion meetings. Cost rationalisation by IMED was recently discontinued. IMED, however, strongly feels that cost rationalisation is a very useful tool in project appraisal and must be carried out diligently by whatever agency entrusted with the task.
- b. IMED is represented in the different levels of project appraisal before investment decisions are taken. Officers at the minimum of Director level are to attend such meetings. But officers of appropriate level can not always represent IMED in these meetings owing to a limited set-up. Other organisations also are not always represented appropriately. This tells on efficient decisions.

11.5.2 Monitoring during implementation

- a. **Project inspection** : On-the-spot inspection of physical progress of a project is the most effective tool for monitoring its implementation. It has been observed that higher physical progress was achieved in the years with greater field-level inspections. With a view to achieving higher achievement of physical target, IMED inspection program needs to be intensified. The IMED inspection reports are sent to all concerned with foreseen identified problems and suggested solutions thereof. Recommendations made in the inspection reports do not always get proper attention of concerned quarters. Many senior officials including the Finance and Planning Ministers observed on various occasions that if IMED recommendations were implemented, there would be no obstacle to achieve desired progress in development programmes. Inspection of projects by the concerned administrative ministries and the executing agencies is also reported to be inadequate.
- b. **Review meetings** : Review of progress of implementation of development projects/programmes at the Ministers'/Secretaries' level has established to some extent a system of management accountability and closer interactions and mutual

appreciation of problems between the decision makers and project implementers facilitating actions and on-the spot decisions. It has been experienced that review meetings at higher levels contributes greatly to the progress of implementation. It is important to mention here that some ministries lack proper administration of monthly review meetings. They take long time to record and communicate decisions which jeopardise the subsequent corrective actions.

- c. **Special monitoring** : In order to improve the progress of implementation, initially 40 projects were identified as high priority projects and are being intensively monitored since January '92. To utilise the project aid allocation to the maximum, some 16 ministries/ divisions having large share of ADP allocation of budget (around 80%) have been identified and their projects are also being monitored very intensively since July '92. IMED also monitors progress of large procurements under development projects (above Tk. 20 million for goods & works and above Tk. 5 million for consultancy services). These measures of special monitoring are showing improvement in the case of high priority projects and the selected large aid utilising ministries/ divisions thereby showing improved overall performance under ADP.
- d. **On-going evaluation** : IMED undertakes on-going evaluation as diagnostic studies in a very limited way. This is mainly due to (i) inadequate knowledge of such evaluation techniques on the part of the IMED officials and (ii) want of adequate manpower. This aspect of monitoring during implementation needs more attention. It is hoped that IMED will try to have improved on-going evaluation of development projects.
- e. **Overall absorption capability of ADP** : ADP implementation capability has improved significantly from 56 percent of total ADP allocation in 1972/73 to 96 percent in 1995/96. But it is also observed that except for 4 years (FY'78, FY'81, FY'89 and FY'90), during the remaining 19 years ADP allocations could not be utilised fully. In case of PA, the allocation was utilised fully only in FY 1988/89. It may be mentioned here that, during the recent years, ADPs have been reduced in revised budgets. This situation of under-utilisation of even reduced ADP allocations may be attributed to over or un-realistic programming. In pursuance of an NEC decision a separate list of projects where foreign aid could not be lined up is inserted in the ADP.
- f. **Identification of implementation problems** : Identification of implementation problems and recommendation of measures for their solutions are very important aspects of monitoring of projects during implementation. It has helped reduce the number of implementation problems as well as the number of projects affected by those problems. As against 33 different implementation problems in FY'82, the IMED's 1995/96 annual report identified only 10 major problems as follows :
 - i. Delay in approval of project/revised project;
 - ii. Delay in release of fund;
 - iii. Delay in land acquisition and handover;
 - iv. Delay in lining up of project assistance;
 - v. Delay in calling tender and observing formalities;
 - vi. Delay in appointment of consultant;
 - vii. Delay in executing agreement with donor country/agency;
 - viii. Delay in completion of civil works on deposit fund;
 - ix. Delay in appointment of project personnel; and

- x. Delay in fulfilment of conditions precedent for loan effectiveness and disbursement.

Effective steps and decisions will be taken by the government to resolve these problems during the Fifth Five Year Plan.

11.5.3 Ex-post evaluation : The function of ex-post evaluation is very limited in Bangladesh as has already been discussed earlier. However, IMED undertakes evaluation of all completed projects immediately after those are declared complete. But impact evaluation function is still insignificant both in volume and in quality. This is attributed to the fact that there are very few officials in the IMED with necessary skill and experience to undertake impact evaluation. This area needs immediate attention in the interest of sustainability of development projects. IMED has recently taken up an expansion program for its organisation and hopes to undertake this function more systematically and effectively in future.

11.6 Monitoring of Private Sector Projects

11.6.1 Private Sector is visualised to be the engine of growth during the Fifth Plan. The government policy is to pave the way for rapid expansion of the private sector for transformation of the economy into a more effective market economy. The government will play "promotional" rather than "regulatory" role for the private sector and act as a catalyst through the sponsoring agencies, i.e. BSCIC for small and cottage industries, BEPZA for industries located in export processing zones and Board of Investment for all other cases. To facilitate the process, a Privatisation Board has been set up in order to review the performances of the public sector enterprises and to privatise them in order to sustain efficiency in operation. There is an Industrial Development Council under the chairmanship of the Minister for Industries. The concerned sponsoring agencies collect information and data on quarterly and yearly basis and furnish them to all sanctioning/registering authorities.

11.6.2 The Fifth Five Year Plan envisages 56 per cent of the Plan outlay to be in the private sector. It is, therefore, imperative that monitoring of the private sector projects be given proper importance. The Development Financing Institutions (DFIs) have their own system of monitoring the progress of their own financed projects. But so far, the national monitoring agency, IMED, has not covered private sector projects in its monitoring system. Considering the importance of the private sector, IMED should devise a system to monitor the implementation of the private sector projects also. In the process, Bangladesh Bureau of Statistics, Board of Investment, Privatisation Board, Export Promotion Bureau, Bangladesh Bank, BIDS, etc., may be involved.

11.7 Strengths and Weaknesses of Monitoring and Evaluation System

11.7.1 Strengths

- a. Through IMED a system has been institutionalised and integrated for project monitoring, information gathering and dissemination, problem solving, etc.
- b. IMED's linkages with the planning processes of the country provides it with the necessary planning-implementation feedback which is very vital for proper monitoring of projects.
- c. IMED's assessment of inherent weaknesses of the project managers in planning and implementation techniques finally culminated in the creation of the Academy for Planning and Development imparting regular training to managers in the techniques of project preparation, implementation and management.
- d. The system of field inspection and holding of review meetings at the minister/secretary level has established to some extent management accountability and

closer interactions and mutual appreciation of problems between the decision-makers and project implementers facilitating actions and on-the-spot decisions.

- e. In sum, the benefits of the central monitoring system have been manifold such as establishment of some management accountability, improvement in implementation and identifying institutional linkages between planning and implementation.

11.7..2 Weaknesses : In spite of the aforementioned contributions of the present monitoring system, the following weaknesses may be recognised which affect its operational efficiency :

- a. The need and importance of efficient monitoring and evaluation(M&E) activities is yet to be fully understood by the rank and file in the system;
- b. The lack of proper and prompt response from top managers on monitoring reports often frustrates the reporting authorities and agencies who then neglect the importance of quality reports. This results in inconsistent reports, which in turn, affects accurate decision-making;
- c. Implementing officers often consider the problems as personal failures, and thus instead of seeking help in solving these, try to hide them. They only report achievements and sometimes put the deviations and delays in the dark. Top management's lack of sensitivity and failure to appreciate problems and difficulties faced by the lower functionaries have to a great extent, contributed to this situation;
- d. Quality control of progress reports is absent or neglected at the project, agency and ministry/division levels;
- e. There are too few people in the central monitoring organisation to manage the monitoring of large number of projects efficiently;
- f. There is a lack of updated knowledge and techniques for efficient monitoring and evaluation both at the centre as well as in the ministry/agency levels;
- g. IMED's own lack of authority and at times inability to initiate problem-solving actions seriously demoralise the project managers who in turn lose interest in reporting problems. This also contributes to low quality and lack of accuracy of the reports.
- h. Monthly project review meetings in some ministries are not held regularly and others lack proper administration. It takes a long time to distribute decisions thus jeopardising the subsequent corrective actions.
- i. Submission of project completion reports after a project is declared complete by the ministries/divisions has not yet been developed as a regular practice.
- j. Physical units of measurement are sometimes not mentioned in the project documents as also in the progress reports from projects, thus rendering any meaningful interpretation of progress monitoring a difficult task.
- k. Even large projects do not always have full-time PDs.
- l. Sustainability monitoring lacks proper attention at all levels making investment ineffective.
- m. Monitoring and evaluation of private sector development activities have not been developed.

11.8 Policy Measures for Implementation of Fifth Five Year Plan

11.8.1 In order to achieve a successful implementation of the Fifth Five Year Plan, weaknesses mentioned in the previous sections will be removed. The following are some of the steps which will improve the situation:

a. Capacity building

- i. There must be increased capacity building in executing agencies, planning wings of ministries and IMED on project preparation, cost analysis and implementation techniques.
- ii. Monitoring and evaluation capability at agency/ministry level as well as at IMED will be strengthened by providing specialised training to the relevant officers both at home and abroad. Training institutions like the Planning and Development Academy, Bangladesh Institute of Administration and Management, Bangladesh Institute of Management, etc., may be conveniently used for this purpose.
- iii. Planning wings in the ministries/divisions will be strengthened with appropriate officers from the economic cadre so as to make them well equipped to handle monitoring and in-house evaluation of projects.
- iv. The administrative ministries/executing agencies will carry out close monitoring of projects under their jurisdiction so that IMED can concentrate more on selected priority projects.

b. Project preparation

- i. Project preparation with correct identification of components, appropriate design and specification, cost analysis, site selection, implementing agency, implementation strategy/mechanism including review, monitoring and evaluation procedure will be ensured.
- ii. Donor and the government requirements for project preparation need to be synchronised.
- iii. Strategic objectives will guide development planning.
- iv. Manpower requirement after completion of a project will be standardised and incorporated in the P.P. In cases where fresh decision is required as to the actual number of manpower to be retained it will be resolved jointly by Ministry of Establishment and Ministry of Finance within 3 months of project completion.

c. Approval of projects/Revised projects

- i. All unapproved projects in the ADP will be approved by September every year.
- ii. ECNEC decisions will be communicated immediately and preferably within a week after the ECNEC meeting for their speedy implementation.
- iii. Approval of revised projects : More authority will be delegated to the implementing Ministries to approve revised projects involving :
 - cost increase up to 25 per cent without exceeding sectoral/sub-sectoral allocation;
 - In case of approved projects, inter-project reallocation (upto 25%) without exceeding sectoral allocation;
 - however, project revision involving additional sectoral allocation, change of site, change of objectives, impact on environment, large-scale displacement of people will need Planning Commission's/ ENCEC's approval irrespective of cost involved; and
 - In case of aided investment projects decision on implementation issues arrived at tri-partite meetings will be considered as the basis for future project revision, if necessary.
- iv. A maximum time-limit of 3 months for approval of revised projects by competent authority will be adhered to.

d. Execution of projects

- i. Manual for procurement of goods, works and services for non-aided projects will be prepared by the Cabinet Division.

- ii. Building codes will be updated and administered properly.
- iii. Strict adherence to existing specified time limit in case of procurement of goods, works and consultancy services will be ensured.
- iv. Following time limit will be observed against respective activities :
 - Appointment of PD's and project personnel during appraisal/ preparatory stage;
 - Setting up project office within 3 months of approval of the project;
 - Fulfilment of conditions precedent for loan effectiveness and disbursement as specified in PRODOC/Credit Agreements;
 - Land acquisition/purchase: 3-6 months;
 - Examination of bills : 7-10 days;
 - Decision on payment of bills: maximum 2 weeks from the date of receipt; and
 - Submission of claims for RPA : maximum 2 weeks from the date of receipt.
- v. Project director/evaluation committee must strictly follow evaluation criteria/ procurement guideline of the government and donors for bid evaluation. Any irregularity or deviation on the part of PD/evaluation committee will be penalised. Likewise, any bidder trying to influence the decision of the project director/evaluation committee or any other authority will be summarily disqualified.
- vi. Any complaint or allegation against bid evaluation or procurement decision will be disposed of within 2 weeks at the maximum.
- vii. Existing Secretaries' Committee on Finance and Development will be used where necessary to resolve serious inter-ministerial issues.
- viii. Immediate hand-over of completed projects for operation and maintenance will be ensured.

e. Project Director

- i. All large projects will have full-time PDs and their continuity in office will be ensured even in promotion cases by upgrading their existing positions, if necessary.
- ii. Irrespective of their belonging to government or an autonomous organisation, all PD's will be delegated the same financial and administrative power.
- iii. Experienced persons will be appointed on contract as project directors in accordance with the ECNEC decision.
- iv. PD must promptly bring to the notice of his administrative ministry/higher authority any shortcoming/problems in project implementation which he himself cannot solve and the administrative ministry must promptly resolve the issue either on its own or through the appropriate Secretaries' Committee depending on the scope and nature of the subject.
- v. Training of PDs and project staff is a critical input in efficient project implementation. Appropriate measures will be initiated to promote institution building, hold regular courses on project implementation procedures and techniques, as well as refresher courses for PDs and to prepare handbook on project implementation.
- vi. A system for reward for good performance and punishment for unsatisfactory performance will be introduced. Risk-taking and initiative will be encouraged.

f. Monitoring

- i. Monthly project implementation review meetings in all the ministries/division will be held regularly and chaired by Minister/Secretary. Regular stock-taking of assets and level of utilisation will also be carried out.
- ii. Recommendations made in the IMED inspection/evaluation reports will be regularly reviewed in the monthly meetings of the ministry/division concerned and corrective actions taken.
- iii. Head of executing agency and PD when not resident at site will regularly visit project site and thoroughly supervise the work of consultants and contractors to ensure adherence to design/specification, cost, time-schedule and quality of work.
- iv. Joint field visits by the Planning Commission, IMED, concerned Ministry and PD will be undertaken from time to time, particularly in respect of important projects/programmes.
- v. Planning wing officers will inspect projects as per government decision regularly.
- vi. There will be frequent interaction with donors as soon as problems are identified. Donors' review missions may coincide with the quarterly co-ordination meetings of concerned ministries/division.
- vii. Micro-management of projects/programmes by any second agency other than the relevant one should be avoided. Donors also will be discouraged from micro-management of individual projects/programmes.
- viii. General Economic Division of the Planning Commission and Bangladesh Bank and BOI will develop a working mechanism for monitoring implementation of private sector projects : a Private Enterprise Council of the Prime Minister composed of businessmen may be appointed to this end.
- ix. There will be a standing liaison committee between the government and private sector to resolve problems encountered by the private sector investors as practised in the Ministry of Agriculture; BOI will be revamped and strengthened to this end.
- x. An effective system for penalisation of consultants/contractors for bad performance will be reviewed for either continuation or cancellation.
- xi. Small projects, within Tk. 100 million, if not started within 3 months of approval will be reviewed for either continuation or cancellation.
- xii. Seminars on monitoring and evaluation for senior managers and decision-makers will be arranged for effective functioning of the system.

11.8.2 Other measures : The Planning Commission will continue to oversee the implementation process and to co-ordinate with the relevant ministries and agencies to solve any problem that may arise. Special attention in this context will be given for delegation of implementation responsibility to local government bodies and to devise an institutional procedure to co-ordinate implementation in relevant administrative units of the country.

11.8.3 Operations and maintenance : Following implementation adequate attention will be given to operate and maintain the project. Needless to say, ICVR of the project will suffer if operation and maintenance are not proper. Involvement of beneficiaries and local government institutions will be the cornerstone of measures directed to this end. Besides, adequate funds will be made available and contracts to the private enterprise given in suitable cases for operation and maintenance.

CHAPTER XII

RESOLUTION OF CONFLICTS

12.1 Introduction

12.1.1 Development or growth implies change in the relevant field. Any such change affects the status quo in terms of position, entitlement, benefit or loss and expectation of the relevant people. The relevance is connotive of their roles or ambits of work as producers, consumers, change-agents or interested citizenry. In addition, change initiates, carries and at times completes transformation of the environment and the eco-system. Control of river flow, use of ground water, mining of hard rock and coal, building roads through hills and forests, use of insecticides and pesticides, and other manifestations and ramifications of the development drive transform the natural backdrop and the environment hitherto untouched, unexploited, unmoulded out of quiet serenity and stately tranquillity acquired over years of motivational and technological stasis and so much adored by the naturalists.

12.2 Need For Resolution of Conflicts

12.2.1 The resulting change in the status quo, the environment and the eco-system has to be accepted and supported by those who are affected or benefited, touched or hurt. As the theory has it, a change is justifiable when benefits emanating out of it are socially assessed to be more than costs or hurts it imposes. In the process those who benefit may do well by carrying with them those who may be adversely affected or are indifferent. Non-acceptance of, and opposition to changes yield conflict, which may, at times and on occasions, lead to rebellion. The process of acceptance and gaining support is a process of resolution of conflicts. If conflicts are not resolved yielding acceptance of, and support for the change, the scope of the latter does not widen desirably, and its rate immerses back into the status quo, the unchanged environment and the undisturbed nature or even worse. On the other hand, if conflicts are resolved institutionally and without disruptive societal abrasions, stability in socio-economic management is attained and sustained, the role players in all relevant fields of production and consumption are provided with an enabling environment and motivation to contribute their best and the desired change takes place to the end of socio-economic development of the society. All these contribute to increase of capital accumulation or creation of productive capacity and increase in efficiency of resource use. In the context of participatory planning, resolution of conflicts, around the planned change in the status quo, the environment and the nature is important in as much it defines, lays out, widens and sustains the conduit of change or development. Indeed, resolution of conflicts is the spirit of participatory planning.

12.3 Existing Elements of Conflict

12.3.1 In the situational context of Bangladesh, a number of elements contributing to the process of resolution of conflicts exists: contiguous location (excepting a few small enclaves) of the country, linguistic unity (excepting some areas in the hill districts), constitutionally accepted democratic ideals and commitment to prosper in freedom and rapid improvement in roads and tele-links throughout the country in recent years and demonstrated public support for them have brought the constituents of our society closer and made it more cohesive. To the end of sustaining and strengthening solidarity these positive elements ought to be further applied and used. Opening up of remote areas in hilly districts by roads and telelinks, signing of peace treaty

with the insurgent tribals in hill tracts, connecting the offshore islands with regular water transports, and out reaching tribal communities in Mymensingh and Rajshahi regions through spread of education and communication facilities will have definite contributions in removing conflicts latent in some regional differences and disparities. The opening of the Bangabandhu Multipurpose Bridge in June '98 will serve as the single most unifying bond between the southern and the northern regions of the country. Despite these well identified positive elements, in a number of areas, especially in the process of formulating and implementing planned socio- economic change, possibilities of conflict need to be recognised and steps delineated to resolve them over time.

12.4 Conflicts in Objectives and Mechanics

12.4.1 To start with, by way of enumeration, there may be conflicts while determining the Plan objectives. Conflicts on this count may arise in terms of both vision and mechanics. The vision of the society 15 or 20 years hence is likely to be different to different persons or groups. The enterprising and the rich may like to work for a society different from the one aspired by the labour or the poor. The expectations of the landless are likely to be different from that of the land-rich. The consumer's views of societal interest may be different from that of the producer's seeking protection. The difference in mechanics may centre round relative emphasis to be given on relevant indicators as well as variables of growth: this may demand answers to questions like those pertaining to, for example, employment creation or productivity generation, protection or liberalisation, generation of surplus in agriculture for financing investment in industrial development and others.

12.5 Constitutional Guidelines

12.5.1 The basic objectives of planned growth is constitutionally defined in Bangladesh. In Article 15 of the Constitution, provision of basic needs in terms of food, clothing, shelter, education, health service, gainful employment, reasonable recreation and social security to the citizenry through planned economic growth is accepted as a fundamental responsibility of the state. In this process, the state is to pursue (a) emancipation of the toiling masses, the peasants and the labour, and the backward communities from all exploitations (Article 14), (b) gradual removal of disparity in standard of living of the rural and urban areas through promotion of an agricultural revolution, provision of rural electrification, development of cottage and other industries and improvement of public health (Article-16),(c) adoption of free and compulsory education and removal of illiteracy (Article-17), (d) equality of opportunity and removal of social and economic inequality between man and man, equitable distribution of wealth and uniform level of economic development in all areas (Article-19), and (e) creation of conditions in which unearned income cannot be enjoyed (Article-20).

12.6 Promoting Consensus

12.6.1 Determined constitutionally as aforesaid, the objectives of planned growth have to be taken as given by all role players. In other words, the vision that we all have is the vision of a society meeting the basic needs of the people in an exploitation-free informed environment encompassing social, economic and opportunistic equality. Within their broad frame, discourses and deliberations in the parliament, political parties, professional associations, local government bodies and research institutions are likely to build up consensus on components of these objectives and relative emphasis to be given to them in changing contexts. In this process the

parliament may serve as the apex deliberative body taking into account deliberations and discourses in other bodies. Deliberations in the parliament will yield legislative decisions on policies, projects and programmes and manifest as contributions of the relevant political parties to the national strive at planned economic growth for meeting the basic needs of the people as mandated by the constitution.

12.7 Mechanics of Growth

12.7.1 There are two main components of mechanics for attaining the set objectives of planned development. In the first place, the constitution has laid down a set of premises. These are: (a) affirmation of the national will to prosper in freedom (preamble); (b) recognition of the people as the source of all powers of the Republic (article-7) and owners and controllers of all instruments and means of production and distribution (article-3); (c) meeting basic needs of the citizenry through attaining a constant increase of productive forces' (article-15); (d) return to individuals on the principle of 'from each according to his abilities to each according to his work'; and (e) taxation and authorisation of expenditures under the authority of the parliament (articles-83 and 90). Secondly, subject to the conditions set by the constitution, causative process of change in one sector because of changes in the inter-related ones is to be taken into account. Elsewhere, aggregatively these intersectoral relations have been spelt out in their composition and effects, changes and ramifications. In the present context, these, in turn, are implicative of gains or losses for individuals and groups and thus need to be understood, evaluated and accepted. The question centring round distributive justice vis-a-vis incentives for productive investment, or increase in defence expenditure vis-a-vis investment in education, for example, will have to be answered in this context.

12.8 Parliamentary Conduit

12.8.1 For continuous resolution of conflicts and differences in the process of attaining these objectives, subject to the constitutional mandates, the most effective conduit again is the parliament. Exogeneously, free, fair and regular elections to the parliament coupled with the freedom of information media will strengthen the parliamentary process. The other important contributing element in this process will be freedom of speech, conscience, movement, association and assembly for all citizens as guaranteed by the constitution. Endogeneously, from the functional point of view, for an in-depth analysis of issues and realistic delineation of the paths to be taken, strengthening of the relevant standing committees in the parliament seem to be in order. Open hearings and deliberations in these committees working throughout the year will contribute to transparent, accountable and responsive policy directions and decisions in this regard. Dialogues and deliberations instead of boycott and confrontation are likely to facilitate and converge at answers to issues at hand.

12.9 Role of Public and Private Sectors

12.9.1 Pertaining to this process, the parliament at the present time is expected to decide on two major issues. These centre around the choice of the public sector in complementation or supplementation of the instrumentality of the private sector as the major vehicle of growth. In recent years, there has been a relative relegation of the public sector as the constituent of 'commanding heights' usable by the state to regulate and to promote the economy. All sectors of the economy have been opened up for investment, production and operation by the private sector. Despite such an opening, the role of the public sector in development of infrastructure is acknowledged. Even in such an area, given the constitutional mandate to meet the basic needs

of the people through planned economic growth based on 'a constant increase in productive forces', choice between public and private sectors as a conduit for attaining productivity should centre around considerations of relative capability and efficiency in production and equity in distribution. If for building infrastructure facilities in certain areas or sectors, private enterprise lacks in capacity, the public sector may be deployed. If following setting up a public utility by the public sector, inefficiency in operation creeps in, a case for privatisation is built-up. For directly productive investment in agriculture, industry and in services, if the private sector has built-up capacity, generally public sector has no reason for deployment of additional resources or for interference unless social circumstances warrant it in the interest of both producers like small farmers and poor consumers. A consensus built on these principles will definitely contribute to constrain as well as to rationalise roles of public and private sectors to the societal benefit. Such a consensus will facilitate expeditious privatisation of the bloated and unprofitable state owned enterprises. The process, in its all constituent parts will contribute to shape up ethos involving market-orientation of the economy in support of democratisation of the political system.

12.10 Market Failures and Government Failures

12.10.1 Related to the choice between public and private sectors, general questions centring round market as well as government failures in the economic realm need to be answered. As the recent theory has it, the market may fail in cases of (a) externalities, (b) public goods, (c) poor information and (d) monopoly. Failure in this context in all these cases is connotive of inability or incapacity to attain the desired allocative efficiency. Each case of market failure provides a potential opportunity for government action garnering benefits in excess of costs. Consequences of market failure in case of poor information and monopoly are well understood; inherent conflict of interests that remain to be resolved through reformative measures in these two cases are also well-articulated, though each requires public interventions of its own kind more involved when information on market of future goods are non-existent. Such resolution may not, however, call for supplementation of the market mechanism. Externalities, in terms of costs, manifests in harmful effects of an individual's or a group's action on the welfare of non-involved secondary persons. In such an event, social costs exceeds private costs. In terms of benefits, externalities manifest in beneficial effects of group or individual action on the welfare of non-paying secondary parties. In such a case private return is less than the social return resulting in lower investment in the relevant ambit of production and consequent missed opportunities if left to the private enterprise alone. In the situation involving externalities the policy makers may carefully consider (a) the magnitude of external costs/benefits relative to the cost of government action; (b) the ability of the market to devise means of dealing with the problem without government intervention; and (c) the possibility that the political majority may take the intervention too far if the external costs imposed on the minority are not fully considered. Consumption of public goods result in spill-over benefits to secondary parties. It is costly or impossible to withhold such a good (e.g. national defence) from persons who do not pay for it. In such a case the market system breaks down as everyone gets an incentive to become a free rider. And when everyone tries to get a free ride, production of public good dwindles calling at times for intervention by the government. Private sector philanthropic and entrepreneurial solutions to certain public goods problems show us that the government action is not the only corrective way. In resolution of conflicts in such a field this limitation has to be considered.

12.11 Weaknesses in Public Sector Intervention

12.11.1 At least four factors weakening the case for public sector intervention or operation may be identified. First, possibility of voter ignorance and inability to recognise costs and benefits of public sector operation fully is quite high. In a representative democratic system, voters are the originators of public sector intervention and operation. The applicable self-interest postulate of free enterprise based democracy assumes propensity of voters to elect representatives offering greatest personal gains relative to personal costs. The group decision - making delinks outcome of an issue to the choice of the individual. Voters, as a result, are likely to remain uninformed on many such issues. They may make their evaluation of representatives on the basis of subset of issues that are of greatest importance at personal levels. In such a situation, legislative decisions are not always expected to pass the economic tests of productivity or efficiency. Second, working in the aforesaid backdrop, the politicians find it profitable to support special interests reflective of rent seeking and individual or group advantage at the expense of others. This follows from a postulate of public choice theory that pursuit of votes is the primary stimulus shaping the behaviour of politicians. More often than not, interests of bureaucrats may complement those of the interest groups in such cases. Bureaus may have propensities to expand their programmes to deliver benefits to special interest groups who in turn may work with the politicians to expand their bureau budgets and ambitions and career prospects and pursuits. Constitutional provisions in respect of equal treatment of all under law, removal of exploitation and regional disparity, ensuring religious, racial and gender equality and their strict adherence is one definite way to limit the power of special interests in using the political process at the expense of others. Third, in the public sector, where decision-makers do not have private property rights over the resources they control, the short-sightedness is another source of conflict between good politics and sound economics. In the public sector, voters, politicians and bureaucrats may support projects and programmes that promise eye-catching short-run benefits at the expense of not easily-identifiable future costs. In such a situation, there is always a bias against legislation that involves projects with immediate and easily identifiable costs and high future returns. Finally, economic incentive for operational efficiency in public sector enterprises is small. This does not indicate that employees in the public sector are necessarily incapable. It means that in public sector operation there is no direct relation between work and creativity on the one hand and public compensation on the other. No individual or group of individuals can capture relatively small profits yielded by improved operational efficiency in the public sector. Research over the last several years have shown that private enterprise, compared to public ones, has provided goods and services in the same field more economically or efficiently.

12.12 Need For Developing Institutions

12.12.1 Public choice theory, in recent years, shows that political action or government intervention can and, at times, does reduce economic inefficiency emanating from market failure. At the same time it also indicates that unconstrained intervention may result in programmes that waste resources. Understanding the shortcomings of both the market and the public sectors is important if we want to improve our present economic organisations. In delineating reform of the system, the challenge before us is to develop political, social and economic institutions, capable of bringing, to the fullest extent possible, the interests of producers, politicians, bureaucrats and voters into harmony with the general welfare of the society. And this challenge can be taken up by the parliament functioning in a milieu of democratic environment and partnership within and around. Likewise the challenge can be met

better by the political parties and various interest groups through adequate awareness and dialogues across the relevant income classes and voters.

12.13 Supporting Private Enterprise By Public Sector

12.13.1 Taking all these into consideration, as of now, the public sector will do well if it is geared up and pressed into supporting the private enterprise in all productive sectors of the economy. To this end, building up infrastructures, especially for flood control and large scale irrigation and generation and transmission of power, will be important steps. Given the preponderance of small and marginal farms throughout the country, large investment and multisectoral approach are needed, and the riparian dimension of water management, flood control and large scale irrigation are likely to remain as areas of selective and major intervention by the public sector. Small scale and minor irrigation involving utilisation of ground and surface water by individual or group of farms will be better accounted by the private owners and operators. The other important area of intervention by the government seems to be the financial sector in its parts meeting the needs for long term investment in capacity creation in the private sector and targeted lending aimed at poverty alleviation. The structure of deposits as is prevalent now may not allow the system to meet the need for long-term credit for industrial development. Besides, there are requirements for sponsoring, if not setting up, venture capital institutions and investment companies for deepening the finance. Credit for the poor, like wise, in the current situational context of widespread assetlessness and pauperisation, needs innovative credit support for amelioration and guarding against large scale social discontent. Added to these will be provision for facilities for health care and human resource development. Private sector enterprises are not likely to provide these in most and remote areas. All these will be taken up as definite items in the agenda of action of the government. And finally, there remains quite a large room for public investment in adaptive research and development in both industry and agriculture. In this context governmental sponsorship and intervention may be well suited in such fields as development and export of computer softwares, CAD and CAP, biotechnology, genetic engineering, survey and exploration of natural resources, etc.

12.14 Organisational Reforms in Public Sector

12.14.1 Related to the governmental intervention in these and other areas in support and supplementation of the private enterprise, is the issue of making organisational reform of the public sector agencies. As experience has it, most of the public sector agencies (BADC, WDB, PDB, BFIDC, etc.) were set up to attain objectives laid down at the time of their setting up. Due to changes in circumstances and generations of demand for services or products in newer ambits or areas, the objectives as well as the size and the nature of the relevant organisations warranted change or modifications. As has been observed, such changes were not brought about in most cases. This has made some parastatals somewhat aimless and ineffective in public estimation. The recent decision to abolish or down-size BADC is a case in point. In order to sustain the government's capacity to make the right kind of intervention in changing circumstances, such organisational changes and modifications should be slated for. The process may create discomfort or generate protests on occasions and at times. But despite that, a charted course is likely to be cost-effective in the relevant field of service, regulation or promotion and consequently, eliminative of avoidable conflicts.

12.15 Fast Track in Public Sector

12.15.1 The other important area of reform in this field will comprise creating scope for fast tracks in careers of employees serving the government and the parastatals. As of now, the track is the same for all irrespective of merit and performance. As a result service and product emanating out of the public sector as a whole are almost always inept and sluggish and often unsatisfying. Really meritorious and ambitious people are not attracted into the government and the parastatals these days. To attract the best and the brightest into public service and to obtain the most out of them in their creative years, setting up a different and fast track for the best performers and the standard setters will have to be evolved on the basis of logical analysis and through consensus of the relevant role players. Service rivalry, postponement of reforms, politicised and indisciplined conduct as have manifested out of the malaise thus far, testify to both the extent of inherent conflicts and the urgency to resolve them expeditiously.

12.16 Relation Between Central and Local Governments

12.16.1 In Bangladesh context elements of conflict are existent in the relationship between the central and the local governments. Despite a clear constitutional mandate to promote local government institutions with special representation of peasants, workers and women (article -9), no consistent programme has thus far been undertaken to this end. As of now, zilla parishads at district level are without elected heads; union parishads so far formally delinked from political affiliations at national levels are still not adequately heard and attended to; co-ordinating roles of elected representatives at thana level are yet to be defined in legal and functional terms; and local government bodies in three hill districts need to be organised to give shape and meaning to the recently concluded peace treaty with the insurgent tribals. The local government as a system have inadequate sources of locally raisable resources. As a result, responsibility, responsiveness and accountability to the local people cannot be cherished very much as uniform principles of administration and management at various levels and throughout the country. This inadequacy has placed a limitation on the process of participatory development as is envisaged now.

12.17 Needed Reforms of Local Government

12.17.1 Promotion of local government institutions, in the present context, may call for reform in at least four areas. The process of reform in these areas, in turn, will require resolution of conflicts, explicit and implicit, amongst the relevant role players. In the first place, appropriate organisations headed by elected public representatives capable of management as well as development at thana and district levels have to be set up. These bodies along with union parishads and pourashavas should be given more functions (e.g. in fields of primary health care and education and local irrigation infrastructure) and adequate co-ordinative and cohesive authorities. Action along these lines may be conflictive with the current situation wherein local MPs and officers of the central government tend to interfere and dominate. Secondly, all local bodies should be made responsible to the local people. To this end, the relevant law should provide for recall or removal of chairmen or members following passing of no-confidence motions against them by the local constituents or other members of the local bodies. As of now, even if a no- confidence motion is passed, chairman of a local body is removable only by or under the authority of the central government. In such a situation, the representatives elected to the local bodies tend to forge allegiance to the power that be at the central government vitiating the principles of responsibility, responsiveness and accountability to the local constituents.

Reform along these lines may not be implicative of erosion of the authority of the central government; on the contrary, such reforms will yield desired societal gains for the local people and in the process reinforce the central government in the mechanics of development. Thirdly, all these bodies excluding city corporations and pourashavas may be given wider fields of taxation or alternatively keeping their current fields of taxation unchanged, a pre-determined percentage share, say 12% of all revenues raised by the central government. If decision to share the revenues of the central government with the local bodies is taken, a principle for their equitable distribution on the basis of, inter-alia, (a) population, (b) development needs, and (c) level of local resource raising may be adopted to stave off exogenous considerations in distributing the pie. Also, periodic finance commission may be set up and used in a continuously changing context for determining the over all share of the local bodies in the central government's revenue and its distribution amongst the relevant local bodies in accordance with appropriate principles. This may imply a transient erosion of power and authority at various levels of the central government. This is likely to be more than made up through strengthening realistically the local government bodies for providing more and better civic services and higher utilisation of physical and social capital in their respective areas. An overriding adherence to the constitutional mandate by the legislators together with a strong commitment of the executive organ of the state for obtaining the maximum yield out of a given investment in physical infrastructure and social investment is likely to result in actions in right directions and resolution of conflicts in this regard. The recently completed report of the Local Government Commission has delineated actions and steps to these ends, which needs expeditious consideration by the government and the parliament.

12.18 Functional Delegation

12.18.1 Finally, following the tradition built up in Japan, the central government may do well by delegating responsibility for implementing selected local projects planned and funded by it to the local government bodies. Primary schools within an union, health centres or bridges within a district, for example, may be given to the relevant union parishad or zilla parishad for implementing out of project specific grants made by the central government. This way the technical capability of the local bodies may be enhanced as well as local participation and more efficient use of resources ensured. In some cases, established facilities in fields of health care, education, relief or welfare funded and implemented by the central government may be given to the relevant local bodies for operation and maintenance. This way the delivery mode of services may be desirably improved.

12.19 Local Government and NGOs

12.19.1 In recent years, quite a number of NGOs -private voluntary development organisations- based largely on grants and assistances from external sources - have come up to cover almost the entire country. Management of all these NGOs, excepting a few set-up by religious orders, is in the hands of Bangladeshi nationals. They have come to cover disaster relief, education, health, children's welfare, care of the old and infirm, afforestation, environment improvement, conscientisation and even election monitoring and voter's education. Most of them are registered under the Society's Act; a few have been incorporated as non-profit making companies under the Company Act as well. In all cases responsibility for management and accounting are well defined and laid out under the relevant laws and by-laws as conditions for receipt of external support. Given the traditionally weak functioning of the local government bodies vis-a-vis rather resourceful operation of NGOs and their relative success in the fields of

education, health care and conscientisation in a few local areas, some seem like having an idea that NGOs may over years make the need for local government bodies minimal or even unfelt. In some local areas, seething conflicts as between the relevant local government body and operating NGO apparatus have also been noticed.

12.20 Supplemental Role

12.20.1 In the future course of development such perception of conflict may not have a room for serious consideration. NGOs in their resourceful and innovative operation in local areas may supplement efforts of the central and the local government in the relevant fields; they cannot, however, be projected or prepared for supplanting or substituting the formal bodies of the central and the local governments. In fields of health care and education, innovative processes and procedures developed by some NGOs may as well call for emulation and replication by the relevant bodies of both central and local governments. Consensus, based on assessment of needs, performance and resources need to be built up on canalising the efforts of NGOs and vamping up the roles of local government bodies in this backdrop. Discussions and deliberations across various fora and relevant organisations for example, in the recently formed government-NGO Consultative Committee will be called for to fine tune the calling from time to time in this regard.

12.21 Private Property Contractual Rights and Obligations

12.21.1 Use of the private enterprise as the main vehicle for development demands delineation and enforcement of (a) private property rights and (b) contractual rights and obligations expeditiously, firmly and at minimum costs to the parties or the disputants. As experience has it, scope and span of economic transactions amongst multitudes of private producers, suppliers and consumers cannot widen smoothly till these demands are met institutionally. The institutional components in this field are: (a) the laws defining property rights and contractual obligations and prescribing penal measures for their violations and (b) the administrative-judicial system enforcing these rights and obligations and awarding penalties for their violations. Knowledgeable observers in this field opine that the set of laws enacted till date and in force now, despite their need for some marginal modifications, is adequate. The major problem, however, lies in their enforcement. The administrative - judicial system seems to have wide scope to improve upon its present level of performance in this regard. The procedure followed and the pace maintained in enforcing this set of laws adjudicating disputes that arise in relation to them are cumbersome, time consuming and costly. Shortfall in enforcement is perceived as a weakness of the system and erodes public confidence on the system. This perception limits the span of *suo moto* acceptance of legal rights and obligations by a large number of economic transactors. It will remain yet another challenge for the leadership to reform the system and to account for speedier, firmer and economic enforcement and adjudication to limit if not, to remove, conflicts in the transaction process pursued by multitude of producers, suppliers and consumers. Commitment at highest levels of the executive and judicial organs of the state together with close monitoring and periodic target-oriented training of the relevant personnel seem to be in order to this end. For supporting newer and smaller producers, suppliers and users in this regard, setting up of small causes courts in selected urban centres is likely to be helpful also. Adjudication of small disputes among small but budding entrepreneurs expeditiously and economically makes the business environment beautiful for spurring small activists into larger ambits of innovation and production. Obviously, the magnitude of the problem of enforcement as a whole may appear somewhat awesome at the start. Initial success in this field, however,

will make the relevant role players to take their rights as granted and obligations invariably dischargable by the society. Following initial steps in a time-bound frame this realisation by the majority is likely to lessen down conflicts and extend the scope and the span of economic transactions in the free and primarily private enterprise system.

12.22 Modifications of Laws on Property Rights

12.22.1 The laws on property rights that need modifications, in order to meet the changed circumstances, call for an in-depth examination and delineation. This will be undertaken by the recently constituted law commission composed of legal experts and practitioners in the field. The work of the commission and implementative actions on its recommendations will be a continuous process.. In the interim period, a number of areas, however, may be identified for immediate attention and correction for exuding confidence all around and spurring economic activities across various classes of producers and entrepreneurs spearheading the free enterprise. These areas are:

- a. land tenancy and tenure, particularly in respect of definition of family/household, agricultural use and agriculturist, subsoil or subterranean rights of 'maliks' (owners), cognisance of offences and penal provision for violation;
- b. vested lands and properties in the plains and common land in hill districts and tribal areas;
- c. copy rights, particularly in relation to the Berne Convention 1954, patent rights vis-a-vis the Agreement on Trade Related Aspects of Intellectual Properties (TRIPs), administered by the WTO and penal provisions for violations;
- d. insolvency and liquidation of business firms and industries, particularly, in relation to jurisdiction, cognisance, and expeditious processing and disposal;
- e. execution of decrees in relation to money suits;
- f. protection of minority shareholders of public limited companies and employer-employee relations in formal or organised sectors;
- g. strikes and lockouts and civil commotions; and
- h. unfair or inequitable access to or treatment by public utilities.

12.23 Marketisation and Control of Private Property

12.23.1 Earlier, in the heat of the drive at development based primarily on collective efforts and the public sector, the emphasis, clearly unexpressed though, was on the control of private properties. Recognition of the people as owners and controllers of the instruments and means of production as in the constitution, in the current context of marketisation should be understood as an enabling provision for using private property rights as an effective spurrier of production and commerce i.e. promoter of `constant increase of productive forces' throughout the country for the benefit of people as mandated by the constitution. This understanding seems to have already converged out of deliberation within major political parties. The labour in the organised sector, however, still seems to remain largely outside this understanding.

12.24 Administration of Criminal Justice

12.24.1 Apart from the laws relating to property rights and contracts, administration of criminal justice is another conduit for resolution of conflicts amongst individuals. In recent years as a litany of the neglect and partisan administration in the past crimes did not decline. The crime combating machinery of the government has definite scope for improving upon their present

level of performance. Socio-economic development cannot be accelerated in a situation pegged by frequent and widespread crimes and criminality. Observers point out that the current crime situation is yielded by (a) eroded values; (b) inadequate and inequitable opportunities for livelihood and social mobility; (c) anticipation of criminals based on past experience that criminality is condoned for political partisans; and (d) loss of confidence in the establishment. Erosion of values is partly the resultant of emphasis on individual effort or private enterprise propelled by forces of greed and profit. There is no denying that greed and profit are the very forces that propel private enterprise. In a value system conducive to private enterprise, greed is satisfied and profit earned by savings, hardwork, and creativity, and not by peddling of patronages centring around influence over, and access to the power that be at various levels of the society or the government. In this context, greed and profit-centred values need to change emulating of virtues of austerity, hard work and creativity. Seeming erosion in current values may thus be corrected by including, sustaining and cherishing these positive elements of the free enterprise system. Such an acquisition may come over time through the educational system and, following cues and examples given by leaderships in respective ambits of production and management, may enter into the cultural norm of the society as an important constituent.

12.25 Ad-interim Steps

12.25.1 In the interim period, however, a number of steps seem to be in order for attaining and sustaining equal opportunity and social mobility. These are :

- a. quickest possible spread of primary education and health care;
- b. relatively more emphasis on scientific and technological education and training;
- c. merit-based and need-blind admission into higher educational and training institutions followed by need-based extensive and full financial support by central and local governments and private bodies and endowments;
- d. depoliticised merit-based affirmative recruitment, and performance-based promotion and deployment in government and parastatals and other organisations receiving public financial support or lawful recognition;
- e. equitable access to public utilities and credit institutions; and
- f. enactments enjoining, promoting, and compelling non-discrimination on grounds of gender, religion, race or political affiliation in all public and private organisations.

12.26 Role of Political Leadership

12.26.1 Confidence in the establishment may be sustained and cherished by the administrative-judicial system. The process is likely to be accelerated through provision of positive cues by the political leadership both within and outside the government. Within the government, the political leadership should always encourage dispensation and decision-making within the formal structure and following the formal procedure of the government. Informal structures and procedures may be used to supplement the formal ones - not to supplant them as has been the case in the past. All concerned may note, loudly and clearly that if in the process of governance informal structures and procedures supplant the formal ones, the state as an organisation, as the theory has it, ceases to exist. Likewise, the political leaderships outside the government has to be conscious of the societal requirement to correct the process of governance as constructive critics, and not to supplant it in their drive towards political ascent and power.

12.27 Impartial and Fair Dispensation

12.27.1 Impartial and fair dispensation by the administrative and judicial systems without fear or favour is a major building-block of public confidence. An apprehension of partial or unfair dispensation may make an accused, even if he is innocent, flee off as a fugitive or drive him out of the society as a rebel. Similar apprehension will encourage people at various levels or local areas to dispense out immediate justice as perceived by them without taking resort to the institutional course. The other important building-block is expeditious dispensation. Inexpeditious and cumbersome dispensation tantamounts to denial of decision or service desired by the people from the establishment. This makes them avoid and ignore the establishment and, at times, to take law in their own hands, thus undermining the establishment. Making dispensations and decisions expeditiously at all levels need, therefore, be aimed at as a conflict-preventive measure.

12.27.2 Three Needed Steps: At least three steps seem to be in order in transforming the administrative-judicial system in the right direction. First, as mandated by the constitution (article-77), the office of ombudsman should be set up. With powers to investigate any action taken by executive organs of the state, this will provide an important input to make the decision-making in the government appropriately transparent and create ethos cherishing accountability and responsibility in public service by all public servants and authorities. Second, parliament may expeditiously enact laws regulating service conditions of persons in the service of the republic as mandated by the constitution (article-133). Till such time an appropriate legislation follows, the constitutional recognition of the traditional government servants as persons in the service of the republic, dispensation of services and decisions by them may not be as impartial and fair as desired. Needless to mention, partiality and unfairness in this process are likely to generate discontents, protests and other manifestations of social conflict. Third, the most important conduit for resolving inter-personal and inter-body conflicts is an independent judicial system. At levels where adjudication by the judicial system touches, affects and benefits the multitudes, constituents of its independence, at times and on occasions may be lacking. To obviate discontents and conflicts arising as such, the founding fathers enjoined in the constitution separation of the judiciary from the executive organs of the state (article-22). Despite rhetorics over years, this has not been done in relation to the lower judiciary. The task of separating the judiciary from the executive organs of the state warrants completion for sustaining amity and consequent stability of the societal frame.

12.28 Corruption

12.28.1 The administrative and judicial systems are usually perceived as responsible for combating corruption. Corruption is a crime committing of which results through collusive arrangement between committing persons and persons legally and morally responsible for combating such crimes. When persons legally responsible for combating the relevant crime abets such committing they also commit the same or similar crime. Viewed as such, prevalence of corruption is indicative of not only scale commission of crimes but also erosion of the state apparatus legally and morally responsible for combating crimes and punishing the criminals. Corruption, as of now, is generally believed to be quite widespread. It is perceived as a societal disease impairing the vitals of the society. This, in turn, is ramifiable in obfuscating and limiting the process of socio-economic development of the country. Such an impairment and obfuscation make people lose confidence in the system and breed conflicts as between those

who are parties to and gainers from corruption and those who are not and as such stand to suffer or lose from corruption.

12.28.2 Categories of corruption: Analytically, corruption may be grouped into four categories. First, corruption may creep into the formal decision-making process of the state at high levels. The constitution, the laws in force under the constitution, the state organs and the authorities set up under the constitution or laws under the same, delineate the formal structure and the procedure for decision making in the state. If in this process informal structures and procedures supplant the formal ones, vital state decisions may not be taken in public interest. Decisions in such cases are either reflective of abuse of formal power or extension of authority not required or warranted under the relevant law. In such cases state decisions are the resultants of access, influence and patronage and serve vested interests of groups or quarters of the decision-makers. As theory has it, these are the cases of state corruption or corruption at high levels. Second, corruption creeps in administering regulations and providing services in non-economic fields of state activities or operations. This may be categorised as departmental corruption in non-economic fields or transactions. Undue and underhand payments for correcting land records, servicing or avoiding warrants and summons issued by lower courts and quasi-judicial authorities, issuing passports, admitting patients into hospitals or students into better schools or colleges and getting driving licenses or fitness certificates for vehicles are examples of corruption of this category. More often than not, such payments are made to expedite the process of certification in respect of conformity with the relevant regulation or receiving the needed administrative service. These do not result in giving benefits or services which the underhand payers are not entitled to; these merely expedite or smooth out the arcane or otherwise ineffective administrative process. The resulting transaction costs in such cases of corruption is relatively lower. Third, there are cases of under-hand payments to departmental decision-makers for economic transactions benefiting the payers at the cost of their competitors or peers. These may be categorised as departmental corruption in economic fields or transactions. Making specifications of a set of work or a plant in conformity with advantage to a chosen contractor, supplier or manufacturer in preference to others, award of contracts for or work orders to those having under-the-counter connections, false certification of works done or materials received are examples of corruption of this category. In most cases such payments yield direct pecuniary benefits to the payers to which otherwise they may not be entitled. The transaction cost involved in such cases is relatively high. As observers perceive, such cost usually accounts for a portion of pecuniary benefits accruable to the first party to the collusive arrangement. Finally, corruption manifests in avoidance of lawful pecuniary obligations and liabilities in collusion with those entrusted to enforce or adjudicate these. Evasion of tax payment, over-invoicing of imports and under-invoicing of exports, usurpation of other's properties, concealment and use of public properties for personal use, etc., are examples of corruption of this kind. In one way or other, these are cases of misappropriation of public resources or funds.

12.28.3 Corruption at High Levels: Of all these, corruption of the first category i.e. state corruption seems to be the most destructive. Corruption of this type, as already indicated, manifests in taking basic or vital decisions of the state on considerations other than public interest. Constitutionally, all powers of the republic belong to the people and their exercise on behalf of the people has to be effected only under and by the authority of the constitution (article-7). Exercise of these powers has to be thus in, and in furtherance of public interest by constitutionally defined authorities following constitutionally laid down procedures. Considerations other than public interest in decision making in such cases or levels may centre

round personal or group interest. Serving personal interest may yield pecuniary benefits to the decision-maker; serving group interest may strengthen the position of the decision-maker in the group to the detriment of others outside the group. The basic decisions emanate out of the well-defined organs of the state: the executive, the legislature and the judiciary. In case of Bangladesh, a sudden announcement of an erstwhile Minister for Foreign Affairs recognising the government of an intermittent rebel group in Cyprus or appointment of a junior officer as the head of our permanent mission in New York on the basis of his relationship with the head of the government in the 1980s or giving away unaccounted amounts to MPs of the ruling party out of the Prime Minister's Relief Fund as was done in the past may be cited as examples of state corruption originating from the executive organ; legislation providing for tax-exempt import of automobiles for the law makers themselves borders on being an example of not a very good law originating from the law makers themselves. Formation of a special tribunal outside the normal courts for trying persons allegedly committing offences under the ordinary law of the land as was done for the so-called Agartala conspiracy case and willing association of judges at the highest level of the judiciary in such a kangaroo court in the late 1960s may be cited as the other example of state corruption pertaining to or involving a few members of the judiciary. If basic decisions of the state by the executive, the judiciary or the legislature are taken on personal or group considerations, or sold to the highest bidders, then the very social contracts underlying the formation of the state are violated and the public trust reposed on state authorities or organs, betrayed and eroded. Entrenched behind the power of the state and its resources, corruption of this category is the most difficult to combat and contain. Despite the difficulty, given its serious destructibility, this type of corruption calls for utmost attention of all concerned.

12.28.4 Corruption in Non-economic Fields: Corruption involving administering regulations and providing services in noneconomic fields may be considered from the view points of both the collusive parties. From the side of those administering the relevant regulations and services, (a) low remuneration package (b) ineffective hierarchical supervision and (c) inadequate public vigilance are the propelling inputs into this collusive arrangement. From the side of those gaining or benefiting from administration of the relevant regulation or provision of the needed service (a) scarcity and consequent large size of the perceived or the realised value accruing from affirmative administration of the relevant regulation or expeditious receipt of services needed, (b) mad rush for competing out other potential receivers of benefits or services, (c) absence of group unity or action against unethical conduct of the relevant administrators, regulators, service providers and peers and (d) inadequate public vigilance are the originating elements. To combat corruption of this category, these propelling and originating elements need to be controlled or eliminated. Of these one important step will be to increase the remuneration package of the administrators of regulations and providers of services. In case of corruption in such a field, social cost (legal fees payable to the state + payments made to the collusive functionary for obtaining a service or a regulatory benefit) is more than the prima facie legal cost. A part of this divergence may be captured for increasing the formal remuneration package of the relevant regulators and service providers while giving the relevant benefits or service in a corruption-free way. This may be supplemented by decreasing the bloated size of the relevant organisation. The other important step will be in terms of reducing the scarcity value. This may be done by dismantling the unneeded regulation and increasing supply of the needed services. Opening of a clinic in the capital city for instance, may be made to require registration by one authority instead of permission from as many as 3 as is reportedly the case now. All citizens except insolvents and fugitives from the law may be made entitled to passports as a matter of right. Likewise, more schools, hospital beds and street lights may be set up in areas of scarcity

under well publicised programmes. Admission into publicly supported better colleges may be made contingent on merit alone encouraging the gifted students to converge to centres of excellence as a matter of course as is the case in Singapore.

12.28.5 Corruption in Economic Fields: Similarly, corruption involving economic transactions may be considered from the sides of both supply and demand. Underhand payments or gratifications may be demanded by a departmental decision maker only when he has sizeable control over pecuniary benefits of the potential gratification provider. By pursuing (a) vigorous deregulation, (b) expeditious privatisation, and (c) promotion of competition in all sectors of production and consumption in appropriate cases or areas such a position of control can be sized down to canalise departmental operations into promotion of economic activities. Likewise illegal gratification may be supplied or provided by a producing or consuming person or unit outside the government when such a supply is likely to (a) yield high pecuniary benefit, (b) goes unprotested by competitors and (c) is not noticed by the relevant supervisors of the gratification receiver. Promotion of competition in the relevant ambits of production and consumption coupled with internal and external vigilance on transparency or otherwise in decision-making obviously are the steps that are in order in this respect.

12.28.6 Other Corruptions: Corruption involving avoidance of lawful obligations and liabilities is indicative of inadequate adherence to the rule of law and prevalence of elements of a weak state or a banana republic. In such cases, avoiders reach collusive arrangements with the administrators and adjudicators of the relevant laws defining and executing pecuniary obligations and liabilities. Here again, from the side of demand (a) poor remuneration package, (b) lack of professional pride, and (c) inadequate internal and external vigilance are the collusive elements. From the side of supply, (a) ability to influence the enforcing agencies, (b) non-imposition of tax on unhonoured pecuniary liabilities and restrictions on further asset acquisition before meeting lawful pecuniary obligations and (c) inexpeditious adjudication by the relevant courts contribute to the miasma. To make the matter worse, the malaise has its lopsidedness: mostly the rich avoid meeting lawful obligations and liabilities while the poor face stiff enforcement. The widespread loan default in development financing institutions and nationalised commercial banks relative to default of small agricultural borrowers of the 2 agricultural development banks and almost no default in the Grameen Bank is indicative of this. The recent infusion of additional capital in the nationalised commercial banks through bonds guaranteed by the government has shown acquiescence of the state apparatus to absorb the loan default of comparatively big borrowers through permanent transfer of the burden on the shoulders of common tax payers. The legislation debarring candidacies of the loan defaulters for election to the local government bodies and non-imposition of similar restrictions on candidacies for election to the parliament is indicative of a not-very-well-appreciated discrimination breeding discontent in the society. To combat corruption of this category, the contributing factors both from the sides of supply and demand, need to be corrected. Commitment of the government in particular and the society in general will be the basic propellers to account for the needed corrections of the norm and associated circumstances.

12.28.7 Syndication of Corruption: As ardent observers in the field have it, corruptions in all these areas tend to acquire elements of syndication. Syndication in collusive crime committing yields benefits, pecuniary or otherwise, across hierarchies of relevant organisations responsible for providing services or enforcing cleansing in accordance with law. Needless to say when syndication covers the relevant segments of such an organisation, corruption becomes an inseparable procedural element in it in-as-much as it is supported and encouraged across the

relevant hierarchies. This makes it very difficult to combat. In such a situation, the sincere and honest in their minuscule minority fades out as nonconforming and inefficient. This means, in other words, corruption needs to be confronted at the beginning and, in the inherited situational context, right now.

12.28.8 Public Awareness and Vigilance Against Corruption: Ultimately, public awareness and vigilance turn out to be the price of a clean and corruption-free state. While building up public awareness and vigilance as components of a tradition sustaining and promoting democratic governance may take time beyond a life time, freedom of information and media and independent judiciary have much to contribute in the interim span of time. Fortunately for Bangladesh, the supreme court seems to have come up with effective guardianship in this respect. The recent justifiability of judicial proceedings against a former president and a number of ministers on charges of corruption irrespective of their future outcome in terms of innocence or guilt, as upheld by the higher judiciary of the country has set up a tradition of adjudicable public accountability at highest levels. Freedom of press, following recent amendments of laws relating to press and publications and special powers of the government and setting in of an environment of tolerance for views have also come as important bases of vigilance against such corruption. These need to be followed up by an enactment for and in favour of freedom of information entitling and enabling the citizenry to obtain information on matters relating to personal or public interest. Additionally, in the light of experience of other countries, full verbatim recording of deliberations and decisions of meetings of the cabinet, its subcommittees including the purchase committee and taking these outside the cover of secrecy or confidentiality (except in case of security matters) will be helpful. Such procedural reform will impart justifiability of executive decisions following the principle of open adjudication pursued by the judiciary. Formation and operation of an ethics committee in the parliament along with continuous functioning of standing and adhoc committees and open public hearings and deliberations in them will provide restraining elements against possible corrupt conduct at all levels. In addition to the public accounts and public undertakings committees, there should be a standing committee on finance and budget in the parliament. Arrangement should be made for holding more frequent sessions of the public accounts committee and providing adequate staff support for investigation and analysis. All budgetary measures comprising revisions in budget passed and supplementary appropriation should be processed through the committee on finance and budget deliberating and deciding through hearings open to the public. Needless to say, the legislative control over the budgetary expenditures of the executive may become meaningless in functional terms if statements of such expenditures are placed before the parliament after these have already been incurred as has been the inherited practice. To an extent these measures will desirably limit perceived interference of the legislators into executive actions and decisions at national, regional, and local levels vitiating the lawful procedure based on the principle of separation of powers for discharge of executive responsibilities at various levels of the government.

12.28.9 Two Other Steps: In addition to the measures specific to the type, at least two other steps of general nature and to an extent, overlapping with others already mentioned, need to be delineated to combat corruption. First, the political leaderships at various levels may provide cues to the bureaucracy and the society for discharging duties and responsibilities honestly and legally. Such cues should also encourage the political activists and the people to adopt the desired values sustaining and cherishing legal and moral incorruptibility. In this context one may cite examples of political leaderships in Singapore and Malaysia. It needs to be noted, corruption in its various categories will be impossible to combat successfully unless the political

leaderships at various levels of the government can and actually give cues in the right directions. Second, following provision of conducive cues from the political leaderships, the risk of the parties involved in corruption has to be demonstratively made higher than the pecuniary or other benefits accruing to them from the collusive arrangement. This is largely the responsibility of the administrative and judicial systems of the country-having a large scope to improve upon the current level of performance.

12.29 Gender Question

12.29.1 In recent years, questions centring round gender equality have become important and demand to be answered expeditiously. Women comprise 48 percent of the population of the country. Of this, 86 percent live in rural areas. The average age of women at marriage is less than 18 years; on average a woman produces four children in her life time. Social norm against remarriage of widows coupled with an average age gap of 10 years between men and women in wedlock result in 90 percent of widowed population being females. Likewise, women comprise 94 percent of the divorced population of which 54 percent are below 24 years of age. As of now, participation of females in labour force amounts to over 12 percent; in the manufacturing, female participation is over 34 percent; and over 20 percent of all households of the country are functionally female headed. Constitutionally, women in Bangladesh have equal rights with men in all spheres of the state and of public life; they cannot be discriminated against or subjected to any disability or restriction with regard to access to any place of public entertainment or resort or admission to any educational institution on grounds of being women; they are entitled to special provisions in their favour to be made by the state (article 28); they cannot be discriminated against in respect of any employment or office of the state (article-29). In addition to these fundamental rights, prevention of prostitution (article-18) and ensuring participation of women in national life (article-10) are constitutionally accepted as two fundamental principles of state policy. Further, guaranteeing of fundamental human rights and freedom and respect for the dignity and worth of the human person is adopted as a principle fundamental to the governance of the country (article-11).

12.29.2 Situational Considerations: Despite these constitutional rights and entitlements, women across both classes and religions, have quite a scope to improve upon their status and condition in terms of equality with men. If progress in this respect is not made or slowed down, conflict breeding out of gender inequality as already observed, will increase in intensity with fuelling from the borderless information media and fast changing economic circumstances. Specific to the conduits for making progress are the following considerations:

- a. Women's lives are organised, (particularly in rural areas) within a framework of biological, labour and social reproduction of a society in which management of female sexuality is central to the dominant male interest; in this frame high value is attributed to female sexuality; this makes females acutely insecure, requiring a cultural norm of isolation and protection to avoid possible female violation; in this cultural norm, a violated female irrespective of causes or manner of violation, is treated as a female fallen from virtue and left to earn her livelihood in any way she can; in this process, resort to the oldest profession or prostitution by her is acceptable without its being much stigmatic on male customers and patrons.
- b. Under changing economic conditions, the aforesaid cultural norm breaks down, a continuous deviancy from the acquired cultural norm about womanhood starts to win over degradation of women as human persons; to accentuate such a break-down, dynamics of those who break the norm, those who tolerate the breaking and those who

uphold the norm need to be assessed and understood; as is perceived such a breaking down has its class dimension; for the poor material or economic circumstances may make men encourage women to break the norm and come out of chains of isolation and protection.

- c. As women come out of isolation, veils and chains into a working and pulsating lives, they are likely to confront the 'double day' and consequently even 'double exploitation' through the interplay of gender and class relations; the prevailing gender relations do not usually release them from the primary responsibility for homestead chores even when and after they enter the formal work place or the job market. Thus an extension of female participation in male dominated work-world needs to be accompanied by changes in traditional codes of household duties enjoining amongst others, cooking of meals and rearing of children on females alone.
- d. Evidently, there is male bias in the set of family laws in force; women across both classes and religions have to struggle over their (i) inheritance rights in natal family; (ii) rights to choose husbands; (iii) sexuality and pregnancies in marriage; (iv) rights to the dowry which usually accompanies her at marriage; (v) property rights in the event of husbands' death; (vi) rights over property and to subsistence in the event of divorce or desertion; (vii) custody rights over children, their subsistence and education; and (viii) procedure of separation and divorce. The laws relating to nationality in marriage, equality of pay, maternity leave, protection against sexual harassment at work places, etc., are either absent or unenforced.
- e. Equality apart, research across countries in recent years shows that female education has marked negative relation with fertility and infant mortality and strong positive relation with life expectancy; likewise schooling is found to have important influence on choice of number and quality of children; these are effects that influence long term growth of a society. Specific to Bangladesh, equality of women with men is likely to have positive effects on poverty alleviation. The female headed households constituting over 20 percent of all rural households are about the poorest reflecting widowhood, divorce and abandonment, all virtually uncared for by the society.

12.29.3 Policy Measures: These five considerations point out as many mutually reinforcing policy measures fraught with elements of social and economic conflicts:

- a. Breaking the cultural norm centred round high valuation and consequent protection of female sexuality: this is likely to create and even intensify conflict with the fundamentalists and uneducated male chauvinists; widespread liberal arts education, female literacy and collective effort by conscious and educated women to break the traditional gender codes are likely to limit such conflict down to its ultimate winning over by the forces favouring gender equality;
- b. Providing women access to power through access to material resources: to this end some definite ways are: (i) credit support following the principles developed by the Grameen Bank and some NGOs working in the field; (ii) adopting a system or norm for joint registration of properties by married couples during marriage; (iii) reform towards equitable inheritance law; (iv) affirmative female employment policy; and (v) election of women members of the parliament and local government bodies (against seats reserved for women) by universal adult franchise of the relevant constituencies;
- c. Changing the traditional gender code of division of duties of males and females: this can be done through education, orientation and conscientisation; NGOs working in the field have already shown ways following which an initial and widespread break-through can be made; public debates, open dialogues and affirmative actions by women

organisations are likely to have positive effects; opening up all modes of employment in the government and parastatals to women is likely to provide the needed pilotage in this regard;

- d. Making appropriate reforms in laws relating to family, inheritance, parental responsibility, work place equality and nationality in marriage; these have to be taken up by the parliament in conformity with the constitutional provisions and mandates; and
- e. Extending education and health facilities with an effective and affirmative bias towards women: to this end, the recently adopted subventions and supports to female education in secondary schools and physically extended health care and family planning facilities are steps in the right direction; these steps need to be strengthened through curricular reform and improvement of the health and related service delivery system.

12.30 Structural Adjustment

12.30.1 In the economic realm, Bangladesh has already set its course on structural adjustment. The starting point on this course - macro-economic disequilibrium - has largely been corrected and already been almost passed. At this time, restructuring calls for (a) expeditious deregulation and privatisation in keeping pace with trade liberalisation and reform in the financial sector; (b) increasing savings and investments by linking them to high returns and profits; (c) decreasing the bloated size of government and parastatals and state owned enterprises and (d) increasing exports through more efficient use of labour. These are fully consistent with broad based growth sharable across all income groups and capable of reducing poverty over time. In the short run, programmes aiming at these objectives have elements of conflict; existing distortions and privileges are likely to be defended by politically powerful groups, e.g. protected industries and organised and politicised labour; domestic demand-reducing measures like withdrawal of subventions and subsidies are likely to hurt the poor; cuts in public spending at least in the short run may limit down social services, transfer payments and safety nets. Given the commitment for adjustment, these elements of conflicts may be sized down in terms of adverse effects, by carefully designing the adjustment programmes in the light of poverty profile and its short term indicators. These profile and indicators may be used to establish a base line for monitoring poverty so as to associate the structural adjustment programmes with the socially corrective measures aimed at target groups directly and by widening access to the relevant public services.

12.31 Areas of Attention

12.31.1 Specifically, three major areas call for attention in this context. First, reduction in the size of the government will call for shaking off redundant employees, mostly at lower levels and freezing the size of organisations in areas where marginal productivity is low or zero (e.g., defence and regulatory areas after some points). The pains in the process may be turned into gains by encouraging and attracting the throwouts and fresh employment seekers into directly productive self-employment through opening up access to technology and credit and cherishing higher productivity through increasing the size of return envelope for the remaining productive ones. This can be facilitated through reaching an understanding among major political parties and labour groups accepting structural adjustment as an economic *sine qua non* in the present situational context. Second, the problem of landlessness and assetlessness has to be addressed in the short and medium terms. The long term growth potential may not be justification enough to postpone ameliorative measures at the initial stages. At these stages, extensive investment in flood control and irrigation is likely to increase the labour component of agricultural production. In the process, intensity of land utilisation coupled with the spread of water-seed-fertilizer

technology will increase farm employment. Added to that will be required firmer enforcement of the provisions of Land Reform Act, 1984, prescribing the shares of the landlord and the sharecropper. At the same time, opening up opportunities for off-farm employment and providing access to credit and technology to this end will have to be targeted in order to obviate discontinuity in the social frame in the country side. And third, investment in social sectors will have to be increased. To an extent this will be possible through reduction in or freezing of unproductive expenditures in the government and parastatals. But even then, it needs to be noted, investment in social sectors can be increased sizeably only on the basis of deep political commitment of, and firm consensus amongst major political parties and interest groups.

12.32 Dictates of Comparative Advantage

12.32.1 In an opened-up competitive economy, following the postulates of structural adjustment, production for consumption within and export abroad can continue and expand on the strength of comparative advantage. Potentially, we have 3 elements of such advantage: (a) gas-based cheap power; (b) abundant and cheap labour; and (c) efficient and economic management. For keeping unit price of power lower in comparison with that charged, say, in Myanmar, India, Nepal or Srilanka, enormous system loss that pervades power distribution in this country has to be arrested. This will bring the policy makers in serious conflict with the robbers and suckers of the system-unscrupulous users of power and predatory workers. Given the importance of power and its required cheap availability, an iron-fisted action is called for to eradicate the malaise. Any softening down in this regard will pose a threat to the nation's survival in the current globalised context. Likewise, despite rhetorics and platitudes poured out or used in the realm of labour relations, economic necessity will require us to keep labour cost in relation to a unit of production comparatively lower than that in other competitor countries. Given this starting point, wages of labour should be monitored and promoted so as to allow increase in them only in sync with increase in labour productivity. To attain and sustain societal success on this front, consensus will have to be built up among the major political parties and labour groups around the aforesaid postulates or principles. To this end, segmented collective bargaining within the bounds of the relevant laws instead of politicised control or manipulation at national levels as is the practice now, should be encouraged. This will yield higher wages in sub-sectors as will be permitted by increase in productivity without disrupting cost of production elsewhere. Considered currently, unquestionably management in private as well public sectors has wide scope to improve upon. This can be done over time through revamping the education system in terms of directions as well as quality of management. The newer and needed directions may include extensive facilities for turning out more MBAs and BBAs and lesser MAs and BAs in literature and culture, for example, emphasising newer fields like process engineering, construction management, quality assurance, technological development, informatics and even educational and health administrations. Besides a management culture based on hard work, sincerity, creativity, innovative attitude and hands-on approach to problems at hand need to be created, sustained and cherished. Various professional bodies may be encouraged as catalysts in the process. The advantage that a manager in Bangladesh equally productive on the floor as one in a developed country, for example, can be hired and retained at one-fifth of the modal cost in the latter has to be secured and turned into a continuous process of making profit and expanding production within and without.

12.33 Caveat in Population Control

12.33.1 Nutrition and Education: The country has already attained marked success in population control measures. This success is not, as observers in relation to experiences in other developing countries point out, without caveats. First, birth rate accounted by affluent families has gone quite down in relation to that accounted by the poor. One result of this is manifested in malnutrition of the majority of the nation's children. As an estimate has it, out of every 4 children born this minute in Bangladesh, given the continuance of the current nutrition pattern, only 1 will be physically and mentally healthy person in 15-18 years from now; the remaining 3, for want of nourishment and continuance of wastage will be physically and mentally handicapped or retarded. The possibility of the nation's becoming a collection of retarded lesser beings in its majority looms rather large. This needs to be attended through delineating long term general programmes as well as short-term target-oriented measures. Second, more children produced and reared by the poor seems to have put up a social demand on continuance and extension of the public education system. As experience has it, cost-based education in a private system mostly meets the needs of children of the relatively affluent. In this context, while encouraging setting up and operation of private schools and institutions for higher education, extension of education by the central and local governments and increasing their utilisation for overall human resource development will have to be provided for.

12.34 Promotion of Social Tolerance

12.34.1 Conflict in the process of socio-economic development is generated out of social intolerance as well. As tradition of tolerance needs to be created, sustained and cherished to accelerate and stabilise the process and as experience has it in other countries, educational system perhaps provides the most significant input for creating ethos sustaining and cherishing tolerance, freedom of thought and non-conforming attitude required to break through the frontiers of knowledge and technology. The inherited emphasis on madrasa education, in relation to religious education otherwise pursuable by other religious communities on their own and consequently, at the expense of scientific and technological pursuits in general, may be latent with elements of discomfort in this context. The education system on this ground needs moulding and reforming. In the absence of liberal arts based education and science-centred pursuit of knowledge, the system in its parts may degenerate into springboards of fundamentalism, intolerance and consequent conflicts. All relevant role players - politicians, educators, social opinion leaders and intelligentsia will do better by debating these issues for arriving at a consensus.

CHAPTER XIII

AGRICULTURE WATER RESOURCES AND RURAL DEVELOPMENT

Agriculture

13.1 Introduction

13.1.1 Agriculture plays a vital role in the growth and stability of the country's economy as is indicated by its share in GDP, employment and export earnings. At present, it accounts for about one-third of GDP and employs about two-thirds of the labour force. Exports of agricultural primary products accounted for about 12 per cent of total exports in 1996/97 and if exports of agriculture based intermediate and industrial products (leather, jute) are taken into account, its contribution comes to nearly 24 per cent. If the newly emerged ready-made garments which contribute as much as 51 per cent of export earnings is viewed in domestic value added terms, agriculture is the main source of export earnings of the country. Apart from these, the role of agriculture is unique for food security and nutritional status of people. However, as industrialisation proceeds, the output of agriculture will represent a declining share of the gross output of the economy while the share of manufacturing and services sectors will increase. Although the contribution of agriculture to the economy is likely to decline, it will continue to be the single largest contributor to income and employment of the rural population in the foreseeable future.

13.1.2 Crop agriculture represented a share of about 24 per cent in total GDP and about 73 per cent in agricultural GDP during 1996/97. Within crop sub-sector, foodgrain, particularly the rice crop dominated the country's agricultural scenario in respect of both cropped area and production claiming a share of 74 per cent and 54 per cent respectively in 1996/97. Thus, development of rice crop has substantial impact on the sector's performance. There has, however, been shift in the composition of agriculture over the past few years as indicated by gradual decline in the share of crop agriculture and increase in the share of non-crop agriculture (NCA) which consists of livestock, fisheries and forestry. The NCA, particularly the livestock and fisheries, have, of late, taken off largely through private sector initiatives showing robust growth of 7.98 per cent and 8.60 per cent respectively in 1996/97. Hence, it is envisaged in the Plan to develop an integrated agriculture including crops, along with food management, livestock, fisheries, forestry and environment through more efficient utilisation of available land and water resources for sustainable agricultural growth.

A. Crops

13.2 Review of Past Performance

13.2.1 Bangladesh made steady progress in crop agriculture in the post-Independence period. The cropping intensity increased from 148 to 179 per cent and foodgrain production almost doubled during the period from 1969/70 to 1992/93. Contributing about 75 per cent of the value added, crops form the largest sub-sector of agriculture. Rice is the dominant crop and largely determines the rate of progress in the agriculture sector and to a significant extent, that of the non-agricultural sectors. It covers about 75 per cent of the cropped area and accounts for about 70 per cent of the value of crop output. In fact, the entire growth in crop production is due to the growth in foodgrain production, particularly rice. Yield of other non-cereal crops such as pulses, oilseeds and vegetables almost stagnated, while that of wheat did not increase markedly.

13.2.2 In 1993/94 and 1994/95, foodgrain production declined as a result of depressed prices and natural disasters, particularly floods and droughts in the north-west, which is the country's surplus grain production region. The average foodgrain production during these two years dropped to 18.71 million metric ton (mt) from the average of 19.31 million mt during the preceding three years from 1990/91 to 1992/93. While drought conditions prevailed during these years, the decline in rice production in 1993/94 also was due to both damages by floods and the farmers' response to the fall in the price of rice in the preceding year as evidenced by more than 4 per cent decline in fertiliser consumption, more than 2 per cent reduction in area sown and similar decline in irrigation command area. In 1994/95, total foodgrain production was only 18.17 million mt as against the expected production of 20 million mt. This trend started improving from 1995/96 with a foodgrain production of 19.14 million mt. The year 1996/97 witnessed an all time high foodgrain production of about 20.43 million mt. Foodgrain production, though continues to depend on the vagaries of nature, increased substantially over the years, following the introduction of high yielding varieties (HYV) and application of modern inputs like fertilisers and pesticides; but its dependence on weather continues resulting in fluctuations in production. Wide fluctuations in production leads to large instability in foodgrain prices having serious implications for household food security and also for the welfare of the people.

13.2.3 Production of jute fibre reached as high as 8.66 million bales in 1985/86. The production level declined to 4.92 million bales in 1992/93 and hovered around this level since then. Sugarcane production has remained more or less around 7.50 million mt since 1987/88. Production of potatoes has shown a steady increase. It increased from 0.89 million mt in 1975/76 to 1.47 million mt in 1994/95. Other crops like pulses and oil seeds have shown only marginal improvement nationwide. However, implementation of a crop diversification programme (CDP) during 1990-95 in 125 thanas gave promising results in terms of yield per hectare of maize, pulses, oilseeds, potatoes, vegetables, etc.

13.2.4 As regards performance of modern inputs, the irrigated area increased to about 4.00 million hectares in 1996/97 from the level of 2.65 million hectares in 1990/91. Ground water irrigation covered 68.5 per cent of the total irrigated area while the surface water irrigation was only 31.5 per cent in 1996/97. The ground water irrigation witnessed significant expansion during the last two decades. Use of chemical fertilisers increased from 2 million mt in 1990/91 to 3.02 million mt in 1995/96. Public sector seed distribution (mainly rice and wheat) occupies only about 5 per cent of the total requirements. The large part of the seed requirement is met by the private sector.

13.2.5 The reforms of the agriculture sector have been quite pronounced and visible. For over a decade, a wide range of policy reforms have been implemented in the agricultural sector. Few of these are privatisation of input distribution, withdrawal of input and food subsidy, import liberalisation and a broadening of the scope of private investment in agriculture. In recent years, the coverage of policy reforms in the agriculture sector has substantially expanded to include minor irrigation equipment, agricultural machinery, seeds and agricultural trade.

13.3 Fifth Five Year Plan

13.3.1 Sustainability of high yield and environmental protection remain the principal concern in recent years. Loss of soil fertility followed by unbalanced use of chemical fertilisers, lack of adequate quantity of water in some areas as well as their appropriate conservation and management are the major factors causing divergence between potential and actual output of

major agricultural commodities. Various studies indicate that the yield potential of the existing HYVs of rice is more than 4 mt/ha, whereas the average yield of most of the other varieties of rice is around 2 mt/ha. Major tasks during the Fifth Five Year Plan will be to address these issues. The specific objectives of the Plan will be to:

- a. increase productivity and real income of farming families in rural areas on a sustainable basis;
- b. attain self-sufficiency in foodgrain production along with increased production of other nutritional crops;
- c. encourage export of agricultural commodities, particularly vegetables and fruits keeping in view domestic production and need;
- d. promote adoption of modern agricultural practices in dry land, wetland and coastal areas;
- e. ensure sustained agricultural growth through more efficient and balanced utilisation of land, water and other resources; and
- f. encourage comparatively large farm to graduate into commercial farming.

13.3.2 Policies and Strategies : In order to achieve the objectives, the strategies/policies will be evolved and adopted to bring about necessary technical change. The following will be the specific policies and strategies:

- a. improvement of the quality of seeds, particularly HYV and hybrid seeds and increasing their quantity;
- b. development of modern, irrigated and least-risk agriculture with greater reliance on competitive markets through supply of agricultural inputs at low cost; making public investment more effective and keeping it limited to key areas as required to supplement private initiatives;
- c. strengthening of the agricultural research and extension systems in order to develop new technologies relating to crop varieties, integrated farming system, organic farming, improved agronomic and agro-processing technologies, and for diffusion of the proven technologies;
- d. development and dissemination of ecologically sound and sustainable technologies such as integrated pest management (IPM) techniques, and organic and bio-fertiliser use;
- e. increasing profitable production of minor crops and thereby maintaining a balanced crop production and improving the nutritional status of the people;
- f. development of suitable technologies in rain-fed, dry land and wetland farming system to enhance the productivity;
- g. restoration/improvement of soil fertility through better management of the organic matter of soil to improve yields of crops; towards this end, production and use of bio-manure will be encouraged;
- h. assistance to small and marginal farmers in forming groups and associations which can (i) enhance production and productivity, (ii) sustain agro-business enterprises on their own, (iii) absorb more credit fund and (iv) adopt/disseminate technologies;
- i. participation of NGOs in the agricultural development process;
- j. improvement and conservation of plant and genetic resources through collection and conservation of germ plasm;
- k. facilitation of access to markets and the promotion of efficient marketing system;
- l. formulation of integrated land use policy conducive to optimum use of agricultural resources;

- m. implementation of measures to cushion and minimise the damage to agriculture and rural economy brought about by natural calamities;
- n. development of the capabilities of rural women and the youth to contribute more to agricultural and rural development;
- o. restructuring of the existing institutional set-up to cope with the changed need;
- p. development of human resources through education, training and motivation;
- q. development and dissemination of appropriate location-specific and cost-reducing production and post-harvest technologies for reduction of post-harvest losses and the removal of transport bottlenecks; and
- r. adoption of policies and regulations that will ensure sustainable agricultural development;

13.3.3 Major areas of public sector promotional activities : The crop production strategy of Bangladesh will be based on the following central thrusts: (a) increased distribution of high quality HYV seeds by the public sector; (b) accelerated transformation into irrigated agriculture to increase and stabilise crop yields; (c) intensification of the cropping systems; (d) decreased dependence on draft power through mechanisation and bridging of the yield gaps in irrigated areas; (e) improvement of productivity and minimisation of production risks in the rainfed, wetland, high land and coastal farming system; (f) diversification of farming systems to take advantage of favourable agro-ecological conditions; (g) responding to changing consumer demands and developing a more sustainable agricultural system; (h) vertical co-ordination of the production, harvesting and marketing chain; and (i) strengthening of extension, research and other support services.

13.4 Crop Production

13.4.1 Projection of crop production during the Plan has been worked out keeping in view the production possibilities, agronomic consideration, availability of production inputs and farmers' accessibility to resources and willingness to increase production within the prevailing agro-economic condition. Emphasis will be put on increasing yield per hectare rather than increasing cropped area and shifting from local variety to the HYVs. The purpose of foodgrain production, in addition to attaining self-sufficiency, will be to provide nutritious food for the entire population.

13.4.2 Bangladesh is endowed with favourable climate and soils for the production of a variety of crops throughout the year. The winter crops are greater in number than the summer monsoon crops. The production of major and minor crops lost balance in recent years due to greater emphasis given on cereals, especially rice and wheat. The situation needs to be improved for balanced diet of the people.

13.4.3 The production of minor crops such as pulses, oilseeds, vegetables, fruits, spices, etc., is currently inadequate to provide required nutrition in the daily diet of the people. Such situation will not be allowed to continue. Accelerated production of minor crops, complementary but not competitive with major food crops production as per requirement for reducing pressure on cereals, will be pursued during the Fifth Plan period. This will improve the daily diet of the people, generate rural employment by intensive cropping with improved technologies, increase farm income and thereby increase the purchasing power of rural masses. It will also improve the balance of payments by promoting import substitution and export oriented crops.

13.4.4 Fruits and vegetables are important sources of minerals and vitamins and provide a part of calorie requirement in the daily diet of the people. They also provide most of the food roughage which contributes to prevention of disorder of digestive system. Besides, vegetables protein appear to be superior to animal protein. The nutrition status of the Bangladeshi diet is on a declining trend due to low intake of vegetables, fruits and spices. The increased production and intake of vegetables by the people will help compensate for debilitating nutritional deficiencies.

13.4.5 The foodgrain production in the terminal year of the Fifth Plan has been projected to be 25.12 million mt. Out of this, rice production is expected to be 23.40 million mt as against the production of 18.88 million mt in 1996/97. The estimates of wheat and other coarse grain production have been made at 1.60 million mt and 0.12 million mt respectively in the terminal year of the Plan. The projected production of important crops have been shown in Table 13.1

Table 13.1
Projection of Important Crop Production During Fifth Plan

(area in million hectare
and production in million m. tons unless otherwise noted)

Crops	1996/97 (Benchmark)		2001/2002 (Projection)	
	Area	Production	Area	Production
1	2	3	4	5
Rice	10.40	18.88	10.11	23.40
Wheat	0.71	1.45	0.70	1.60
Sub-Total	11.11	20.33	10.81	25.00
Other coarse grain	0.10	0.10	0.12	0.12
Total Foodgrain	11.21	20.43	10.93	25.12
Potato	0.15	1.85	0.16	2.43
Sweet Potato	0.05	0.50	0.05	0.66
Oilseeds	0.50	0.37	0.70	0.76
Pulses	0.65	0.53	0.78	0.85
Spices	0.15	0.33	0.22	0.50
Vegetables	0.25	1.45	0.30	1.82
Fruits	0.19	2.14	0.26	3.54
Jute (million bales)	0.51	4.87	0.57	7.24
Cotton (million bales)	0.04	0.10	0.11	0.26
Sugarcane	0.18	8.10	0.18	12.37
Tea (million kg)	0.05	54.00	0.05	60.00
Tobacco	0.03	0.04	0.03	0.04

13.4.6 Maize and other coarse grains: Maize is now considered as a substitute for both rice and wheat since it can be grown in all seasons. From maize one may get food, oil, fuel, and fodder and feed. The present yield potential is too low. It can be increased to the level of HYV wheat provided adequate demand is created and fair prices to the growers can be ensured. The genetic yield potential of maize is very high. Bangladesh Agricultural Research Institute (BARI) has already developed five high yielding medium duration maize varieties with grain yield potential of 5-7 mt/hectare, suitable for flood prone areas. The maize production is planned to increase by 250 per cent to 12,500 mt in 2001/2002 from the benchmark production of about 5,000 mt. Besides maize, other coarse grains consisting of barley, sorghum, bajra, and millets have considerable importance from the point of use of water resource and development of agro-industries. Considering the increased importance of these minor crops as supplementary food, cattle feed and industrial raw materials, increased production programme for these crops will be taken up during the Fifth Plan period.

13.4.7 Fruits vegetables and horticultural products: Environment in Bangladesh is quite rich for production of a large variety of fruits and vegetables. Some fruits such as mango, banana, pineapple, jackfruit, etc., have world demand. The main problem of fruit production is its seasonal nature. Year-round production variety is yet to be evolved. Special efforts will be made during the Fifth Plan to produce at least major fruits and vegetables on a year-round basis and commercialisation of their production through appropriate research and development programmes. At the same time, emphasis will be given on the qualitative and quantitative improvement of various fruits and vegetables production, including production of mushrooms, flowers, orchids and shrubs, etc., Production of fruits and vegetables has been projected to be 3.54 million mt and 1.82 million mt respectively by the end of the Plan period.

13.4.8 Potato : Potato is suitable as a security crop in times of rice shortages due to its high carbohydrate content contributing to improved food security. This is also used as a vegetable by various income groups of the country. Since it is a short duration crop, its increased use can reduce the pressure on rice and wheat. Considering the production potential of the crop, potato production is projected to grow to 2.43 million mt in 2001/2002. The increased production is expected to come from expansion in cropped area and increase in yield per hectare. To this end, true potato seed technology will be encouraged and adopted.

13.4.9 Sweet potato : Sweet potato is considered as a subsistence as well as a poor people's food. Hence, its production will be encouraged on marginal lands, homestead areas, road sides and elsewhere as a low input crop to ensure its continued availability to, and affordability by low income consumers. Sweet potato production is projected to be 0.66 million mt in the terminal year of the Fifth Plan.

13.4.10 Pulses: The pulses of Bangladesh comprise of six major crops, namely, lentil, kheshari, blackgram, mungbean, chick-pea and pigeon pea. Cowpea occupies an important place in the Chittagong area. The cropped area and production of these pulses have been on the decline over the past few years mainly because of the increased emphasis on HYV rice and wheat. But pulses are very important because of protein supply to the human diet and nitrogen fixation for soil nutrition. Since improved technology can increase per hectare yield of pulses substantially, pulse production is projected to grow to 0.85 million mt in the terminal year of the Plan as against the benchmark production of 0.53 million mt.

13.4.11 Oilseeds: Vegetable oil from oilseeds are the main sources of fats in the average Bangladeshi diet. Its present level of consumption is only 25 per cent of FAO/WHO recommended level. Efforts will be made to increase oilseeds production to 0.76 million mt by the terminal year of the Fifth Plan. Groundnut, sunflower and soyabean have been included in this projected production. New seed varieties are being used in the defined area to avoid cross-pollination. Production of foundation and certified seeds of improved varieties and demonstrations of modern technology are important strategies to increase oilseeds production of the country.

13.5 Cash Crop Production

13.5.1 Jute: Jute is the major fibre crop of the country. Despite the relative decline in importance of jute in agriculture, potential still exists for the fibre to increase its contribution to the economy through productivity increases and diversification. The share of raw jute and jute goods in the total exports of the country has been declining but this still remains significant. In this situation, special measures will be taken during the Plan period to

encourage farmers to further intensify jute production in order to satisfy domestic and export demand. To enable jute to compete with synthetics, emphasis will be given to related agricultural and technological research efforts. The raw jute production is projected to go up to 7.24 million bales in 2001/2002 as against 4.87 million bales in 1996/97 through per hectare yield increase, availability of better quality seeds, improved provision of extension and credit support to growers.

13.5.2 Tea: Tea is one of the most dynamic agro-based, labour intensive, export oriented industries of Bangladesh. It plays a vital role in the national economy in both export earnings as well as in employment generation. Plantation and production of processed tea are the two main activities in the private sector. In the public sector, green leaf production was promoted through development projects implemented by the Bangladesh Tea Board. With the introduction of high yielding varieties, quality planting materials, timely application of production inputs and installation of modern machinery, tea has undergone further improvement and enabled Bangladesh to compete more effectively with other exporting countries. Increased production is expected to come from higher yields and by reducing tea vacancies now existing in the garden.

13.5.3 Tobacco: Tobacco is one of the important cash crops of the country. The crop grows well in sandy, well-aerated, well-drained soils and cool climate. Hence, it is grown as a rabi crop and most of the area is concentrated in the greater districts of Kushtia and Rangpur. Due efforts to expand tobacco cultivation since 1973/74, through support from big cigarette manufacturing firms, made it possible to achieve self-sufficiency in tobacco production by 1980/81. However, recognising tobacco's adverse effects on health, policies will be adopted to limit its production with gradual reduction of cropped area in favour of cotton and pulses. The production of tobacco has been projected to be 0.04 million mt by the terminal year of the Fifth Plan.

13.5.4 Cotton: Cotton has played a very important role in improving the socio-economic conditions of the farmers during the previous Plan period. The production has gone up from 45,800 bales in 1983/84 to about 1,00,000 bales in 1996/97. The yield of seed cotton per hectare has reached a reasonably high level; yet the yield of cotton in the country is low compared to world standards. The major constraints to increased production are inadequate ginning capacity and seed multiplication programme, insufficient expertise and material resources, inefficient system of management and ineffective extension and marketing organisation. Textile mills should encourage commercial plantation through co-operatives in suitable cotton belts. During the Plan period, efforts will be made to provide loans to farmers to ensure supply of improved seeds, fertilisers, plant protection measures, irrigation and credit facilities to the growers along with the practising of improved technologies in the cotton fields. The cotton production has been projected to be 0.26 million bales by the terminal year of the Fifth Plan as against 0.10 million bales in 1996/97.

13.5.5 Sugarcane : Sugar is the country's most important agro-industry and sugarcane is one of the important cash crops. Sugarcane is grown as a 12/15 month crop in a two year rotation with aus rice crop during the monsoon season followed in the dry months by oilseeds, wheat, or vegetables. Sugarcane yields in the country are low by world standards and the quality is poor. The average yield of sugarcane is about 6.1 mt per hectare with a sugar recovery rate of 8-10 per cent. Sugarcane is grown on about 0.18 million hectares of land. Of this, about 0.95 million hectares are in the sugar mill zone areas and the rest in the non-mill zone areas which produces sugarcanes mostly for making gur consumed by the rural people.

Research efforts will be strengthened to raise yield per hectare through varietal improvement, better management of water resources, fertilisers and other inputs, improved cropping systems and development of sugarcane delivery system from farms to mills. Considering the past consumption trend, milling capacity and possible growth rate of production, sugarcane production is projected to be 12.37 million mt in the terminal year of the Fifth Plan as against the benchmark production of 8.10 million mt.

13.5.6 Crop diversification : Bangladesh is endowed with a favourable climate and soil for the production of a variety of crops all the year round. Thus, ample opportunities exist for crop diversification balancing the production of major crops with that of minor crops. The minor crop production has substantial potential, if seasonal fallow land is brought under cultivation with seed-fertiliser-irrigation technology packages. Crop rotation, i.e., exhausting crops followed by recuperative ones, shallow rooted crops by deep rooted ones, legumes followed by non-legumes, etc., is envisaged to enrich and maintain soil fertility. Besides, diversification of cropping pattern, particularly towards the production of high value crops, will contribute to enhance farmers' income and to help maintain a better soil structure for long term sustainability. Efforts will be made to explore the possibility of introducing a non-rice crop in between aman and boro through adoption of shorter duration rice varieties and shifting of the timing of crop establishment and harvesting. Lack of technological advancement is the main constraint to diversification of crops. In order to accelerate technological advancement, possible strategies will be to:

- a. develop HYVs and use hybrid technology and genetic upgradation of non-cereal crops and strengthen seed production programmes, particularly in the private sector;
- b. introduce diversified cropping systems in order to free upland areas in winter season for non-rice crops so as to facilitate introduction of third crop on the land and under irrigated condition; short duration mustard can be introduced in between boro and aman seasons; and
- c. introduce extensive extension services, improve drainage and water management, ensure timely planting and soil fertility management, develop infrastructure and post-harvest processing and provide marketing facilities.

13.6 Special Agricultural Zones

13.6.1 Apart from plain land agriculture, there are special agro-ecological zones which have quite high growth potentials. Specific development policy, strategy and programmes for these zones are needed to exploit the existing potentials of the areas: (a) the upland in the hilly areas of Chittagong, Chittagong Hill Tracts and Sylhet, (b) the wetland in greater Mymensingh, Sylhet, Jessore, Pabna, Rajshahi, etc., and (c) the coastal areas of southern part of Bangladesh. Each requires distinct set of policies, strategies and programmes because of differences in agro-ecological environment. Research, extension and input delivery will be so designed as to meet the specific requirement of these special agro-ecological zones.

13.6.2 Rainfed farming: Crop production in Bangladesh is predominantly monsoon dependent. Of the total rainfed areas, about 3 million ha is estimated to be prone to severe drought. The entire Barind and Modhupur Tracts constituting about 12 per cent of the total arable areas are characterised by shallow soil depth having low moisture holding capacity and heavy sub-surface clay. Crop production in these areas and in the Gangetic flood plains is mainly dependent on rainfall and on the inundation from the Ganges river and its tributaries. However, for the whole of the Ganges belt, including the Barind and Modhupur Tracts, no rainfed farming practice specially suited to the prevailing soil and agro-climatic condition has

yet been developed. There is, thus, an urgent need to develop drought tolerant crop varieties and drought mitigating technologies that will make maximum use of the land resources of the rainfed farming systems. Rainfed farming practices will also include supplementary irrigation which will help increase crop production during the kharif season.

13.6.3 Wetland farming: Large areas of wetland commonly known as beels, baors and haors in the greater districts of Sylhet, Mymensingh, Jessore, Rajshahi and Pabna hold quite high potentials for the development of crop agriculture and fisheries, in particular. Crop agriculture and fish production can grow simultaneously. Besides, preservation of biodiversity of the wetland will be given high priority. Greater attention will be given during the Fifth Five Year Plan to exploit the potentials of crop agriculture and fisheries through provision of situation specific package of development programmes for research, extension, input supply, etc.

13.6.4 Coastal farming: Coastal areas in the southern part of Bangladesh constitutes a specific ecological zone having its specific problems and possibilities. Cyclones, tidal bores, salinity, etc., visit these areas frequently affecting agricultural output. Therefore, there is need for developing salinity resistant variety of rice, for example, for these areas. Coconut, betel nut, palm and mangrove are major cash crops in these areas. Location specific research, extension and other programmes will be developed and provided for the purpose of exploiting the potentials.

13.6.5 Hill farming: The upland in the hilly areas of the greater Chittagong district, Chittagong hill tracts and Sylhet district constitute a special agricultural zone requiring location specific services and programmes. High potentials exist for production of fruits and vegetables in these areas. Agricultural development potentials in these areas are quite substantial. Resources will be provided to develop appropriate technology that are suitable for upland agriculture.

13.6.6 Cropping intensity : Bangladesh has, by 1996/97, achieved an estimated cropping intensity of about 185 per cent. Out of the net cropped area of 7.60 million hectare, about 55 per cent is double cropped and approximately 15 per cent triple cropped. However, about 30 per cent is still single cropped. Since all the suitable land is already under cultivation, raising the intensity of land use is needed. It is expected that cropping intensity will reach 192 per cent by the terminal year of the Fifth Plan. Cropping intensity from 1992/93 to 2001/2002 is shown in Table 13.2.

Table 13.2
Cropping Intensity From 1992/93 to 2001/2002

	Net Land Area	Total Cropped Area	Cropping Intensity
1992/93	7.64	13.70	179
1996/97	7.60	14.08	185
2001/2002 (Projection)	7.50	14.41	192

(area in million hectare)

13.7 Agricultural Inputs

13.7.1 Fertilisers: In Bangladesh, despite manifold increases in fertiliser consumption, per hectare use of it is still one of the lowest. With the privatisation policy of the government, fertiliser distribution programme has fully been handed over to the private sector. Total fertiliser consumption during 1996/97 was about 3.45 million mt — urea 2.41 million mt, TSP and SSP 0.69 million mt and MOP 0.35 million mt. These are projected to increase in aggregate to about 4.50 million mt, of which urea will be 2.90 million mt (64%), TSP and

SSP 1.00 million mt (22%) and MOP 0.60 million mt (13%) by the end of the Fifth Plan. Actual application of various types of fertilisers is disproportionate to standard NPK ratio of 1 : 0.5 : 0.5. Fertiliser use at farmer level is dominated by urea (about 70%) followed by TSP and SSP (20%) and MOP (10%) causing damage to soil structure and thereby constraining per hectare production of various crops. Following withdrawal of explicit subsidy from phosphatic and potash fertilisers and also transfer of its trade to private hands, relative prices of these items have gone up, while urea is reported to be sold at below the cost of production. The price of urea was reduced in July, 1994 and early, 1995. This distortion of relative price of urea is said to have aggravated unbalanced use of fertilisers in favour of nitrogenous fertilisers or inadequate application of non-nitrogenous fertilisers such as TSP and MOP. Therefore, in view of actual field position and experiences gained so far, it is realised that the public sector interventions might be required in case of market failure for (a) ensuring balanced use of fertilisers, (b) maintaining a buffer stock of fertilisers to meet emergency needs, (c) distribution of fertilisers in the remote areas, (d) encouraging increased use of organic and bio-fertilisers, and (e) training the farmers by the extension people in using appropriate doses and combination of fertilisers.

13.7.2 Seeds: Quality seeds in right quantity are recognised to be one of the key elements for enhancing agricultural production. At present, BADC, as per seed policy 1992, concentrates its efforts on the production of HYV seeds of paddy, wheat, potato, jute and sugarcane in the seed farms and also uses farmers to multiply seed on contract basis. Production programme of all other crops beyond foundation seed will be done by contract growers. With the introduction of seed policy, emphasis has been given to private seed growers development. However, the public sector will conduct basic scientific research, support or conduct breeding work for self-pollinated and minor crops for greater suitability to divergent agro-ecological zone. Public sector will also carry out programmes for training and support services for private research and development, variety testing and registration, plant material inspection and maintaining germplasm, supporting seed associations and promotion of farmer or community-based seed programme. The concerned agencies under the MOA will be further strengthened in order to ensure quality of seed at all stages of its production — breeder, foundation and certified seed. Emphasis will be given on creating facilities and infrastructure support for hybrid seed research, marketing and development. Farmers will be given training and technical assistance to extend improved methods of seed production, testing and storage. Total production of all types of certified and foundation seeds has been around 45,000 mt during 1996/97. This is expected to reach 62,000 mt by 2002. At present, only about 5 per cent of total certified seed requirement is met from BADC sources. This needs to be raised to at least 10 per cent to match 25.12 million mt of foodgrain production as projected in the Fifth Plan. To this end, BADC seed wing will be strengthened and restructured. Agricultural Research Institutes (ARIs) along with other research organisations under National Agricultural Research System (NARS) will upgrade and strengthen research in order to give full support to augmenting breeder seeds of new varieties. Seed development accounts for about 28 per cent of total financial provision for the agriculture sector during the Fifth Plan.

13.7.3 Irrigation: Availability of appropriate quantity of irrigated water from (a) surface water through gravity flow and LLP, (b) ground water through DTW, STW, HTW, FMTW, DSSTW and VDSSTW, etc., and (c) other sources will be the main factors behind the growth of agriculture during the Fifth Plan. Total coverage of irrigation through all these sources in 1996/97 is estimated to have been around 4.00 million ha which is projected to increase to 5.04 million ha in 2001/2002. This is about 67 per cent of total potential irrigable

areas of 7.56 million hectare. In addition, flood control and drainage facilities are projected to cover 4.90 million ha during 2001/2002 as against the estimated coverage of 4.20 million ha in 1996/97. Flood control and drainage programmes will support and assist increased agricultural production during the Fifth Plan.

13.7.4 Plant protection: Actual plant protection activities are in the private hands. However, the public sector programmes are confined to qualitative and quantitative aspects of plant protection: pests surveillance, monitoring and early warning against pest attacks, advisory service to farmers, traders and others dealing with pesticides and quality control of pesticides marketed by the private sector. In the Fifth Plan period, the integrated pest management (IPM) programme will be intensified and expanded in order to safeguard crops from pest and combat environmental degradation due to pesticide uses. Agricultural extension workers are responsible for providing advice to the farmers on appropriate plant protection measures. Collaboration among the local government representatives, extension workers and the NGOs will be sought to expand IPM programme. Farmers will be given training in the use of different pesticides through demonstration.

13.7.5 Agricultural credit: Till recently, the major part of agricultural credit to farmers has been channelled by informal sources catering to the needs of short term credit. Semi-formal institutions, NGOs, Grameen Bank, etc., also provide target groups credit in the rural areas. The third source in terms of credit volume is the formal sources comprising the nationalised commercial banks and agricultural and specialised banks, i.e., Bangladesh Krishi Bank (BKB), Rajshahi Krishi Unnayan Bank (RAKUB) and Bangladesh Samabaya Bank (BSB). During the Fourth Plan, the total volume of agricultural credit increased by 150.20 per cent; the highest increase being for fishery (831.50%) followed by livestock (341.30%), crop sub-sector (214.30%) and others (93.40%). However, in recent years, there has been a significant cut in the share of crop sub-sector in the total credit delivery to the agriculture sector from formal sources. The share declined from 46.38 per cent in 1994/95 to 42.29 per cent in 1996/97. A major reason for this is the serious problem of low repayment due to weak lending and recovery operations, inappropriate use of loans, frequent occurrence of natural calamities and loss of crops and weakening of the public price support policy. The low interest rate to this priority sector dissuades financial institutions from further lending to agriculture. Moreover, since 1991/92, central bank discontinued its refinance facility for extending agricultural credit except for the BKB, RAKUB and the Sonali Bank. These factors dampened the expansion of agricultural credit. In the Plan period, agricultural credit, especially for marginal and small farmers will be geared up in order to encourage steady expansion of agricultural output supported by appropriate public policies to ensure fair prices to farmers. Otherwise, over 6 million farm households will be exposed to uncertainty. In addition to the existing programme, special credit programme will be launched aiming at providing credit, particularly to the small and medium farmers. The commercial banks will be encouraged to provide funds to large farms to enable these to operate on a commercial basis. Keeping this in view, the Fifth Plan envisages to increase yearly agricultural credit disbursement. An amount of Tk.30,000 million is projected to be delivered as credit to agriculture in the terminal year of the Plan.

13.7.6 Mechanisation of agriculture: There is a serious dearth of animal draft power to cater for the growing needs of an expanding modern agriculture. The available animal draft power is inefficient and unreliable. As against this, agriculture mechanisation can help in improving productivity, reducing cost of production, increasing efficiency, increasing inputs use (water, seed, fertiliser, labour) and achieving timeliness of crop production operations.

Agricultural mechanisation is needed for quick turn-over time and high input use efficiency. Land preparation, irrigation, insecticides spraying, threshing, crushing and shelling, husking and milling have been partially mechanised and their magnitudes are expanding gradually throughout the country. There is a need for continuous development of more efficient and less costly equipment so that farmers can benefit. Since agriculture is still the mainstay of the economy, promotion and development of agro-related metal working industries to provide support to agricultural production is a major concern. Selective mechanisation based on the traditional devices conducive to productivity will be adopted. In the context of market economy, emphasis will be given to the collaborative role of public and private sectors in technology development and its diffusion. An appropriate policy framework for sustainable development of farm machinery manufacturing will be pursued in the Fifth Plan period.

13.7.7 Agricultural Insurance: Agricultural insurance has been recognised as an important component of agricultural development strategy. It seeks to protect farm investment through indemnification of losses to crops, forestry, livestock, fisheries and other farm resources that are vulnerable to natural hazards and other insurable perils and thereby provides security to farm income. It can also be significant to the agricultural credit agencies in times of natural calamities with insurance policies standing as collaterals for loans. With this end in view, crop insurance programme was at first launched in Bangladesh in 1977. Being entrusted with it, Sadharan Bima Corporation (SBC) carried out a pilot project to provide multi-peril coverage to major cereal crops (aus, aman, boro and wheat) as well as to major cash crops of jute and sugarcane for stabilising farm income. Livestock component was included in 1981. But, for various reasons, the performance of the project, particularly in respect of crop insurance was quite poor. Due to weak loss assessment system, indemnity payments far outstripping premium incomes resulted in mounting losses to SBC. In the absence of any new initiative to revamp the crop insurance programme, it was discontinued with effect from mid 1995. Livestock insurance has, however, been retained as it has continued to perform relatively well. During the Fifth Plan, efforts will be made for the development of a comprehensive agricultural insurance programme.

13.7.8 Agricultural marketing and prices: With a more intensive system of crop production and the increasing emphasis on diversification, marketing problems, particularly with perishable crops, have already multiplied and are likely to multiply further unless the needed remedies are introduced. Marketing costs are already high because of inadequate infrastructure, high price risks and the lack of credit to traders for marketing activities.

13.7.9 Among the vast number of primary and secondary markets in the country (about 7,800), the Department of Agricultural Marketing (DAM) is responsible for fixing market charges in 393 markets only. The market centres are under the control of the Ministry of Land which owns the land and collects marketing fees from sellers. The DAM, during the Fifth Plan period, will be strengthened to provide improved marketing services with a view to ensuring fair returns to the growers for their produces and adequate supply to the consumers at reasonable prices through the improvement of market conditions, reduction of marketing costs, regulation of market practices and market promotion for agricultural crops like maize, soyabean, potato, sunflower, etc. Wholesale market development, promotion of agro-processing industries, market management, creation of MIS in DAM, classification, grading and standardisation of agricultural products, improvement of storage facilities, particularly for marginal and small farmers, setting up an Agricultural Price Commission to make price forecast, production estimate and to make recommendations on the economics of productions and marketing are some of the specific programmes that will be undertaken during the Fifth

Plan in order to ensure (a) fair price, (b) quality of agricultural products both for domestic consumption and export and (c) increased production with stable price.

13.8 Agro-processing

13.8.1 Bangladesh experiences seasonal surpluses in several agricultural commodities of perishable nature. Development of agro-processing facilities can prevent post-harvest losses and enhance farmers' income. The agro-processing industries are at present in their nascent stage of development. Most of the technologies and facilities for handling, storage, processing and packaging of farm products and by-products are substandard and outdated as they cater primarily to the domestic market. There is considerable under-utilisation of capacity also.

13.8.2 The scope for the privatisation of support services such as research and extension is likely to remain limited. However, agricultural research institutes like BARI and BRRI will carry out research on technology development for agro-processing. Meanwhile, some technologies are already available with these institutes for the development and growth of agro-processing industries in the country. Nevertheless, some specialised extension activities could be delegated to the private sector such as those related to fruits and vegetables enterprises.

13.8.3 This process of supporting agrobusiness will be continued and strengthened during the Fifth Plan period. In this regard, two institutional developments in recent years are noteworthy: the establishment of HORTEx, a private board for horticulture promotion and the Agro-based Technology Development Project (ATDP) which conducts regular monitoring of the country's agrobusiness markets and provides information about the development in foreign markets and opportunities for agro-industries. These projects also support entrepreneurs with credit facilities.

13.9 Agricultural Research

13.9.1 Autonomous research institutes like BRRI, BARI, BJRI, BINA and BSRI were established with specific mandates for crop agricultural research in order to make the research system more service oriented and dynamic. National Agricultural Research System (NARS) with all the agriculture related research institutes under the co-ordinated leadership of Bangladesh Agriculture Research Council (BARC) has been established.

13.9.2 The research system needs to re-examine its focus and re-order its priorities, avoid fragmenting and duplicating its efforts, orient its approach from commodity based to farming system or integrated production system and strengthen its planning, programme monitoring and co-ordination. The research system should also strengthen its linkages with extension in the Plan period. Agro-ecological zone-based research will be undertaken. The criteria for evaluation of research programmes towards rates of adoption of research output by end-users and the system of accountability of individual research institution, research administration and personnel will be reviewed and made consistent with actual needs. Problem-solving researches will be given priority. Criteria for identification and selection of contract research programmes by the private sector and NGOs will also be developed in response to the changing environment at farm level. In the same way, priority list will be evaluated annually to accommodate changed needs and circumstances. Keeping in view these objectives and strategies, the following tentative research priority areas have been identified:

- a. improvement of foodgrain quality with more digestible protein;
- b. increase in efficiency in water use in rice cultivation;

- c. integrated plant nutrients and soil quality;
- d. post-harvest technology, preservation and relevant agricultural machinery;
- e. higher photosynthetic efficiency;
- f. nitrogen fixation by non-legumes;
- g. technologies for maximum use of commodities and their by-products for value addition;
- h. fruits and vegetables for off-season production including preservation, storability and tolerance to transportation damage;
- i. environmental issues and IPM;
- j. development of varieties tolerant to stresses (e.g. drought, salinity, water logging);
- k. development of hybrid technology for vegetables, maize and sunflowers;
- l. management of soil and plant nutrients with balanced use of organic nutrients;
- m. management of on-farm water resources in both irrigated and rain-fed agriculture;
- n. conservation of soil, plant and genetic resources;
- o. assessing the environmental impacts of declining ground water level;
- p. research on tillage operation to reduce turn-around time, multiple cropping and relay cropping;
- q. rainfed technology with major thrusts on development of crop cultivation and management practices (e.g. zero/minimum tillage, relay cropping, appropriate planting schedule and use of fertilisers including micro-nutrients);
- r. post-harvest handling and storage, primary, secondary and tertiary processing of farm products and by-products, including pulses, oilseeds, potato, vegetables and fruits;
- s. development and pilot testing of different scales of producers-processors agrobusiness schemes, including contract growing schemes;
- t. management of hill agriculture in the eastern and south eastern parts of the country, to harness the agriculture in largely mono-cropped Barind tract, characterised by drought, low organic matter and sub-surface heavy clay through identification of suitable crops varieties and soil/water management and agronomic practices; management of coastal saline soils; and
- u. genetic engineering and tissue culture.

In terms of financial outlay, the agricultural research will absorb about 12 per cent of this sector's total development outlay during the Fifth Plan period.

13.10 Agricultural Extension

13.10.1 Transfer of technologies and diversification and intensification of crop production programme through appropriate extension services are of crucial importance to Bangladesh agriculture. The extension services must be able to render the needed technical advice and management support at the appropriate time and place. Currently, the extension service draws its strength from research findings as well as from farmer's innovation. On the one hand, it acquires up-to-date findings from research and transfers them to the farmers, and on the other hand, it brings feedback in the shape of farmers' problems to the concern of research for possible solution and again takes back the results to the farmers for their field adoption. Strengthening of these three way linkages among research, extension and farmers community is vital for the development of a strong and effective new agricultural extension policy (NAEP). The Regional Technical Committee (RTC) and District Technical Committee (DTC) have been replaced by 18 Agricultural Technical Committees (ATC), each covering 2-6 districts in similar agro-ecological zone (AEZ). The composition of National Technical Co-ordination Committee (NTCC) has been amended to include representatives from NGOs

and farming community also. Agricultural extension together with nutritional awareness programme will receive about 8 per cent of the agricultural development Plan outlay .

13.10.2 Strategies to develop extension services: The following will be constituents of strategies to develop extension services:

- a. development of qualitative demonstration, field days, agricultural exhibition;
- b. farming system approach to extension system;
- c. non-commodity approach, i.e., irrigation technology, seed technology, on-farm water management technology and uses, IPM;
- d. strengthening of field level activities through proper delegation of authority from headquarters to field level;
- e. priority to marginal and small farmers;
- f. development and promotion of environmentally sound farming practices; and
- g. involving local government bodies, especially union and thana parishads in the process;

13.10.3 Local government bodies will co-ordinate, monitor and supervise the activities of agricultural extension service at the grassroots level. The NGOs, local government institutions and the extension personnel will work jointly for extension services. The role of BADC will be re-structured in accordance with the findings and recommendations of the recently formed Agriculture Commission.

13.10.4 Agricultural and rural training: In addition to higher education at agricultural colleges and the University, several other training institutions teach and train personnel who serve the agricultural sector. These institutions are Central Extension Resources Development Institute (CERDI) at Joydebpur, Graduate Training Institute (GTI) attached to Agricultural University at Mymensingh and 12 Agricultural Training Institutes (ATIs) located throughout the country; although the training facilities vary considerably among institutes, they are generally inadequate and need support for overall improvement. The curricula equally emphasise both academic and field trainings. During the Fifth Plan period, two ATIs will be established to meet the growing needs of extension personnel including women extension agents. Besides, Academy for Rural Development at Comilla and that at Bogra will train agriculture personnel of the Ministry of Local Government, Rural Development and Co-operatives in addition to pursuing their training programme for model farmers and managers of village co-operative societies on various aspects of agricultural development. To make the agricultural extension service efficient and effective, the training and communication support of extension system needs to be reorganised, strengthened and improved. The ATIs and CERDI will emphasise the qualitative aspects of training in agricultural management, instruction in the production of training materials, training of trainers and of extension agents. Training institutes will be given responsibilities for extension work in the nearby villages of their locations with the objective of achieving better organised extension work in the rural communities which will, in turn, result in an improvement in the quality of training. In support of the agricultural extension services, agricultural information service will concentrate on the systematic planning of multi-media communication activities to assist crop production and on taking initiatives in other relevant areas and fields.

13.11 Agricultural Education

13.11.1 The objectives of agricultural development can be realised through the effective spread of education and application of science and technology. The improvement in the prevailing educational system is essential, if progress and development are to occur in

agriculture. Increased levels of literacy and education among rural people are important factors conditioning the rate of adoption of improved technologies.

13.11.2 Recognising the need for development of scientific base for modernising agriculture, the country requires a continuing flow of efficient and qualified human capital to upgrade, maintain and implement development programmes and projects in a wide variety of public and private institutions serving agriculture. The responsibility of training these people lies mainly with the system of higher agricultural education. There is already a base of physical facilities at Bangladesh Agricultural University (BAU) at Mymensingh, Bangabandhu Agricultural University at Joydebpur and in agricultural colleges at Dhaka, Patuakhali and Dinajpur. The existing infrastructural base for higher agricultural education at Mymensingh and Joydebpur is under-utilised, though broad enough to meet the requirements of the country for various levels of agricultural experts and extension personnel.

13.11.3 Agricultural education system will be reorganised and strengthened and will be brought in line with the country's agricultural needs. Teaching will be linked to actual farming practices in specific farming conditions. Syllabi for agricultural education will be suitably modified so as to contribute effectively to the requirements of a dynamic agricultural sector. The major attention will be given to improve the quality of teaching and training and related student output so that the overall response of the system of agricultural education is sufficient to underpin the development of human capital and the science and technology base for agricultural modernisation.

13.11.4 Setting up of agricultural colleges in the private sector will be encouraged in the Fifth Plan period. Agricultural education has already been introduced at the secondary and higher secondary levels which will be further improved in years to come. Special emphasis will be given to the training of the teachers.

13.12 Private Sector

13.12.1 During the Fifth Plan, private sector investment in agriculture will be encouraged, particularly in areas of manufacturing of farm machinery and implements, irrigation equipment, fertilisers and pesticides, development of quality seeds, processing and storing of food, vegetables, fruits and others agricultural products. Adequate fund is likely to be available for these purposes. For a sustainable growth of the agricultural sector, appropriate fiscal and monetary measures will be framed taking into account the economy-wide and transboundary circumstances and issues. The public sector will provide public goods and services (research, extension, agricultural education, etc.), which may not be efficiently and adequately supplied by the private sector, support development of technical know-how and promote access to foreign markets, technology and capital.

13.13 Land Use

13.13.1 The Bangladesh National Conservation Strategy identified six important areas of conflicting land uses in rural areas. These are: crop agriculture vs. shrimp and capture fisheries, forest land vs. shrimp and capture fisheries; crop agriculture vs. livestock; agriculture vs. settlements; agriculture vs. brick fields; and agriculture vs. newly accreted char lands. Traditional systems found ways to make these various land uses compatible. These manifested in traditional seasonal shrimp culture and rice cropping, fallow periods and community grazing land for livestock. Due to population pressure on land, however, these traditional approaches are breaking down; available agricultural land per capita is roughly half of what it was 25 years ago. As a result, more intensified uses such as intensified mono-

cropping, intensified shrimp cultivation, and extensive brick fields are degrading soil fertility. Cropping on fragile char land before it has stabilised invites rapid erosion. Flood control and drainage structure have altered land and water use pattern and led to the decline of fish stocks and production by more than 25 per cent in recent years.

13.13.2 To replace traditional land use systems, more careful attention will be given to the impacts of current land uses. More can be done to maximise land productivity in order to continue to maintain per capita level of agricultural output. Bangladesh can functionally expand its 'land' base by more intensive cropping, better use of water and coastal resources, rational forest management, more attention to integrated land use and development of mixed cropping systems.

13.13.3 Resolving land use conflicts will be given special attention for sustainable agricultural development. Formulation of appropriate land use/zoning policy to ensure optimum use of land, prevent the use of prime agricultural land for brick making and industrial production, protect land from degradation, reclaim unutilised or degraded land for suitable use and improve the land resources for future generation will be taken up.

13.13.4 Priority of use of land between competing sectors is to be fixed in consideration of different physiographic units and sub-units which have different use potentials. While agriculture will receive a high priority in allocation of all the naturally fertile land, other sectors of production of renewable resources like forestry, fishery and livestock should also receive due importance. Forestry will have additional consideration in the policy due to its importance in environmental protection. The land use policy will clearly enunciate that good agricultural land is not allotted for or converted to non-agricultural uses like indiscriminate urban and industrial development.

13.14 Agricultural Development and Poverty Alleviation

13.14.1 Crop agriculture and minor irrigation served as the prime generators of income and employment in the rural Bangladesh over the past two decades. There is no doubt that the modern HYV seed-fertiliser-irrigation technology has made a significant impact on rural poverty alleviation. Modern agricultural technology has also helped generate employment in the rural areas, particularly for the landless. The diffusion of agricultural technology has also helped changing the nature and terms of the tenancy market impacting on income distribution and poverty. Some possible technology interventions with reference to the asset status of households in the Fifth Five Year Plan period will be the following:

- a. assetless:** Value adding activities utilising the biomass available within the village, raising plant nursery, seedlings, compost making, processing fruits and vegetables, feed preparation for poultry and livestock, mushroom production, silk worm rearing, etc. and development of common property resources including utilisation of wastelands, road sides, embankments and derelict ponds for fisheries;
- b. marginal and small farmers:** Labour intensive production activities such as dairy and poultry raising, vegetable growing, flower production, hybrid seed production, integrated resource management systems including recycling and value added agricultural products;
- c. medium and large farmers:** Technology interventions including those which will save farm inputs, e.g., bio-fertiliser, bio-pesticides including integrated pest management system and inter multiple and relay-cropping systems;

- d. promoting rural small-scale enterprises:** Small-scale enterprises in fertilisers, seeds, irrigation equipment and other agricultural machinery and small-scale processing units by the rural poor; and
- e. support to rural women:** Investments in collective and labour-saving activities such as grain mills, alternative sources of water within easy reach of households, appropriate technology for food processing like homestead horticulture, post-harvest processing and storage of agricultural produces, small scale agro-based industries and child care centres.

13.15 Agriculture and Nutrition

13.15.1 The objectives of nutrition in agriculture commensurate with those of the crop production consist of crop diversification and increased production of fish, livestock and poultry. However, specific objectives in this respect will be to: (a) create nutritional awareness at the farm family level for changing food habits and to create effective demand for nutrient-rich food items; (b) increase balanced production and consumption, especially of oilseeds, pulses, nutrient-rich vegetables and fruits in order to ensure household food security; (c) encourage homestead gardening for production of fruits and vegetables; (d) adopt and promote rearing small scale poultry and fisheries at the household level to ensure nutrition security as well as income generation; and (e) minimise post-harvest loss through food processing and preservation at household level to ensure gender equity and empowerment of distressed people.

13.15.2 Following actions will be pursued for creating awareness and increasing consumption of nutritious food during the Fifth Plan period:

- a. nutritional consideration and objective will be incorporated in development projects and programmes of agriculture as one of the themes of International Conference on Nutrition (ICN);
- b. the nutritional problems in all the agro-ecological zones (AEZ) will be identified as a basis for developing crop production plan to improve nutrition situation in the country;
- c. short term nutrition training programmes for the personnel of the Department of Agriculture Extension (DAE), Department of Livestock and Department of Fisheries and informal training for social workers, religious leaders, farmers and consumers will be organised;
- d. workshops and seminars at thana level will be arranged and farmers rally and field-days at farm level will be held;
- e. incorporation of nutrition into curriculum of agricultural education and training will be made;
- f. training on nutrition and food demonstration for wider dissemination of nutrition rich practices will be organised;
- g. nutritional motivation through mass media campaign and school and mosque based campaign in collaboration with extension workers/agencies and NGOs will be organised;
- h. food and nutrition fair to create increased nutrition awareness through demonstration of proper cooking and food preservation methods will be undertaken;
- i. all actions and programmes identified in the National Plan of Action for Nutrition (NPAN) for the agriculture sector will be implemented through government organisations, NGOs, and other relevant agencies; and

- j. the Bangladesh Institute of Research and Training on Applied Nutrition (BIRTAN) will implement and co-ordinate all nutrition activities in the agriculture sector.

13.16 Environmental Protection

13.16.1 Strategies for sustainable development of the agriculture sector during the Fifth Plan period will be devised to ensure environmental protection/conservation by way of addressing the major problems such as:

- a. resource utilisation according to potentials;
- b. policy options for environmental protection; and
- c. location-specific technologies and their proper diffusion;

13.16.2 Agricultural development policy will pay due attention to environment protection. Efforts will be made to combat natural hazards like floods, storm surges, drought and river bank erosion and consequential environmental problems such as salinity, drainage, etc. Human induced problems such as accelerated soil erosion, desertification, deforestation, salinity, organic matter depletion, soil degradation, water logging, etc. will also be effectively addressed to improve environment. In course of utilising physical resources of land and water and human resources for agricultural development and making other related development intervention, an appropriate protection measures for the country's complex environmental system will be carefully adopted.

13.17 Women in Agriculture

13.17.1 One of the major advances made in the last two decades in the agricultural sector is the recognition of women as important contributor to the food security in Bangladesh. The role of women in increasing yield potentials of agricultural production, in post-harvest operations, in homestead or home-based activities, in resource conservation and in agricultural decision-making is now well recognised. Policy will be formulated for implementing WID in all programmes that will be undertaken in the sector. Women's participation will be envisaged in all development programmes/projects. Increased female participation will be encouraged at the planning, implementing and evaluation stages of any programme. Raising gender awareness, enhancing access of women in agro-business and strengthening equal participation are some of the specific areas on which development programmes/projects will be taken up during the Fifth Plan. NGOs will be directly involved in WID.

13.18 Area Development

13.18.1 During the last two decades, the government has initiated a number of area development projects, focusing on regional agricultural and infrastructural development. Increased understanding about the nature of underdevelopment in the rural area and concern for balanced and regional development have led to the emphasis upon undertaking regionally based agriculture-led development projects. Also, the need for target programmes for disadvantaged groups such as landless, marginal and small farmers and women is widely recognised. Therefore, programmes envisaged for less developed regions and disadvantaged groups have been developed with assistance from various donor agencies and by the government's own initiatives during the Third and Fourth Plan periods. Their impact on reducing rural poverty and accelerating socio-economic development of the lagging areas has been moderate and vast number of the target group population and many lagging areas are still without effective programme support. The objectives of the area development programmes are poverty alleviation, reduction of malnutrition and assurance of food security

for the disadvantaged people. There will be three strategic thrusts in such programmes during the Fifth Plan:

- a. an integrated farming and resource systems approach to area development;
- b. special consideration of the major disadvantaged groups in all programmes; and
- c. increased co-ordination with, and contracting out to, the Grameen Bank and NGOs.

13.19 Financial Outlay During Fifth Plan

13.19.1 The public sector financial outlay for crop agriculture has been estimated at Tk. 21,425.38 million. The programme wise financial outlay is presented in Table 13.3.

Table 13.3
Financial Outlay for Crop Agriculture During Fifth Plan
(at 1996/97 prices)

Programme	Total	Percent
1	2	3
Agricultural Extension	1,650.00	7.70
Applied Nutrition	50.00	0.23
Agricultural Research	2,500.00	11.67
Crop Diversification	1,900.00	8.87
Seed Development	6,000.00	28.00
Fertiliser and Soil Improvement	550.00	2.57
Agricultural Marketing	500.00	2.33
Women in Agricultural Development	50.00	0.23
Environmental Protection	500.00	2.33
Human Resources Development	250.00	1.17
Other Essential Agricultural Sector Investment Programmes/Projects		
(a) Area Development Programmes	3,860.00	18.02
(b) Agro-business Development, Mechanisation and Private Sector Development	2,600.00	12.14
(c) Agricultural Rehabilitation Programmes	950.00	4.43
(d) Agricultural Insurance Programmes	5.00	0.02
Agricultural Statistics and Others	60.38	0.29
Total	21,425.38	100.00

13.19.2 In addition to the public sector outlay, an amount of Tk. 65,038.91 million is expected to be invested for the development of crop agriculture in the private sector.

B. Food Management

13.20 Past Performance

13.20.1 Vulnerability of domestic production of foodgrain necessitated the building up of an elaborate public food distribution system (PFDS) over the years. PFDS aimed at both meeting emergency needs as well as normal demand of the poor households in addition to meeting institutional demand originating in hostels, hospitals, jails, etc. While the distribution of public foodgrain continued to expand, it acquired a new emphasis through domestic procurement on a voluntary basis as a tool for stimulating foodgrain production with price support and open market sales (OMS) for price stabilisation at consumers level. Thus, it has both consumption and production objectives and in respect of both, of late, it has undergone changes with the growth of domestic output and greater availability of foodgrain in markets.

13.20.2 During the Fourth Plan period, sale of foodgrain through the statutory rationing channel of the PFDS was almost withdrawn. As a result, there was a significant change in the

shares of foodgrain distribution through monetised and non-monetised channels. For example, the PFDS distribution through monetised and non-monetised channels were 63 per cent and 37 per cent respectively in 1990/91 which reversed to 32 per cent and 68 per cent correspondingly in 1994/95. During the period, overall increase in the production of HYV boro rice due to expansion of irrigation facilities in the dry season, expansion of foodgrain trade with the development of transport system, opening of import of foodgrain to the private traders and improvement in the institutional capability to face crisis situation like drought, flood, cyclone, etc., largely contributed to much dampened seasonal fluctuations in the supply and prices of foodgrain.

13.20.3 In support of the public food distribution system, foodgrain storage capacity built up to about 1.80 million mt till 1985 increased to 1.86 million mt at the end of the Third Plan (1985-90). The Fourth Plan proposed to maintain this capacity keeping in line with its privatisation policy. During this period, its main emphasis was on repair and rehabilitation of the existing silos, CSDs, LSDs, etc., and construction of storage capacities at strategic places.

13.21 Fifth Five Year Plan

13.21.1 Objectives: Attainment of foodgrain self-sufficiency and food security remain the stated objectives of the national food policy and strategies. However, the objective contents of the food sub-sector during the Fifth Plan are as follows:

- a. ensuring food security for all, elevating nutritional status of the people living below poverty line;
- b. preservation and maintenance of security stock of foodgrain to meet any natural calamities, production shortfalls and supply hazards;
- c. development of a social safety net programme for vulnerable groups through improvement and enlargement of targeted food distribution;
- d. maintenance of price stability within a band to protect interests of producers and consumers;
- e. expansion of private sector in storage, distribution and trade of foodgrain; and
- f. development of a sound quality control, grading and standardisation system of all foodgrain and foodstuff.

13.21.2 Policies and strategies: Food sector has undergone major structural improvements over years both in market operations and in Public Foodgrain Distribution System (PFDS). The present policy and strategy to further liberalise the food trade will continue. However, though the private sector is expected to play a greater role in foodgrain management and trade in future, the government involvement in some specific areas will be continued in foodgrain management in consideration of the susceptibility of domestic production to natural hazards. The following issues relating to food security in particular, will continue to engage the government's attention:

- a. **Maintenance of buffer stock:** Buffer stock will be maintained to make up anticipated production and stock losses due to periodical droughts, floods and cyclones. An estimated 0.80 million mt of foodgrain will be required to be maintained as security stock.
- b. **Procurement of foodgrain:** Internal procurement of foodgrain will be continued to (i) ensure floor price to the growers and (ii) provide incentive and confidence to growers for further production.
- c. **Price stabilisation:** The government will formulate an effective mechanism to avoid wide price fluctuations. One of the current public policy is to hold food security stock for price stabilisation. Open market sale is one of the short term instruments used for avoiding temporarily wide fluctuations in market prices.

Private sector will be encouraged to own food storage facilities at strategic places such as food deficit/surplus areas. This will enable the traders to augment market supply in response to rise in prices, reducing thereby both seasonal and regional price spreads.

- d. **Targeted support for vulnerable groups:** National level foodgrain availability does not necessarily mean household food security. In spite of increasing foodgrain production and falling real prices of rice, over half of the country's population cannot afford an adequate diet. Hence, the case for public intervention remains strong and clear. Consequently, targeting the poor for supply of food remains squarely within the public domain. Vulnerable Group Development, Food for Work Programme and Food for Education in wider ambits will be some of the specific programmes of public interventions.
- e. **Government role:** To meet any shortfall in the flow of required quantum of food, the public sector may have to intervene for:
 - i. preservation and maintenance of security stock;
 - ii. development of a safety net programme by improvement and enlargement of targeted food distribution;
 - iii. providing incentive to growers through procurement of foodgrain at remunerative prices;
 - iv. stabilisation of price of foodgrain in relation to production cost and purchasing power of the consumers; and
 - v. modernising and maintaining existing storage capacity by renovating old food godowns and, if necessary, constructing new godowns in strategic areas of the country.
- f. **WTO and measures for food security:** Members of the World Trade Organisation (WTO) are currently implementing various reforms agreed upon in the area of agriculture during the Uruguay Round of multilateral trade negotiations. The central element of these reforms which will vitally affect the foodgrain price and food security of net food importing countries like Bangladesh is substantial progressive reduction in agricultural protection so as to establish a fair and market-oriented agricultural trading system. This measure, though expected to eliminate protections and to correct distortions in world agricultural markets, is likely to push domestic prices of agricultural products up, at least in the short and medium terms. As a result, Bangladesh, a least developed and net food importing country, may experience negative effects in terms of availability of adequate supplies of imported food-stuff on reasonable terms and conditions, and short term difficulties in financing normal level of commercial imports of basic food-stuff. To offset these adverse effects and, thus strengthen food security, Bangladesh will have to initiate negotiations in appropriate forums to establish a level of food aid commitment sufficient to meet its needs and to adopt measures to ensure that an increasing proportion of food-stuff be provided as grants for meeting needs of the target groups. Bangladesh will also pursue the case for increased quantum of technical and financial assistance to improve its agricultural production/productivity as well as relevant infrastructure. Besides, Bangladesh will work out with its development partners an arrangement under food aid for domestic procurement of foodgrain from the surplus regions and for distribution to deficit regions.

13.21.3 Food balance: The necessity of food budgeting and management in Bangladesh arise due to a variety of factors. The country is densely populated having a small area and bulk of the population suffers from malnutrition. The food crops are often affected by vagaries of nature such as drought, flood and cyclone. Thus, there is continued insecurity in domestic food supply which remains one of the major concerns for the country. In spite of efforts to reach food self-sufficiency, the country remains food deficit mainly because the

population growth could not be controlled as desired and the growth of food production could not be achieved to a level as required for feeding the additional population. However, the situation is projected to improve during the Fifth Plan period. The projected food balance during the terminal year of the Plan vis-a-vis the base year is shown in Table 13.4.

Table 13.4
Projected Food Balance in Fifth Plan

(in million mt)

	1996/97 (Base Year)	2001/2002 (Terminal Year)
Population (million)	123.80	132.50
Food Requirement *	20.50	21.94
Production of Foodgrain	20.43	25.12
Seed and Wastage (10%)	2.04	2.51
Net Production	18.39	22.61
Food Balance	(-) 2.11	+ 0.67

*Total foodgrain requirement has been calculated on the basis of per capita per day requirement of 453.59 grams (16.0 Oz).

13.21.4 During the terminal year (2001/2002) of the Fifth Plan, the total size of the population is estimated to reach at 132.50 million. In order to feed them, the country will need 21.94 million mt of foodgrain. Foodgrain production has been projected to be 25.12 million mt in 2001/2002. After deducting 10 per cent for seed and wastage from the gross production, 22.61 million mt of foodgrain will be available for consumption. Thus, the country is likely to attain food self-sufficiency and may have a surplus of 0.67 million mt by the terminal year (2001/2002) of the Fifth Plan. But since this estimate is based on a normative demand at the rate of 453.59 gm a day per capita, while effective demand will be lower due to lack of purchasing power from income and employment, actual surplus will be correspondingly higher. Lest this causes a slump in domestic price level and consequently, discourages farmers to increase production, public intervention will be necessary to ensure a remunerative price to farmers. On the other hand, shortfall in effective demand will need income transfer to the poor households till income and employment generation can raise purchasing power adequately.

13.21.5 Financial outlay: The programme-wise financial outlay in the public sector for the Fifth Plan is given in Table 13.5.

Table 13.5
Financial Outlay for Food Management Facilities in Public Sector During Fifth Plan
(at 1996/97 prices)

(in million Taka)

Programme	1997/98	1998/99	1999/ 2000	2000/ 2001	2001/ 2002	Total (1997/98- 2001/2002)
1	2	3	4	5	6	7
Repair and rehabilitation of existing silos, CSDs, LSDs etc.	195.00	214.00	214.00	220.00	225.00	1,068.00
Construction of silos/new storage capacity at strategic places and the related infrastructural facilities.	140.00	140.00	140.00	150.00	186.00	756.00
Establishment of food testing laboratories throughout the country.	1.00	24.00	25.00	-	-	50.00
Research/Monitoring/ Training on food management /operation and strategy/ computer network.	100.00	100.00	100.00	20.20	-	320.20
_Total	436.00	478.00	479.00	390.20	411.00	2,194.20

C. Fisheries

13.22 Past Performance

13.22.1 Fisheries play a major role in nutrition, employment and foreign exchange earnings. About 60 per cent of animal protein is supplied by fish alone and about 1.2 million people are directly employed by this sub-sector. Another 11 million people indirectly earn their livelihood out of activities related to fisheries. The production of fish was estimated to be 1,373 thousand mt during 1996/97 as against 847 thousand mt in 1989/90. It is estimated that production of inland fish was 1,079 thousand mt and that of marine fish about 294 thousand mt. The growth rate of fish production during the last seven years averaged at 6.5 per cent which fell short of increase in demand; however, the present rate of fish production has increased to 8 per cent per year. Over the last decade, price of fish increased at an annual rate of 2.5 per cent.

13.22.2 There are various impediments to fisheries development, some of which are particular to sources of fisheries. In case of capture fishery, inadequate knowledge, over-fishing and indiscriminate killing of juveniles and destruction of spawning grounds, obstruction of migration routes due to unplanned construction of dams and embankments under the flood control, drainage and irrigation projects, degradation of water quality, breakout of fish diseases, defective fish conservation laws and inadequacy of processing, marketing and other facilities are some of the major factors affecting the desired rate of development. The major constraints limiting fish culture relate to problems of property rights, competing water uses and related conflicts, lack of equipment and credit, lack of trained manpower and quality fish feed, etc. In case of marine fishery, inadequate knowledge and information of fisheries resources, lack of proper management policy and modern fishing know-how, use of inefficient fishing equipment and inadequacy of harbour and landing facilities as well as credit are important impediments.

13.23 Fifth Five Year Plan

13.23.1 Objectives: The major thrust for fisheries development will be on culture and capture fisheries, promotion of rice-fish farming system in the vast flood plains and conservation and management along with institutional and manpower development for equitable distribution of benefits from common property water resources through research on social engineering. The major objectives of fisheries sub-sector development during the Fifth Plan are to:

- a. generate additional employment opportunities in fisheries and ancillary industries to help poverty alleviation;
- b. increase fish production and improve nutritional level;
- c. improve the socio-economic conditions of the fishermen, fish farmers and others engaged in the fishery sub-sector;
- d. increase export earnings from shrimp, fish and fish products;
- e. improve environmental conditions;
- f. improve the biological and institutional management mechanisms for judicious use of fisheries resources; and
- g. strengthen research, extension, management and co-ordination in order to transfer technology and encourage production activities in the private sector and to ensure sustainable development of fisheries resources, particularly utilising water resources of the vast flood plains.

13.23.2 Policies/Strategies: Keeping in view the objectives stated above, the policies/strategies to be taken up for the development of fisheries are as follows:

- a. semi-intensive poly-culture of fish will be ensured in all ponds, dighis and other closed and semi-closed water bodies;
- b. stocking of fish fry in flood plains and semi-closed water and flood control, drainage and irrigation (FCDI) project areas will be continued to halt the declining trend of open water capture fisheries;
- c. sanctuaries will be established to conserve fish spawning grounds at different areas of the country; measures will be taken to stop indiscriminate fishing of gravid female and undersized fish; spawning grounds of the main fish species like Rui, Katla, Hilsa, Pangas, Golda Chingri, etc. will be identified to establish fish sanctuaries;
- d. adequate credit facilities for the fish farmers will be created and credit guarantee scheme will be introduced for marginal farmers; import of machinery and equipment for private sector hatchery, feeds and feed ingredients will be further liberalised and duties and taxes thereon will be reduced;
- e. training facilities for development of suitable manpower and entrepreneur groups will be extended both in the public and private sectors and multi-sectoral development approach will be followed;
- f. bio-technological elements will be applied in conservation of fisheries resources in all large water bodies, viz., baors, haors, beels, rivers, canals, and lakes;
- g. fisheries management policy will be implemented to improve the socio-economic conditions of fishermen;
- h. all precautionary and mitigatory measures will be taken so that fishing grounds may not be affected during the development works of other sectors like flood control, drainage and irrigation projects, agriculture, industries and urban development programmes;
- i. physical facilities like electricity, roads, transports, fresh water, etc., will be created and made available to develop brackish water fish and shrimp resources;
- j. traditional methods of shrimp culture will be improved by introducing modern technology for increased production; shrimp culture extension service will be strengthened to take necessary steps for the establishment of shrimp hatchery at private level;
- k. marine fisheries resources survey will be strengthened to ascertain the exact stock of resources in the interest of fish harvest at maximum sustainable yields;
- l. programmes will be undertaken to improve the socio-economic conditions of the coastal fishermen communities;
- m. quality of fish and shrimps will be ensured for the export of fish and shrimps through creation of facilities and modern quality certification system; and
- n. khas ponds, dighis, canals, road-side ditches, etc., will be excavated/re-excavated/developed for fish culture through participation of the rural unemployed youth, marginal farmers and distressed women;

13.24 Major Programme Areas

13.24.1 Open water capture fisheries: A 2.8 million ha fish habitats in the flood plains remain as unutilised resources of fish production. In order to increase production in open water fisheries, programmes will be undertaken to (i) conserve resources through rigorous implementation of the laws on fish protection and motivation of fishermen, (ii) establish fish sanctuaries, (iii) increase production by massive stocking of fast growing carp fingerlings in the natural depressions and flood plains, and (iv) develop fish culture in paddy fields through protective measures against adverse effects of flood control, drainage and irrigation projects, roads and high ways projects and township and housing projects. Observing the declining

trend of the stock of open water fisheries in the recent past, efforts were made to augment the stock through release of fish fries in the flood plains. But these programmes did not yield good results. Appropriate procedural and management systems will be evolved to ensure accountability and transparency in the execution of programmes for open water fisheries in the Plan period.

13.24.2 Closed water culture fisheries: There are over 1.3 million ponds covering an estimated area of 147,000 ha, some 6,000 ha of ox-bow lakes and over 130,000 ha of shrimps farms. Currently, the average production in fresh water ponds is 1.4 mt./ha. and that of brackish water shrimp farms only 160 kg/ha. Programmes will be undertaken to bring all of 1.3 million ponds under extension programmes of DOF, BFDC, FRI and NGOs during the Plan period to raise the present total production of 331,900 mt to at least 450,000 mt of fish.

13.24.3 Brackish water aquaculture: An estimated 0.143 million ha of coastal land is under brackish water shrimp farming. The method is largely traditional where an average production of 160 kg/ha is currently obtained. Recently, farmers, especially in Bagerhat and Perojpur areas, have started shrimp farming in their paddy fields. Farming area is rapidly expanding. Development of brackish water fisheries will be contingent upon the provision of infrastructures, supply of seed, feed and other inputs, security, technical advice, disease control and training of the farmers on improved scientific farming system. With more support from DOF, BFDC, FRI and other extension agencies, it will be possible to raise production in shrimp farms to a level of 400 kg/ha which will yield an additional production of at least 60,000 mt by the terminal year of the Plan. Semi-intensive farming is currently practised in 5,000 ha area by a number of entrepreneurs where production of 3-5 mt/ha has been achieved. The DOF is currently identifying suitable areas for semi-intensive farming and suitable sites for establishment of shrimp hatcheries. Private entrepreneurs will be encouraged to invest in hatchery operation. The government will support development of suitable land with road, electricity and other infrastructures. Private sector joint venture investment including foreign investments in hatchery operation, feed production and other related activities will be encouraged .

13.25 Marine Fisheries

13.25.1 With the extension of exclusive economic zone (EEZ) upto 200 nautical miles beyond our shore lines in 1974, Bangladesh resumed the responsibility for exploitation and management of living and non-living resources within its 1,64,000 sq. km. sea area. Since unlike the mineral resources, fish is a renewable living resource, only judicious exploitation and scientific management and development can ensure maximum benefit out of it. Over the last two decades, the share of marine fisheries in the total national landing rose from 10.6% in 1970 to about 22% in 1996. If appropriate technology can be adopted, this can be increased manifold.

13.25.2 The increasing pressure on the coastal resources in Bangladesh has caused decline of many marine fishes and shell fishes in the Bay of Bengal. The artisanal fishing which contributes about 95% of the total marine landing is largely composed of post larvae and juveniles which are seriously damaging the stock due to use of crude traditional technology. The number of artisanal fishing gears including estuarine set bag nets, beach seine nets and shrimp seed push nets are increasing alarmingly causing serious over exploitation of stocks. So, the following measures/programmes will be undertaken to improve the marine fisheries resources during the Fifth Plan period:

- a. assessment of pelagic, demersal and other marine resources and their development;

- b. studying and monitoring of oceanographic parameters of the EEZ of Bangladesh;
- c. imparting training to the coastal fishermen and providing support services to improve the socio-economic conditions of coastal fishermen community ;
- d. issuance of licences to mechanised and non-mechanised boats and identity cards to fishermen;
- e. continuous supervision and monitoring of fishing;
- f. ensuring replacement of destructive gears like estuarine set bag net and beach seine nets by other appropriate fishing gears;
- g. reduction of mortality of fish and shrimp larvae during shrimp seed collection;
- h. conservation of marine fisheries resources in the mangrove reserve forest;
- i. stopping sea piracy by trawl fishing of neighbouring countries with the help of the Coast Guards/Naval Forces;
- j. pollution control and environmental conservation through strict enforcement of marine fisheries laws; and
- k. proper utilisation of trash fish, now thrown away by the trawlers;

13.25.3 Post-harvest technology and marketing: Fish marketing carried out at four different stages, largely in the hands of the private sector, is managed, financed and controlled by a group of intermediaries known as "aratders" and "mahajans." The "aratders" provide advances to fish traders who in turn are required to bring fish to them for sale. The fish marketing system is thus traditional and complex though not very competitive. However, it faces serious problems including heavy losses, waste and poor fish quality. It is believed that in Bangladesh, 30 to 33 per cent of all fish caught become unsuitable for human consumption. This economic waste will be reduced through provision of cold-storage facilities, insulated and refrigerated transport systems and adequate supplies of ice. The marketing system will also adjust to (a) expanding export demand for quality frozen sea food, (b) expanding domestic demand for quality fresh and frozen fish and (c) large seasonal fish catches in areas far from the main markets and fish landing centres.

13.25.4 Peoples participation in fisheries: Fisheries sector is considered to be the thrust sector for sustainable development and socio-economic advancement of rural fishermen and fish farmers. Almost all the activities of fish breeding, nursing, feeding, fisheries training, harvesting, transportation, marketing, exporting and other ancillary activities are done by the private sector. Research, development, extension and regulatory activities are performed by the public sector. Twenty five technology packages have already been developed and are being implemented on experimental basis from 1996/97. Recently, some NGOs and private development organisations are involved in group formation, motivation, training and income generating activities of the fishing community and marginal farmers. A strong and effective linkage system will be developed between the government, especially local government bodies, non-government and private organisations in respect of planning, implementation and monitoring of the fisheries development programme. About 10,000 entrepreneurs will be developed in different fields of fisheries during the next five years. Job opportunities for 42,500 poor people will be created in this sub-sector.

13.26 Fisheries Research

13.26.1 Lack of technical knowledge, fish seed, proper management, disease control and suitable manpower account for the present low level fish production in Bangladesh. The onslaught of viral epidemics destroying substantial quantity of pond and fresh water fishes as well as brackish water shrimps has caused concern to the government and the people. Appropriate research support will be provided to address these issues. In particular, it is

proposed to commission a comprehensive study to analyse the sources and causes of fish and shrimp diseases and find out remedial measures.

13.27 Production and Export Projection During Fifth Five Year Plan

13.27.1 The current level of per capita daily fish consumption is about 25.6 gm. In order to raise the level of consumption to about 34.43 gm per capita per day at the end of the Plan period, the required production of fish will be 1.67 million mt. This is based on estimated projection of 132.5 million population by the terminal year of the Plan. In addition, it is assumed that during 2001/2002, the export of shrimp and fish and fish products will be 95,000 mt and another 15,000 mt of fish will be required for industrial and other uses. In view of this demand, the fish production target at the terminal year of the Fifth Plan has been set at 2.075 million mt. Table 13.6 gives the details of projection of fish production in the terminal year of the Fifth Plan.

Table 13.6
Projection of Fish Production During Fifth Plan

(in '000' metric Tons)

Source of production	1996/97 (Benchmark)	2001/2002 (Projection)
1	2	3
1. Inland Fisheries	1,079.00	1,675.00
Ponds	331.90	450.00
Baors	3.50	27.00
Coastal aquaculture	85.00	100.00
Rivers and estuaries	165.00	180.00
Beels and haors	70.00	95.00
Kaptai lake	7.60	9.00
Flood plain	395.00	751.00
Irrigation canals, road side ditches, fresh water polders and enclosures, etc.	21.00	63.00
2. Marine Fisheries	294.00	400.00
Total (1+2) :	1,373.00	2,075.00

13.27.2 Export earnings from shrimp, fish and fish products and other aquatic organisms during 2001/2002 are expected to be Tk.38,045.00 million as against estimated earnings of Tk.16,000.00 million in 1996/97. The export projection for the Fifth Plan is shown in Table 13.7.

Table 13.7
Export Projection of Fish and Fish Products in Fifth Plan Period

(Qty in '000' m tons, Value in million Taka.)

Items	1996/97 (Benchmark)		2001/2002 (Projection)	
	2	3	4	5
1	Qty.	Value	Qty.	Value
Shrimp	28.00	13,150.00	70.00	32,900.00
Fish and fish products	9.80	2,250.00	20.00	4,600.00
Others	5.50	600.00	5.00	545.00
Total :	43.30	16,000.00	95.00	38,045.00

13.27.3 Financial outlay: In order to implement the fisheries development programmes, Tk.5,861.80 million has been earmarked for the public sector during the Fifth Plan. Programme-wise financial outlay is shown in Table 13.8.

Table 13.8
Financial Outlay for Fisheries Development in Public Sector
During Fifth Plan (at 1996/97 prices)

Programme	Financial Outlay
Survey, investigation, feasibility study, research, etc.	400.00
Fisheries education, training, extension and community development	890.00
Culture and capture fisheries development (including inputs and waterbodies development)	4,360.00
Fish landing, storage, processing, marketing, transportation, distribution, etc.	211.80
Total :	5,861.80

(in million Taka)

13.27.4 Private sector: Appropriate programmes and projects will be promoted for implementation in the private sector with support services from the public sector in such areas as fish hatchery, feed mill, culture of fish and other aquatic organisms, fish processing, fish preservation, fish production, domestic sale and export. An amount of Tk.21,847.00 million is expected to be invested by the private entrepreneurs--local and foreign, for implementation of these programmes/projects. Expectedly, investment by the private entrepreneurs will be much more than what is envisaged for the public sector.

D. Livestock

13.28 Past Performance

13.28.1 Livestock sector has the makings of a highly viable sector for generation of employment and income for the landless, unemployed youths and destitute women. Little attention was given to livestock sub-sector until the recent past. In spite of that, about 50,000 private poultry farms, 26,000 duck farms and 26,000 dairy farms have been set up in the country in the private sector. Consequently, there has been a 60 per cent fall in the import of milk powder. Implementation of various development programmes as well as changes in fiscal and commercial policies resulted in the establishment of 26 thousand dairy farms in the private sector. The production of milk, meat and eggs between 1991 and 1995 as against their requirements are shown in Table 13.9.

Table 13.9
Requirement and Production of Livestock Products During Fourth Plan

Year	Population (million number)	Milk (million mt)		Meat (million mt)		Egg (million number)	
		Requirement	Production	Requirement	Production	Requirement	Production
		1	2	3	4	5	6	7
1991	108	9.86	1.34 (13.59%)	4.26	0.45 (10.56%)	8,985.60	2,046.60 (22.78%)
1995	121	11.04	1.41 (12.77%)	4.77	0.51 (10.69%)	10,067.20	2,539.00 (25.22%)

13.28.2 The production of milk and meat increased by an annual compound growth rate of 1.3 per cent and 3.2 per cent respectively. The growth rate of egg production was, however, satisfactory which was 6.5 per cent between 1990/91 and 1994/95. There are ample potentials for increasing production of milk, meat and eggs in the country. The main problems of this sector are inadequate supply of vaccine, medicine, equipment, feed, health care facilities, quality breed, parent stock, credit facilities and other inputs.

13.29 Fifth Five Year Plan

13.29.1 Objectives: The main objectives for the development of livestock sub-sector during the Fifth Plan are to :

- a. increase people's participation through development of entrepreneur groups and create new employment opportunities for small farmers, landless labourers and women and other target groups in livestock development;
- b. generate income and alleviate poverty of the rural poor through livestock development;
- c. increase the supply of milk, meat, birds, eggs, hides and skins, etc., through improvement in breed, feed and disease control of animals and birds;
- d. undertake adaptive research on breeding, feeding, disease control for cattle, Bengal goat and sheep and poultry bird by BLRI and to transfer appropriate technologies to the users;
- e. improve the quality of draft power of both cattle and buffaloes through genetic improvement, better veterinary services, adequate feed supply and improved management;
- f. increase foreign exchange earnings through the export of quality hides and skin, and to reduce dependence on import of powder milk;
- g. involve the private sector, local government bodies and NGOs in livestock industry for credit distribution, production of cattle and poultry feed, milk processing, input supply and marketing and to improve distribution network for these products in collaboration with Department of Livestock and Livestock Research Institute;
- h. privatise input supply and to provide fiscal support, if needed, for sustainable development of the sub-sector.

13.29.2 Strategies: In order to achieve the above objectives of the Fifth Plan, the following strategies will be adopted:

- a. improvement of the quality of animals and birds through genetic upgrading, preservation of native breeds and selection of exotic breed;
- b. wider provision for treatment of infectious diseases and parasitic infections and large scale production of vaccine at home;
- c. increasing fodder supply through intensive use of available land;
- d. improvement of livestock management through manpower training and skill development;
- e. improvement of the quality of draft animals and expansion of single animal ploughing system;
- f. emphasising development of dairy cattle and encouraging establishment of mini dairy farms through support services;
- g. encouraging goat and sheep production through supply of inputs;
- h. giving special emphasis on poultry husbandry for increased supply of meat and eggs;
- i. giving credit for livestock and poultry farming on reasonable terms in the private sector;
- j. improvement of marketing facilities for realisation of competitive prices by the farmers;
- k. discouraging import of powder milk and other livestock products;
- l. strengthening of the organisational and institutional framework of the Bangladesh Livestock Research Institute for undertaking research on livestock production and expanding the data base on socio-economic aspects of livestock development;

- m. training of the target groups like the landless, destitute women, unemployed youth and poor farmers in livestock management, inputs production, product processing and marketing for poverty alleviation and income generation.
- n. pricing of vaccines for cost recovery and commercialisation of Veterinary Vaccine Productions Laboratory under the Department of Livestock Services.

13.30 Major Programmes

13.30.1 Feed and fodder development: Feed mill will be established in the private sector at important places of the country. The government will provide support services in the form of credit and technologies. Fodder production will be encouraged through crop diversification, inter-cropping and plantation of fodder trees with timber trees.

13.30.2 Animal health and disease control: The programme consists of diagnosis, prevention and treatment, vaccine and medicine production and distribution. Qualitative and quantitative improvement will be made in disease control. Facilities will be expanded and number of veterinary surgeons will be increased by 350 during the Plan period. About 10,000 youths will be trained as veterinary health workers.

13.30.3 Animal breeding and breeder multiplication: Programmes will be directed towards multiplication of breeding of cattle, buffalo, goat, sheep, fowl and duck. Increase in milk, meat and egg production will be achieved mainly through quality improvement of local cattle by cross-breeding with deep frozen semen through artificial insemination and improvement of poultry through introduction of high breed commercial birds for eggs and meat production. The poultry population is expected to increase significantly during the Plan period.

13.30.4 Extension training and education: In order to increase livestock productivity, improved production technologies will be spread all over the country. Training of farmers, farm owners and NGOs for all kinds of related activities of this sector will be given through extension services and formal and informal education. Number of veterinary colleges and veterinary training institutes will be increased from 2 and 3 to 6 and 21 respectively which will be located in 6 divisions and 21 former larger districts.

13.30.5 Input production: Input production like production of vaccine, semen, day old chick, duckling and eggs through different projects included in the Plan will increase significantly. Vaccine production will increase from 350 million doses in 1996/97 to 400 million doses in 2001/2002, semen production from 1.8 million doses to 4.5 million doses, day-old chick production from 4 million to 6 million, duckling production from 0.5 million to 1.0 million and egg production from 2,815 million to 4,730 million during the Plan period. Limited input production still in the public sector will be gradually transferred to the private sector. Meanwhile, existing input supply programmes in the public sector will be run on full-cost recovery basis.

13.30.6 Employment creation and poverty alleviation: Programmes undertaken during the Fifth Plan will create positive impact on self and wage employment in livestock farming, chick and goat rearing, feed selling, and other income generating activities under different package programmes of the Department of Livestock. Credit programmes of various NGOs are supporting women's involvement in livestock production around homesteads using surplus labour and agricultural by-products. The government encourages these programmes. The total number of man days involved in the livestock development activities is likely to

increase from 12.50 million in 1996/97 to 16.00 million in 2001/2002. The beneficiaries like poultry workers will increase from 22,600 to 45,000, chick rearers from 8,000 to 12,000, key rearers from 5,00,000 to 14,00,000, feed sellers from 1,000 to 3,000, egg collectors from 2,600 to 6,500 and mini hatcheries from 200 to 1,000.

13.30.7 Projection of livestock products for Fifth Plan: The production of milk, meat and eggs will show a significant increase during the Fifth Plan period. Details may be seen in Table 13.10.

Table 13.10
Projection of Milk Meat and Egg Production During Fifth Plan

Products	Unit	1996/97 (Benchmark)		1997-2002 (Projection)				
		3	4	5	6	7	8	9
1	2	Projection	Achievement	1997/98	1998/99	1999/2000	2000/01	2001/02
Milk	'000' mt	1,600	1,510	1,680	1,764	1,850	1,942	2,058
Meat	'000' mt	600	575	630	662	702	744	788
Egg	million number	3,005	2,815	3,260	3,550	3,890	4,280	4,730

13.30.8 Marketing: Marketing of livestock products and by-products in our country is not properly organised. Livestock market places are under-developed and unhygienic. As marketing network of livestock products and by-products is not properly maintained, the producers are being deprived of their benefits. During the Fifth Plan, programmes will be taken up for improving marketing channel to ensure quality and equitable distribution of benefits at different stages of production process.

13.30.9 Research: Adaptive research on breeding, feeding, disease control, etc., will be undertaken by BLRI and appropriate technologies will be transferred to the users. Research result on fodder production, processing and preservation and vaccine production already tested and certified will be released shortly, while on going programmes in these areas will receive priority. Particular emphasis will be given to different aspects of poultry. Locally suitable poultry and cattle breed will be developed. Attempt for poultry parent and grand parent stock development will be made. Technology transfer through collaboration with international and advanced research institutions abroad will be promoted.

13.30.10 Role of NGOs: NGOs will perform major role in group formation, training, extension services, credit disbursement, supervision and recovery and conducting socio-economic studies related to development projects. Government-NGO co-operation will be more extensive for development of this sector.

13.30.11 Private sector: In the Fifth Plan period, one of the major and most important thrust of the public sector programme will be to support the private sector for the development of livestock and poultry. Towards this end, adequate technical, material and financial support, training on breeding, feed production, marketing, credit management, adoption of new technologies, disease control, etc., will be given to the private entrepreneurs. Some 23 technology packages have been developed and are being implemented on experimental basis since 1996/97. About 10,000 entrepreneurs will be trained up in different trades in the next five years. Major trainees will be poultry farmers, egg collectors, chick producers, chick rearers, feed producers, feed sellers, dairy farmers, goat rearers, etc. Integrated approach of developing livestock and fisheries will be encouraged. Fiscal supports

for importing quality breeds, feeds, feed-ingredients, equipment and medicine will be continued and further expanded, if necessary. Some productive units of the public sector will be transferred to the private sector to increase efficiency and for reduction of government subsidy for this sector.

13.30.12 Financial outlay during Fifth Plan: In order to implement the livestock development programmes during the Fifth Five Year Plan, an estimated amount of Tk.5,435.60 million will be spent in the public sector. Year wise break up is given in Table 13.11.

Table 13.11
Public Sector Financial Outlay for Livestock Development During Fifth Plan
(at 1996/97 prices)

Year	Financial Outlay
1996/97	690.00
1997/98	1,000.00
1998/99	1,000.00
1999/2000	1,012.00
2000/2001	1,164.00
2001/2002	1,259.60
Total (1997-2002)	5,435.60

(in million Taka)

13.30.13 In addition to the public sector development outlay of Tk.5,435.60 million, an amount of Tk.20,646.40 million is expected to be invested for the development of livestock by the private entrepreneurs. With increasing supports from the government, private individuals, groups and companies are coming up in a big way in different fields of livestock development. By and large, the main fields will be the establishment of poultry-duck hatchery, poultry-duck farms, dairy farms, goat farms and feed mills, fodder cultivation, beef-fattening farms, etc.

E. Forestry and Environment

Forestry

13.31 Past Performance

13.31.1 An estimated 2.45 million ha (17 per cent) of the total land of the country is under forest or potential forests. Out of this, 2.18 million ha is owned by the government as classified and unclassified forests and the rest 0.27 million ha is owned privately. In the past, wide-spread destruction, unplanned extraction, clearing of forest land for agriculture, etc., have reduced the forest coverage to about 8 per cent as against the minimum requirement of 25 per cent.

13.31.2 In the past plans, the main emphasis was to expand forests and to increase supply of timber and wood. Besides, qualitative improvement of natural forest through artificial regeneration was also given priority. During the Fourth Plan, extraction of forest resources and afforestation of the newly accreted lands continued. Later, due to increased need of environmental conservation, extraction was discouraged. Major thrust during the Fourth Plan was on people's participation and private sector investment in the management and development of forests. Forest plantation during the Fourth Plan was 43,619.84 ha against the

target of 46,947.50 ha showing 93 per cent achievement. The plan target of 16,158 km. of strip plantation was achieved by almost 100 per cent. Rubber plantation covered 1,261.78 ha of land and 7.83 million kg. of rubber was produced. Moreover, the coastal afforestation programme, bamboo, cane and murta plantation and industrial and strip plantation showed good performance.

13.32 Fifth Five Year Plan

13.32.1 Objectives: The main objectives during the Fifth Plan are to expand forest resources, make forests productive, develop institutional capabilities, and to encourage people's participation. By the end of the Fifth Five Year Plan, it is envisaged that the tree coverage will be increased to 14 per cent of the land area of the country and a sustainable status of existing forest resources will be achieved with the active participation of the local populace. Specific objectives will be to:

- a. expand and rehabilitate the forest resources to increase productivity;
- b. conserve and protect the eco-system for bio-diversity and overall environmental stability;
- c. continue and expand people-oriented afforestation programme to elevate socio-economic well-being of the people;
- d. promote multiple land use technology like agro-forestry to ensure increased productivity and supplement agricultural production;
- e. effectively conduct forestry extension activities to transfer improved technology and research information to end-users, e.g., local people and private homesteads;
- f. conduct need-oriented co-ordinated research and experimental works;
- g. initiate development of quantitative and qualitative human resources;
- h. achieve meaningful participation of local people, local government bodies, NGOs and government agencies in forestry programmes; and
- i. encourage private plantation of rubber, teak, mango, jackfruit and other high-value trees.

13.33 Policy Strategy and Programme

13.33.1 In line with the above objectives, policies, strategies and programmes for the forestry sub-sector during the Fifth Plan will be as follows :

- a. The natural forests of the country will be set aside for conservation purpose. That means, the productivity of plantations will have to be increased manifold. People's participation will be incorporated in all forest development as far as practicable including maintenance. In this regard, zoning system might be initiated. People's participation will be encouraged in the peripheral and buffer zones. Integration of tree plantation and crop cultivation will be practised. Multi-purpose trees will receive special attention.
- b. Existing low productive plantations, both mature and deforested, will be replanted in the hill forests. Scientific management principles will be strictly observed to restore productivity of these lands. A business enterprise system will be introduced to manage forests for profit. A total of 1,05,000 ha of plantations will be raised in the reserved, protected and unclassified state forest land of hilly areas during the Plan period.
- c. The existing coastal afforestation, including mangroves, will also be continued. The existing mature coastal plantations will be cut and replanted. An area of 18,000 ha will be planted and replanted in the coastal areas. The Sundarbans Reserve Forest

(SRF) is the largest single natural mangrove forest in the globe. However, SRF is presently engulfed with severe ecological problems. The most important species of this forest, Sundari is affected with top dying. Other aquatic, floral and faunal diversity are fast disappearing or on the verge of extinction. Following the integrated development approach for the forest sub-sector, an Integrated Resource Management Plan has been prepared. Another programme for bio-diversity conservation in SRF is in the pipeline. Extraction of top-dying Sundari trees and enrichment plantation is also a priority issue of the forestry sub-sector. During the Plan period, 2.5 million cft. of Sundari will be extracted and enrichment planting of 2000 ha will be carried out in the Sundarbans. The sal forests of the country has been degraded and deforested for many years. The programme to rehabilitate the sal forests will gradually be taken up as before. A total of 32,000 ha of agro-forestry and woodlot plantations will be raised under different projects in the sal forest regions.

- d. To prevent the extent of damage by cyclones and tidal surges, a programme will be undertaken under which 24,500 km. of strip forests will be raised during the Plan period.
- e. The reedlands of Sylhet has long been lying unutilised. In addition to the existing reedland development project under implementation in these areas, some more programmes will be taken up in future. Under the Fifth Plan, 7,000 ha of reedlands and 1,000 ha of wetlands will be planted by local government bodies with people's participation at grassroots level. In addition to this, 7,000 ha of char land will also be planted under the Forestry Sector Project.

13.33.2 Farmland forestry: Potentials for increasing productivity of the farmlands which are degraded due to drought condition and in the gully areas especially in the north west, exist. A project will be undertaken to afforest the farm lands/farm land ridges. Agro-forestry will be made popular gradually. About 8,000 ha of farm land plantations will be raised during the Plan period.

13.33.3 Social forestry: Social forestry has now become a social movement in Bangladesh. The programme includes expansion and strengthening of 335 thana nurseries, establishment of 2,000 union level nurseries, expansion and strengthening of 80 forest extension and nursery training centres, distribution of 40 million seedlings and raising of 19,000 km. of strip plantations. The local government bodies will co-ordinate the afforestation programmes at the grassroot level under this programme. During the Fifth Plan, NGOs will be more directly involved in afforestation programmes. They will be motivating people through informal training and other extension sources and will help the Forest Department to implement its programmes. In some cases, they will be co-sharers of benefits of the plantation projects.

13.33.4 Rubber plantation: Three hill districts and parts of greater Mymensingh, Sylhet and Tangail are specially suitable for rubber cultivation. Rubber plantation in Bangladesh was started on a pilot scale in 1961 by BFIDC. So far an area of 31,118 ha (1995) has been planted which yields 7.83 million kg raw rubber in the public sector. A total of 16,527 ha has, of late, come under rubber plantation in the private sector with a production of 0.25 million kg. Taken together, these account for about 35 per cent of the country's requirement for raw rubber. The yield rate, however, is not satisfactory. This is mainly because of poor seed and management, inadequate technical knowledge, lack of infrastructural facilities like access to roads and electricity, support services and credit. These problems will be addressed properly

in the Plan period. Inter-cropping with fruits and vegetables will be attempted. Joint participation of local and foreign investors will be explored.

13.33.5 Wood energy development : Wood energy contributes 13 per cent of the total fuel consumption of the country. Wood fuel is the most important form of energy for domestic use in rural areas. In Bangladesh, domestic cooking consumes 65 per cent of fuel wood and the rest 35 per cent is consumed by the industrial and commercial sectors. There is a wide gap between supply and demand of fuel wood in the country. To meet high demand relative to supply, recently through social forestry, short/medium rotation fast growing tree species have been planted along the roads and embankments, and on marginal and fallow lands with active participation of local people. BCSIR has developed efficient wood burning oven. Further research programmes on development of wood fuel, efficient use of wood, etc., will be undertaken in the Plan period to reduce strain on wood supply. Technical assistance may be required for this purpose.

13.33.6 Non-wood forestry products: As a subsidiary product of forests, non-wood forest products have substantial potentials for economic benefit. Bamboo, cane, murta, medicinal plants, honey, wax, gol-patta, etc., did not receive proper attention in the past. Non-wood forest products will be developed during the Fifth Plan in a systematic way. The Fifth Plan projects to cover 8,000 hectare with non-wood forest products.

13.33.7 Forestry survey and research: Emphasis will be given to homestead private forests in terms of genetic research (tissue culture) to improve productivity. Supply of inputs will be made cheaper and easier. Emphasis will be given for maximum utilisation and multiple use of land. Research on non-wood forest products, especially for rural use, will be conducted. The forest soil survey will be completed so that site-species matching can be ensured. In addition, detailed inventory of forest resources will be carried out to prepare specific forest management prescriptions. Moreover, detailed survey of about 400,000 ha forest lands will be conducted and forest areas will be demarcated to avoid unlawful encroachments.

13.33.8 Forest institutions, policies/legislation: The responsibility of development of forestry in the country rests largely with the Forest Department (FD). But the FD has long been constrained by shortage of skilled manpower, logistics and legal backing. Development of forestry to a large extent will be contingent on the institutional development/reforms of FD and other allied institutions. Future actions during the Fifth Plan will be in accordance with the new Forest Policy and the Master Plan. New laws pertaining to the conservation of forests and wildlife will be introduced. FD will be reorganised and participation of local people will be emphasised. The role of BFIDC as a public sector corporation will be reviewed, especially considering the declining scope of mechanical extraction from Chittagong Hill Tracts and opening up of rubber plantations to the private sector.

13.33.9 Extension and training: Recently, high emphasis is being given to participatory approach for development. Involving local people in implementing and maintaining development programmes is the cardinal principle of such approach. Thus, during the Fifth Plan, people-oriented programmes will receive special attention. There is a need for vigorous forestry extension activities and training to implement these programmes. The Fifth Plan projects to train about 100,000 persons, especially in social forestry at the grassroots level. Besides, as mentioned earlier, to develop the skills of manpower in the forestry sector, a total of 1,550 persons will be trained in professional, sub-professional and bottom level of the Forest Department and allied agencies.

13.33.10 Conservation: Presently, about 1.5 per cent of the total land area falls under protected land area category which is about 10 per cent of the total forest land. The protected area will be increased to 15 per cent during the Plan period. Effective management plan for all the protected areas will be prepared with the introduction of zoning system. People's participation will be effectively utilised in conserving resources in the respective zones. Along with this, eco-tourism will be introduced in a selective way based on the carrying capacity of the eco-system. Use of alternatives to forest products like steel/plastic furniture and aluminium structures will be encouraged. This will ease the pressure on forest products. Ban on the use of fuelwood in brick fields will continue and be made more effective and other modes of efficient use of energy will be promoted, e.g., improved cooking stove. Moreover, programmes will be developed and implemented to protect the threatened/endangered species of flora and fauna and the fragile eco-system. Wildlife farming of deer and reptile like crocodiles, iguana, snakes and frogs, etc., will be encouraged and promoted on a commercial basis through private initiatives.

13.33.11 Financial outlay: An amount of Tk.6,982.10 million has been provided for development of forestry in the public sector during the Fifth Plan. Details are given in Table 13.12.

Table 13.12
Physical Programme and Financial Outlay for Development of Forestry in Public Sector
During Fifth Plan

Item	Physical Activities	Financial Outlay
(in million Taka)		
FORESTRY SUB-SECTOR		
1. Plantation and Maintenance (hectare)	209,938	2,729.20
a. Hill forests (RF, PF, USF) (ha.)	105,000	1,365.00
b. Coastal afforestation and enrichment plantation in the SRF (ha.)	20,000	260.00
c. Reed land, wetland and charland plantation (ha.)	15,000	195.00
d. Agroforestry, woodlot and farmland afforestation (ha)	40,000	520.00
e. Strip plantation (24500 km) equivalent to (ha.)	19,000	247.00
f. Bamboo, cane and medicinal plants (ha.)	8,000	104.00
g. Vacant land in tea garden, around pond banks and in Barind tract gullys (ha.)	2,938	38.20
2. Seed orchard establishment (Seed orchard division)	4	129.74
3. Seedlings distribution (million number)	56.6	468.00
4. Jhumia Rehabilitation (family no.)	3,000	233.00
5. Development of Wildlife Conservation, Environment, Education, Recreation etc.	-	996.66
6. Physical Infrastructure	-	650.00
7. Vehicles/Equipment	-	191.00
8. Survey, Demarcation, Inventory and Work Plan Preparation	-	203.00
9. Manpower	3,000	708.20
10. Extension and Training	-	203.20
11. Research	-	270.00
12. Miscellaneous	-	200.10
TOTAL		6,982.10

13.34 Private Forests

13.34.1 In Bangladesh the village forest area is comprised of only 0.27 million ha. But this forest has been meeting most of the demand for forest products like timber, firewood, etc. Over the years the village forests including the homesteads have grown into a major source of forest products, especially with the initiative and involvement of local people. However, during the earlier plan periods, supports were provided from the government, mainly in terms of technical back-up and extension services. More support is necessary to establish this as a sustainable source of forest resources especially for promoting multi-purpose tree species of high productivity. Extension, training and credit facilities will be provided to encourage the private sector to undertake rubber, teak, jackfruit and other high value crop plantation on a commercial basis.

13.34.2 With the successful implementation of social forestry, thana afforestation, homestead forestry, farm forestry and agro-forestry programmes/projects, increasing investment is coming up in the private sector as well as in the public sector. An amount of Tk.4,732.00 million is projected to be invested by the private sector for nursery development, seedling raising, plantation, maintenance, etc., in the Fifth Plan period.

Environment

13.35 Past Performance

13.35.1 Bangladesh is facing a number of environmental problems. These have originated mainly from population pressure, extreme poverty, natural disasters, depletion of forest resources, energy crisis, unplanned urbanisation and industrialisation, water pollution, air pollution in major cities, soil degradation, etc. Bangladesh has been trying to combat environmental degradation and correct the same with limited facilities and resources.

13.35.2 The main theme of programmes of the Department of Environment (DOE) in the past was to develop institution and policy and programme tools to fulfil its mandate. During the last plan period, one of the vital projects of the Department was the "Improvement in Dhaka Urban Environmental Infrastructure Project" to the end of strengthening DOE's capabilities in environmental planning, pollution control and monitoring. Under this project, a laboratory and functional building was constructed at Dhaka along with procurement of 24 items of laboratory equipment and logistic supports. There was a plan for development of other regional laboratory/office building during the Fourth Five Year Plan. Due to various constraints these works could not be undertaken till the last financial year.

13.35.3 Ministry of Environment and Forest completed a comprehensive study on National Environmental Management Action Plan (NEMAP) for identifying probable environmental concerns/issues and their remedial measures in different sectors of the economy. A good number of programmes and projects have been recommended for implementation under different ministries/organisations. Subsequently, another TAPP 'Bangladesh Environment Project (BEP)' was taken up to formulate investment projects in the light of NEMAP recommendations.

13.36 Fifth Five Year Plan

13.36.1 Objectives: The main objectives of the Environment sub-sector during the Fifth Five Year Plan are as follows:

- a. promoting appropriate environment management system for sustainable development;
- b. ensuring conservation of bio-diversity and its sustainable utilisation;

- c. ensuring active participation of the poor, especially the women, in environment management activities;
- d. promoting environment-friendly activities in development programmes/projects;
- e. preserving and protecting the natural resource base;
- f. strengthening the capability of public and private sectors to manage environmental concerns;
- g. minimising environmental pollution from different industries;
- h. monitoring and controlling present environmental pollution and degradation related to soil, water and air;
- i. fulfilling obligations under international treaties and conventions for minimising adverse impacts on global environment;
- j. promoting co-operation with regional and international institutions/organisations to address global environmental problems;
- k. undertaking research and development for innovating technology in national perspective and application of modern technology, information exchange and benefit sharing with other countries; and
- l. creating public awareness in order to participate in environment promotion activities.

13.37 Policy and Strategy

13.37.1 The following policies and strategies will be taken up during the Fifth Five Year Plan to attain with the above objectives of the environment sub-sector:

- a. National Environment Council headed by the Prime Minister and Executive Committee of National Environment Council headed by the Minister for Environment and Forest will be more active for policy designs and programme directives;
- b. Environment committees at division, district and thana levels with people's participation will be strengthened; attempts will be made to form this committee at union parishad level also;
- c. Department of Environment will be strengthened in the light of existing Environment Policy, Laws and Action Plan in order to co-ordinate, monitor and implement these activities;
- d. Drafting of rules, regulations and guidelines under the Environment Protection Act (EPA) 1995 will be finalised soon in order to ensure effective enforcement of EPA;
- e. Sectoral legislations are to be reviewed and redrafted in the light of Bangladesh's commitment expressed through signing and ratifying a number of International Conventions and Protocols on environment;
- f. 'Polluters Pay Principle' will be followed in order to ensure strict compliance of environmental legislation; and
- g. Incentives in the form of tax-rebate, tax-holiday, etc., will be provided and incremental cost incurred by the environment-friendly entrepreneurs will be met in various forms and from multiple sources;

13.37.2 Programmes : In considering the socio-economic and environmental aspect of the country, the following activities/programmes/measures will be taken in the environment sub-sector during the Plan period :

- a. Raising manpower and infrastructure development of the DOE in order to fulfil its mandate; there is an urgent need to create and establish 2 (two) new divisional offices in Sylhet and Barisal Divisions and 12 (twelve) sub-regional offices with laboratory

- and other necessary facilities of local government at old districts of the country during this Five Year Plan period;
- b. Skilled manpower is essential for better environmental management and co-ordination. In this regard, DOE will undertake training programmes on different subjects concerning environment;
 - c. Survey, research and development activities in different fields and subjects will be taken up to combat environmental degradation and other environmental problems. A research and training centre will be set up during this Plan period;
 - d. Facility of data-base and documentation of different environmental subjects and fields will be created to help decision makers, other professional groups, institutions and government departments and ministries to formulate an appropriate plan of action to protect environment. United Nations Environmental Programme (UNEP) is going to establish electronic information network in DOE shortly;
 - e. Public awareness is a key to achieve success in any national programme. With the help of electronic and other media, it has now become very easy to reach all the people within a short time. DOE is trying to use all kinds of modern media in order to disseminate information on environmental issues and encourage entrepreneurs to come up with more investment;
 - f. DOE will formulate projects and undertake activities to the end of environment protection of Bangladesh, Agenda-21 and NEMAP and take initiative to implement international protocols and agreements on environment;
 - g. "Environmental Court" may be established to resolve all cases of violation against any clause under the Environment Protection Act, '95 and other rules, regulations and policies meant for preserving and protecting the environment;
 - h. Establishing treatment plants for industries (e.g., cement, fertiliser, paper, textiles, handloom, leather, etc.) and making their use mandatory;
 - i. Introducing self-monitoring system in Export Processing Zones and other industrial areas; and
 - j. Strengthening drinking water quality surveillance.

13.37.3 Physical programme and financial outlay of the public sector for development of environment during the Fifth Plan are shown in Table 13.13.

Table 13.13
Physical Programme and Financial Outlay for Development of Environment
in Public Sector During Fifth Plan

(in million Taka)		
Programme	Physical Activities	Financial Outlay
Strengthening of DOE at regional and sub-regional levels.	18 offices	120.00
Phasing-out of ozone depleting substances	-	20.00
Biodiversity management	11 Centres	110.00
Environmental quality control, monitoring and management.	19 Air Monitoring Stations and 6 Treatment Plants.	120.00
Public awareness on environmental standards	-	10.00
Alternative energy development.	-	10.00
Agenda-21: Implementation follow up.	-	10.00
Total		400.00

13.37.4 Private entrepreneurs are expected to invest in environmental protection and development. In setting up and maintaining places of scenic beauties, in preventing wanton destruction of good and pulsating environment and in keeping Bangladesh beautiful, private sector is expected to come up in a larger way hitherto not accounted for in the recent past. Private investment for environmental development in the Fifth Plan is projected to be at least Tk.100 million, i.e., a fourth of the envisaged public sector investment.

Water Resources

13.38 Introduction

13.38.1 The twin problems of shortage of water during the dry season and its abundance in the rainy season are critical to the development and management of water resources in Bangladesh. During the winter months, optimum use of available water resources will have to be made taking into consideration the multifarious demand for use of water for domestic need, irrigation, navigation, fisheries, livestock, forestry, environment, etc. On the other hand, in the wet months, the main tasks, in addition to provision of supplementary irrigation, are controlling, regulating and managing of floods to protect human lives, properties, crops, etc. It is estimated that 7.56 million ha could be developed for irrigation as against the current irrigated area of 4.00 million ha while 5.76 million ha will require flood control and drainage (FCD) facilities as against 4.2 million ha covered in 1996/97. Bangladesh, being in the lower riparian areas of three major rivers of the world, the Ganges, the Brahmaputra and the Meghna, could not since long undertake any meaningful water resources development programme to harness the water flows of these rivers for the benefit of its people. Now, following the treaty for sharing the Ganges water with India, vista of opportunities have been opened up for regional, sub-regional, basin and sub-basin wise development and management of water resources for the benefit of all peoples of the region. It is in this backdrop that the Ganges Barrage is being taken up for implementation during the Fifth Plan period.

13.39 Major Issues: Physical Environment

13.39.1 Most of Bangladesh is located within the flood plains of the three great rivers mentioned above and their tributaries and distributaries.

13.39.2 The three rivers drain a total catchment area of about 1.72 million sq km, of which only about 7 per cent lies within Bangladesh. This limits the ability of the country without co-operation of the upper riparian to have any control over the inflow of water and sediment that flow over it to discharge into the Bay of Bengal. There are five major adverse effects of this which are described below:

a. Flood and drought

- i. The country's unique geo-physical setting makes it extremely vulnerable to both flood and drought. The annual minimum flow of rivers near the Bay of Bengal is only one-twentieth of their peak monsoon discharge. The high water levels in the major rivers during monsoon cause drainage congestion and over-bank spillage of their tributaries which is often exacerbated by runoff from coincident high local rainfall. Over the 1954-93 period, this resulted in seasonal and fairly predictable inundation over an average of about 26,200 sq. km. or about 27 per cent of the country's net cultivable area of 95,600 sq. km. However, periodic severe flooding is also common and during the aforesaid 39-year period, flooding covered 37 per cent or more of the country in one out

of every 10 years. The record was in 1988 when almost 60 per cent of the country was inundated.

- ii. Certain parts of Bangladesh are also subjected to drought during the monsoon season which adversely affects the cultivation of kharif crops. The upstream withdrawal of water from some rivers by the upper riparian during the dry season has aggravated the situation, giving rise to need for supplementary irrigation and combating salinity and other ecological problems.

b. Siltation: The combined annual average sediment load entering Bangladesh and conveyed to the Bay of Bengal via the main rivers is estimated to be about 0.77 billion mt, varying over a range of 0.45-1.84 billion mt during the period 1956-88. A part of this sediment load is deposited on the floodplains during the flood season, gradually changing its topography and drainage conditions. Bangladesh has an estimated total of 25,000 km of drainage channels and their water conveyance capacity and navigability have been seriously threatened by continuous morphological change of river beds. The problem has not been properly attended to in the past on the ground that dredging is expensive. However, such generalised assertions must be tested against specific cases where very selective dredging and desiltation programme, combined with developing raised platform could provide cost-effective solution of the problem and also assist in poverty alleviation and environmental upgradation.

c. River bank erosion

- i. The floodplains and coastal delta are in a constant state of slow morphological change. The large seasonal variation in river flow results in a varying sediment transportation capacity and causes river-bank erosion, migration of river-banks and meandering river channels. Recent satellite image studies of the Ganges-Brahmaputra-Meghna rivers show that 106,300 ha were lost to erosion, while only 19,300 ha were accreted over the period 1982-92. The net area of 87,000 ha lost to erosion is equivalent to an annual erosion rate of 8,700 ha. Most of it is agricultural land.
- ii. River bank erosion has significant economic and social impacts. The loss of land, crops and property has led to landlessness and impoverishment of thousands of households. A study showed that out of the total population of 1.88 million living in the Brahmaputra floodplains, 450,000 live within the banklines or riverine chars and the remainder within a kilometre of the river. Over the period 1980-92, land capable of supporting 405,000 people was eroded and new char land created from the eroded sediment could only support 55,000 people causing a net displacement of 350,000 people.
- iii. Since river training and river bank protection work involve huge sum of money, major investment in these areas was not encouraged in the past by our development partners. But lately, there has been a growing concern and reassessment of the economic and socio-political benefits of protecting important towns, infrastructure, huts and bazars as well as agricultural land.

d. Cyclonic storm surges: Natural calamities are recurring phenomena in Bangladesh, the most severe ones occurring in the form of cyclonic storms which mainly affect the coastal districts. The country has over 700 kms of coastline on the mainland and several offshore islands in the Bay of Bengal. Vulnerable areas include the important port towns of Chittagong and Khulna and heavily populated islands of Sandwip, Kutubdia and Hatiya. During the last 125 years, over 42 cyclones hit the coastal belt; 14 occurred during the last 25 years. Cyclones often take a heavy toll of human life, livestock, crops, properties, and physical infrastructure. Such cyclones also tax the country's institutional and financial

capabilities, since resources have to be diverted to provide immediate relief to the affected population and to restore damaged or destroyed physical facilities.

- e. Salinity intrusion:** Since the Farakka Barrage in West Bengal went into operation, the net availability of surface water to Bangladesh via the Ganges during the dry season was reduced below critical level. The impact of this reduction is demonstrated by a marked increase in salinity in southwestern Bangladesh. The southern part of this affected region is subject to tidal action from the Bay of Bengal and saline intrusion from the tides is normally pushed back by upland flows of fresh water from the Ganges through its tributaries in which the Gorai plays a vital role. Due to flow reduction since 1975, tidal limits and the salinity front have moved northward. Around Khulna, some 146 km. upstream from the Bay, the salinity (in terms of electric conductivity) has increased from 380 micro-mhos/cm in the pre-diversion period to 29,000 micro-mhos/cm. This is a major problem in over 25,900 sq. km of the Ganges dependent area and is causing both short and long-term problems in crop production, fishery, forestry, power generation, industrial development, health care and domestic water supply. Following the Ganges water sharing treaty with India signed on December 12, 1996, the situation seems to be improving; the desired improvement will not take place till the proposed Ganges barrage is constructed and water flowing down the Gorai and other relevant distributaries is augmented.

13.40 Water Resources Potential

13.40.1 The net cultivable area of the country is estimated at 9.03 million ha of which 7.56 million ha is suitable for irrigation. The primary mode for increasing agricultural production for the last two decades has been an expansion of irrigation coverage during the rabi season. Irrigated land in Bangladesh comprises approximately 3.99 million ha. Of this, large irrigation systems currently service about 0.40 million ha; shallow tubewells, about 2.23 million ha; low-lift pumps, 0.58 million ha; deep tubewells, 0.52 million ha and traditional and other methods, about 0.26 million ha.

13.40.2 Investment in barrages, reservoirs, pumps and canals is likely to provide adequate access to fresh water supply in the future. The Ganges water sharing treaty has removed some degree of uncertainty in the quantum of surface water available to south west Bangladesh during the dry season. However, with increasing use of water by a growing population and increasing industrial and agricultural uses, there may be a need for surface water storage and additional ground water augmentation. In this context, reaching agreement with the upper riparian in respect of sharing of water of other common rivers is of vital importance. Both for intermediate and long term planning accurate assessment of surface and ground water availability throughout the year will be necessary as only then conjunctive use could follow.

13.40.3 Proper drainage planning is also necessary for removing excess water during the wet season. Development in drainage infrastructure, both on public and private accounts, will have to be carefully thought out and the enabling environment created for public participation.

13.40.4 Managing the supply of water has been addressed in piecemeal fashion in the past. Flood management has been a top priority for decades, but an environment-friendly mechanism for doing so is yet to be designed for protecting the interest of navigation and fisheries. However, once the total resource picture is clear, the upcoming water management plan will address the issue properly.

13.41 Institutional Framework

13.41.1 Since time immemorial, water has been viewed in Bangladesh as a free gift of nature. Systematic exploitation of water resources began in the country in the early sixties with the start of the flood control, drainage and irrigation (FCDI) projects as prepared under the National Water Management Plan. It was then believed that crop vulnerability to flooding could be reduced by the construction of embankments and polders to create flood-free areas. Though Land and Water Resources Sector Study (1972) by the International Bank for Reconstruction and Development de-emphasised major FCD projects and recommended substantial public investment in minor irrigation, the preference for FCD along with major civil engineering work did not diminish very significantly. A National Water Plan (NWP) completed in 1991 proposed an ambitious programme costing US \$4.2 billion for 20 years for construction of FCD projects to increase monsoon rice production and to complement minor irrigation development. The plan also recommended studies to establish the engineering and economic feasibility of Ganges and Brahmaputra Barrages and measures to control salinity in the south-west region. The latest studies under the aegis of the Flood Action Plan (FAP) also stressed structural measures along with consideration for such aspects as impact of these on fisheries, project-affected people and environment.

13.41.2 The dominance of structural measures as the primary mode of water resources development led to the empoldering of over 3 million ha or about one-third of the net cultivated area at a cost of over US \$1 billion over the past 30 year period. This fixation has deeply influenced the institutional evolution of the BWDB.

13.41.3 Past water sector planning has been criticised on the ground of its heavy reliance on structural measures that caused major externalities and sacrificed the interest of other groups like the fisherman, boatman, landless labourer and women. In a country with severe water imbalances during different periods of the year, it is inevitable that any solution will have impact on one or the other users of water adversely to some extent. The issue then becomes one of minimising the hardships to all by developing an approach that will protect the minimum interests of the most important constituencies (the poor and underprivileged, for example), ensure water availability for critical needs (drinking water for example) and prevent environmental degradation (by taxing polluters for example). All of these require development of a systematic policy and programme for equating the demand and supply of water through economic measures and socially and environmentally friendly means keeping in mind the legitimacy of claims of all user classes.

13.41.4 The Water Resources Planning Organisation (WARPO) is charged with overall integrated water sector resources allocation and macro level planning while the BWDB is the principal executing agency for carrying out those plans into action after conducting micro level planning. The WARPO is a new organisation and is primarily run by engineers borrowed from the BWDB. There will be vast improvements in its institutional capability when its own multi-disciplinary staff will be recruited which is under way.

13.42 Review of Past Performance

13.42.1 Water sector development strategies and policies have undergone numerous changes overtime and consequently the medium and short term plans had to be modified and guided by these policy objectives. For example, minor irrigation, which covers about 90 per cent of the total irrigated area, was gradually privatised and now it is entirely operated by the private sector. During the Fourth Plan, emphasis was given on the small scale FCDI projects with minor irrigation development to optimise both irrigation coverage and flood control and

drainage improvement to the required direction. Necessary policy measures have been taken to reduce the capacity gap between big and small farmers through formation of water users groups and by providing technical support services and credit to small farmers.

13.42.2 At the end of Fourth Plan period (June '95), surface water irrigation covered an area of 1.14 million ha. On the other hand, cumulative achievement of ground water irrigation at the end of June '95 was 2.17 million ha as against the target of 3.02 million ha.

13.42.3 During the past plans, BWDB constructed about 8,515 km of embankment, 4,774 km irrigation canal and 3,462 km of drainage channel to protect valuable crops, lives and properties. It was estimated that an area of about 4,084 million ha was brought under flood control and drainage facilities at the terminal year of the Plan period.

13.43 Fifth Five Year Plan

13.43.1 Objectives: The objectives of the Plan in the water sector stretching over the period from 1997 to 2002 will be to:

- a. alleviate poverty and generate employment opportunities;
- b. ensure ecological balance;
- c. promote water conservation for irrigation and other uses;
- d. enhance conveyance capacity of water courses through desiltation;
- e. protect towns, commercial centres, agricultural lands, etc., from erosion of inland and border rivers;
- f. promote culture fisheries in the completed projects;
- g. promote optimum use of available flows of the common rivers in domestic, agricultural, fisheries, navigation and industrial sectors;
- h. fulfil the need of irrigation for achieving foodgrain self-sufficiency by ensuring year-round sustainable irrigation through conjunctive use of surface and ground-water thus avoiding over-extraction of sub-surface water;
- i. control floods to protect crops, lives and properties and promote both HYV rice and fish cultivation through controlled flooding;
- j. prevent saline water intrusion;
- k. ensure people's active participation in planning, implementation and maintenance of water sector projects; and,
- l. carry out studies on future water resources development projects.

13.43.3 Strategies: In order to achieve the Plan objectives, the following short and long term strategies will be adopted:

- a. short term strategy will lay stress on maximum utilisation of existing facilities through command area development, effective operation and maintenance and rehabilitation of existing projects, quick completion of carry-over projects and balanced use of surface and ground water and desiltation of rivers and channels. In case of new projects, an integrated basin/sub-basin planning approach will be followed. Avoidance of conflicts between in-stream and off-stream users of water, delineation of coastal areas for shrimp culture on a scientific basis and zoning of areas for shrimp cultivation and paddy cultivation, development of data base and encouraging local participation in project planning, implementation and operation and maintenance, protection of towns, commercial centres and agricultural lands from erosion of inland and border rivers including repair and maintenance of existing river bank protection works will be pursued;

- b. the long term strategy envisages major interventions. Ultimate solution to water resource problems lies in the development and utilisation of the major river waters. Investigations, surveys and studies must, therefore, start for a balanced long term development utilising major river waters through a system of barrages. The recently concluded the Ganges water sharing treaty has unveiled a new vista for a wide range of possibilities in this direction;
- c. comprehensive flood control/management measures will be undertaken to protect lives, properties, and crops keeping in view open water fishery production needs and requirements. Cropping patterns will be changed and improved varieties will be introduced in the protected areas for increased foodgrain and fish production;
- d. needs and programmes to sustain open water fish resources will be included in the irrigation and flood control and drainage projects for long term development; and
- e. As IWTA Master Plan for navigation is under implementation, its effectiveness will gainfully be used in the long term water resources planning, where applicable.

13.43.4 The core strategy: The following proposed measures will carry the water resource management strategy to the year 2010:

- a. **Increasing efficiency of completed projects:** In the previous section, it was noted that, in the past FCDI projects concentrated on irrigation, neglecting other competing needs for water. In addition, these facilities, for a variety of reasons, have not been able to perform to their optimal capacity. Given the need for irrigation expansion, it makes good sense to try to rehabilitate these completed projects through redesign and suitable modifications to remove, as far as practicable, their negative impact on other sectors such as navigation, fisheries and environment. There has to be another parallel effort to organise the beneficiaries for command area development and its long term sustainability.
- b. **River bank protection and environmental upgrading**
 - i. The havoc created by continued erosion by all the rivers in Bangladesh has been highlighted in the previous section. Unfortunately, this problem so far has not been systematically handled. For long, the government has been spending quite a substantial amount on river bank protection. But its impact has been marginal for the reason that the resources are distributed over too many projects covering innumerable sections without completing any section. This type of piecemeal work does not lead to any permanent solution but, more often than not, results in wastage of scarce resources. There is a need for massive investment, and since everybody cannot be satisfied all at once there will be need for prioritisation.
 - ii. Towns, river ports and markets have traditionally been developed by the side of rivers for obvious reasons. These are the growth centres of Bangladesh and they constitute life-line of the economy. Scarcity of resources and larger claim of agricultural needs have so long prevented reasonable allocation for their protection. Out of 240 identified town protection schemes, only 75 have been completed upto June 1996, 96 are at various stages of implementation and the rest are yet to be taken up.
 - iii. Side by side with protection work, there is need for reasonable investment on upgradation of environment. Water supply, improved road network, sewerage disposal, drainage system and other municipal services will be developed fast. With donor support, a modest beginning has been made. This will be intensified and carried out further.

c. Increasing conveyance capacity of rivers

- i. Ever since the birth of Bangladesh, siltation has become a major problem. This has not only adversely affected the navigability in major parts of 25,000 km long riverine routes but has also increased the level of salinity. About one fourth area of Bangladesh has been subjected to the hazard of either desertification or salinity.
- ii. In the past, meaningful desiltation programmes for sustaining desired navigability and water conveyance could not be taken up due to huge cost involvement. The problem has now compounded and it can no longer be ignored. A few surveys and pilot programmes carried under the FAP have revealed the prospect of selective dredging. If a method for partial cost recovery can be found, selective dredging can be a viable programme.

d. Major new investments

- i. As has been mentioned elsewhere, regional surface and ground water development will be reaching near saturation by early next century. This indicates the urgency for development of major rivers by constructing the Ganges and the Brahmaputra barrages. The National Water Plan (NWP-II) recommended feasibility studies of the two major proposed barrage projects in the Fifth Plan. When fully developed, the Ganges barrage, according to the feasibility study carried out in 1984, will be able to irrigate 1.33 million ha. Additionally, round the year sweet water flow through the distributaries of the Ganges will push back salinity intrusion thereby restoring the ecological balance of the Ganges development area. All these will help pursue environment-friendly agricultural and industrial activities which, in turn, will help alleviate poverty.
- ii. The potential to expand irrigation further brings up the question of increasing crop production by increasing production in the kharif (rainy) season. For that, flood protection will need to be provided in order to reduce the risk of flood losses and /or boost production of high yielding crops. Studies carried out under the FAP provides a policy and implementation framework under which HYV rice and fish can be cultivated through controlled flooding.

e. Strengthening and developing relevant institutions

- i. Pursuit of the Plan as outlined above will call for requisite capable institutions. Water sector agencies, particularly BWDB, suffer from many deficiencies. These are well documented in the relevant reports. Through efficient restructuring and over time, steps will be taken to strengthen the institutional capacity of BWDB.
- ii. While doing this, special efforts will be made to develop institutions for local level planning, people's participation at all stages of the project cycle, for ensuring accountability, transparency and long term sustainability of completed projects. Programmes will have to be designed in such manner that these can ensure participation by women and the landless. Finally, allout efforts will be made to minimise the adverse effects of water sector projects on environment. The environmental impact assessment (EIA) guidelines developed under the FAP will be helpful in this regard.

13.44 Programmes For Fifth Plan

13.44.1 Since the scope of further exploitation of surface water from the minor rivers and channels is gradually declining due to shortage of water, more emphasis will be given on the

immediate harnessing and use of main river water to augment the supply in smaller rivers and channels.

13.44.2 Small early implementation projects implemented in the past and currently under implementation by BWDB have created water conservation facilities by way of regulating the post monsoon outflow of the drainage system. Development of such facilities by way of command area development of completed projects will receive priority during the Plan period.

13.44.3 Gravity flow, Low Lift Pump (LLP) and other methods of surface irrigation are, at present irrigating about 1.15 million ha of land. This area is projected to increase to 1.32 million ha (about 15 per cent increase) by the terminal year of the Fifth Plan. Double lifting will be necessary to augment water availability in secondary channels for irrigation purpose.

13.45 Flood Control and Drainage

13.45.1 During the Plan period, small flood control and drainage projects will be continued in addition to phased implementation of specific river bank protection programmes. It is expected that drainage programmes may extend further to cover an area of about 4.9 million ha by the terminal year of the Plan period as against the actual coverage of 3.8 million ha achieved by the end of the Fourth Plan. Comprehensive flood control and management measures will be undertaken to protect lives, properties and crops keeping in view the needs of fisheries, environmental and navigational requirements, etc. For augmenting flows of the Gorai river and other selected rivers and canals, re-excavation of river-beds under Food for Works Programme and also by capital dredging will be carried out during the Plan period.

13.45.2 A prioritised portfolio of strategic vulnerable location of river banks will be identified for phased implementation of river bank protection programme. FAP studies have so far identified a number of hard points along the Brahmaputra and the Meghna rivers. A number of hard points along the Padma banks have also been proposed for protective works. The protective works of other minor rivers proposed to be implemented will be studied carefully before making any investment on these projects.

13.46 A Special Note on Construction of Ganges Barrage

13.46.1 The signing of the historic treaty on the sharing of the Ganges Water at Farakka on December 12, 1996 between Bangladesh and India has added a new dimension to the water management strategy.

13.46.2 Background: The Ganges has been flowing through Bangladesh from time immemorial; the life and livelihood of its people, along with the flora and fauna, have been shaped by this great river. The well-being of more than 40 million people in the south-western region of the country is entirely dependent upon the Ganges. The river provides drinking water, sustains agriculture, forestry and fisheries, helps operate a quarter of the country's industrial activities, prevents salinity intrusion from the Bay of Bengal and plays a determining role in maintaining the ecological balance of the country. The balance between man and nature in the Ganges dependent area (GDA) in Bangladesh rests essentially on the Ganges water as this is the only major source of water in the area and all other rivers receive water directly or indirectly from it.

13.46.3 Past studies: Ever since the preparation of the Master Plan in 1964, the importance of development of the surface water resources has been stressed time and again and the barrage over the river Ganges in Bangladesh has been envisaged for more than three decades

for an overall integrated water resources development in the GDA in Bangladesh as well as for overcoming the adverse effects of large scale diversion of the Ganges water at Farakka. Studies conducted thus far have identified the tentative location of the barrage from the point view of optimal water use and various other engineering and environmental considerations.

13.46.4 Objectives: The proposed Ganges barrage will be constructed at a location near Pangsha about 64.40 km downstream of Hardinge Bridge on the Ganges River. The main purpose of the barrage will be to supply irrigation water to the south-west region of Bangladesh. The project will provide irrigation to an area of 1.35 million ha from the Ganges. The net benefited area of the project will be 1.31 million ha. The time for construction of the Ganges barrage is estimated to be about eight years and the full benefit will be achieved after nearly 18 years.

13.46.5 Salient features: The following are the salient features of the Ganges barrage;

- a. the Ganges barrage, a 1,940 metre long structure is proposed to be constructed incorporating a road and rail bridge and gas, power and other services lines as required to be connected to either bank by the structure;
- b. a right bank main command canal, 74 km long, running south-west from the barrage to feed water into the Gorai, the Kumar, the Nabaganga, the Chitra and the Kobadak Rivers, with a headwork's capacity of 26,500 cusec will be one integral part of the project ;
- c. a second right bank main command canal, 43 km long, running south-east from the barrage to feed water into the Chandana, the Old Kumar and the Sitalakhya rivers, with a headworks capacity of 10,600 cusec will be the second integral part of the project ;
- d. a third right bank canal of 10 km long from the barrage pond near the Hardinge Bridge to serve the area to the west of the Ganges-Kobadak Scheme with headworks capacity of 3,000 cusec will be the third integral part of the project ;
- e. irrigation development by a combination of surface water gravity supplies, low lift pumps and shallow tubewells, which will serve an area of 100,000 ha will be the main components of operational ambits ; and
- f. drainage and flood control by embankments and sluices in low-lying areas covering 1.44 million ha within the command area will be the related objective in addition to irrigation.

13.46.6 Benefits: On its completion, the Ganges Barrage Project will:

- a. restore the basic resource (land) to its original position and safeguard it from further degradation;
- b. increase agricultural production through intensive use of modern techniques; increase in agricultural production following the introduction of irrigation, drainage and flood control will be from 2.20 mt/ha/year to 7.41 mt/ha/year, an increase of 5.21 mt/ha/year. The net economic benefit out of the increased agricultural production only will be about US \$1020 million a year;
- c. provide the required quantum of flows through the Gorai in the dry season to check the salinity intrusion in the south-west region of Bangladesh to maintain ecological balance and protect environment of the region;
- d. restore the natural bio-mass (including the Sunderbans) and safeguarding further destruction;
- e. safeguard the industries in the area;
- f. restore livestock and fisheries resources;

- g. improve soil moisture condition;
- h. increase job opportunities in many sectors including agriculture;
- i. provide crossings for traffic, gas and power across the Ganges and improve the communication system in the region ;
- j. revive economic potential for proper growth of regional economy ;
- k. safeguard public health and sanitation condition ; and
- l. help developing a balanced ecosystem of the region to safeguard environmental degradation.

13.46.7 Costs: The tentative cost of the project which includes barrage, main irrigation and drainage canals, has been estimated at Tk.141,000 million. A provision of Tk.17,175.50 million has been made in the Fifth Plan to undertake detailed feasibility and to prepare engineering works as well as to complete a part of the barrage construction.

13.47 Flood Action Plan (FAP)

13.47.1 Following the devastating floods of 1987 and 1988, Flood Action Plan (FAP) covering a number of regional and sub-regional studies were undertaken to find out the technical, social and environmental issues required to be addressed in formulating long-term flood control, drainage, irrigation and river management programmes. Based on the recommendations of some of the FAP studies, a number of follow-up investment projects have been taken up with donors' assistance. FAP started with 11 main components and 15 supporting studies and pilot projects for implementation during 1990-95. Most of the original programme of studies under FAP have been completed. The regional studies identified and evaluated a number of projects. Some other flood mitigation projects have also been identified in regional context. A few priority projects such as the protection of Dhaka city and a number of secondary towns, erosion protection on the Brahmaputra right bank and the rehabilitation of the coastal embankments are currently under implementation. Besides, there are a number of on-going long term studies and pilot projects.

13.48 Ground Water Irrigation

13.48.1 Shallow tubewell (STW) and hand tubewell (HTW): There have been changes in the rate of growth and utilisation of irrigation equipment following changes in the government policy during the last few years. For example, it is observed that withdrawal of subsidies from irrigation equipment has slowed down the pace of minor irrigation development. Future growth of minor irrigation will, therefore, depend on adjustment of policies and implementation of suitable programmes to encourage the private sector and individual farmers' participation in minor irrigation development. Strengthening of institutional mechanisms and required support services to the private sector will be provided by the government for accelerated development of STW and HTW irrigation technologies.

13.48.2 Deep tubewell (DTW): Because of high capital and operating cost, DTWs are not commercially attractive to the farmers at full cost. As a result, DTWs are projected to cover an area of 0.51 million ha during terminal year of the Plan as against the current level of 0.52 million ha. It is, therefore, felt that in the areas where DTWs are the only technically feasible modes of irrigation, adequate measures will be taken to make DTWs attractive to the farmers. Such measures will include introduction of high value crops, increasing the command area of individual tubewells through improved onfarm water management practices and formation of DTW users' groups, strengthening support services to water users' groups, including access to electricity, credit, market facilities, etc. Irrigation coverage under traditional methods of ground water equipment, i.e., Deep Tubewell (DTW), Shallow Tubewell (STW) and Hand

Tubewell (HTW) is projected to decline from the estimated 2.81 million ha in 1996/97 to 1.31 million ha by the terminal year of the Plan. Continuation of policy changes in terms of withdrawal of site restriction and subsidy, non-availability of water at required depth, etc., resulting in higher cost, particularly of DTW, are likely to lead to a decline in the use of these equipment by the poor farmers. However, reduction in irrigation area through these traditional methods is expected to be compensated by additional irrigation coverage of 2.23 million ha under relatively new technologies of Forced Mode Tubewell (FMTW), Deep Set Tubewell (DSTW) and Very Deep Set Shallow Tubewell (VDSSTW). It is expected that private sector investment in irrigation development during the Fifth Five Year Plan will be about Tk.5,010 million.

13.49 Involvement of Women in Development

13.49.1 Participation of women in the development and construction of irrigation and flood control infrastructure was found to be insignificant in the past. Presently, local women are working along with men as construction workers in the Food for Works Programme, embankment construction, tree plantation and other projects implemented by the Water Development Board (BWDB). Under the Fifth Plan, steps will be taken to involve distressed and unemployed women in such projects/programmes implemented by the BWDB. In addition, more avenues for employment of women are expected to be created in O & M activities of flood control projects and tree plantation and fish culture activities of BWDB projects. It has been estimated that 0.92 million person-days of incremental employment will be generated by the terminal year of the Fifth Plan which will include a sizable share for women.

13.50 Private Sector Participation

13.50.1 The government is fully committed to promoting the participation of the private sector in increasing irrigation coverage and command area development. As per existing policy measures, sales, marketing, distribution of fertilisers, irrigation equipment, farm machinery, etc., have been entirely transferred to the private sector.

13.50.2 It is noted that irrigation need by farmers is closely linked to rice and commodity prices. For example, if the rice price is low, farmers will be discouraged to spend more for irrigation to produce more agricultural commodities and as such, the expected command area is likely to be diminished. It is, therefore, necessary to evolve mechanisms for price stabilisation. Import of irrigation equipment and machinery will be further liberalised and fiscal policy turned in favour of private sector's participation. At the same time, necessary measures will also be taken to encourage efficient domestic manufacture of irrigation equipment and farm machinery as well as maintenance spares.

13.51 Cost Recovery from Irrigation Projects

13.51.1 Presently, BWDB is collecting irrigation tax from 12 irrigation projects out of 22 completed projects as per Water Rate Irrigation Ordinance of 1963. BWDB started collection of water rate since 1976/77. During 1995/96, the target of collection of water rate was estimated at Tk. 25.00 million against which the amount realised was Tk. 8.77 million. During 1996/97, the revenue collection target was estimated at Tk.30.00 million against which the amount realised till April/97 was Tk.8.59 million. The reasons for low collection was due to evading practices, power failure for which timely irrigation was not possible and lack of proper legislation and punitive measures against the defaulters.

13.51.2 Water pricing will be such as to convey the scarcity value of this resource to the users and beneficiaries to foster their motivation in the economic and social context. The water rate/charge will be adequate to cover the recurrent O & M cost and part of the capital cost. The objective of pricing policies will be to improve efficiency in water use. The users will have incentives to use only the amount of water they need and additional quantities will entail higher cost per unit. The present system of collection of water rate from the irrigation projects is not satisfactory due to procedural reasons and as such revenue generation from the irrigation projects is much lower than expectations. The collection of water rate will be initiated from all irrigation projects as soon as irrigation infrastructure/facilities are created and the beneficiaries will be motivated to pay the price for irrigation soon after they start getting benefits from construction of irrigation infrastructure. The water pricing for surface and ground water irrigation will be rationalised and collection mechanism improved through legislation and improvement of procedural practices.

13.52 Physical and Financial Programmes

13.52.1 Physical: Benchmark position of irrigation, flood control and drainage as of 1996/97 and projection for the terminal year of the Fifth Plan are provided in Table 13.14.

Table 13.14
Irrigation Flood Control and Drainage Projections During Fifth Plan

(area in million hectare)

Programme	1996/97 (Benchmark)	2001/2002 (Projection)
1	2	3
I. Irrigation :		
A. Surface Water Irrigation		
i. Gravity Flow	0.40	0.59
ii. LLP	0.58	0.66
iii. Traditional	0.17	0.07
Sub -Total (A) :	1.15	1.32
B. Ground Water Irrigation		
i. DTW	0.52	0.51
ii. STW	2.23	0.73
iii. HTW	0.05	0.07
iv. FMTW	-	0.01
v. DSSTW	-	2.10
vi. VDSSTW	-	0.12
Sub-Total (B) :	2.81	3.54
C. Others (Minor Irrigation)	0.04	0.18
Sub-Total (C) :	0.04	0.18
Total (A+B+C) :	4.00	5.04
II. Flood Control and Drainage	4.20	4.90

Sources :
 i National Minor Irrigation Census (1995-96)
 ii National Minor Irrigation Development Project
 iii Bangladesh Water Development Board.

13.52.2 Financial: The projection for public sector financial outlay for the development of water resources during Fifth Plan is Tk.73,373.13 million. The detail break-up is shown in Table 13.15. In addition, an amount of Tk.5,500 million is likely to be invested in water resources development by the private sector.

Table 13.15
Public Sector Financial Outlay for Development of Water
Resources for Fifth Plan (1997/98-2001/02)

(in million Taka)

Programme	Financial Outlay
1. Surface Water Irrigation	12,961.00
2. Ground Water Irrigation	3,600.00
3. The Ganges Barrage	17,175.51
4. Flood Control and Drainage including River and Town Protection	34,131.00
5. Surveys, Studies and Investigation	4,640.00
6. Others (Satellite Imagery, Mapping, Char Development etc.)	865.62
Total	73,373.13

13.52.3 Private sector's investment in development of water resources is estimated at about 10 per cent of the public sector's. The nature of investment required for development of water resources limits the scope for an enlarged role for the private sector in the continuing situational context.

Rural Development and Institutions

13.53 Introduction

13.53.1 Bangladesh is one of the most densely populated countries of the world and a vast majority of the population live in the rural areas. Poverty is widespread in the country and more so in the rural areas. It is estimated that around 50 per cent of the population lives below poverty line and about half of them is considered to be the hard-core poor. The rural poverty is characterised by landlessness, over-crowding in agriculture, underdevelopment of rural non-farm sector, colossal unemployment, low savings and acute shortage of credit facilities. Women are the disadvantaged group in the country and more so in the rural areas in their traditional setting with little literacy and almost no skill training. Rural infrastructure in the country consists of 2,100 identified growth centres, 14,400 km of feeder 'B' roads, 87,000 km of rural roads and some 8,300 km of water ways during the monsoon. These infrastructure that contribute towards rural development are mostly underdeveloped and poorly maintained.

13.53.2 For socio-economic development of the country as a whole, reduction of rural poverty is a must. Towards that end, RDI programme will aim at increasing income through productive employment generation in the rural areas and rural infrastructure development, including development of marketing network, to boost up economic activities. These call for undertaking intensive, expanded and multi-dimensional programme during the Fifth Five Year Plan.

13.54 Performance During Fourth Five Year Plan (1990-95)

13.54.1 Under the Rural Development and Institutions Sector, three major types of programmes were under implementation during the Plan period. These were production and employment programmes for the poor, development of physical infrastructure and small scale irrigated agriculture, drainage and flood control works.

13.54.2 Under production and employment programme, about 0.78 million members were enrolled in various formal and informal groups. Most of these group members became self-

employed on receipt of certain amount of credits. The credit disbursed to various formal and informal groups amounted to Tk. 3,019.00 million under BRDB.

13.54.3 Under LGED, the targets for construction of feeder roads seem to have been largely exceeded. Over 3,709 km of roads were constructed against the target of 2,399 km. Similar was the case with construction and rehabilitation of bridges and culverts. Around 42,000 metres of bridges and culverts were either constructed or rehabilitated against the target of over 30,000 metres. Tree plantation on the slopes of the feeder roads, rural roads and embankments were inbuilt in the construction programmes. LGED created over 112.0 million person-days of employment against the target of 133.1 million.

13.54.4 Ministry of Land established some 384 self-reliant ideal villages to rehabilitate 17,315 landless and rootless families. Chittagong Hill Tracts Development Board undertook some programmes for development of the hilly areas, particularly in the field of community development. BARD, Comilla and RDA, Bogra implemented some small projects, mostly experimental and pilot ones. The targets and achievements under the various programmes during the Plan period are shown in Table 13.16.

Table 13.16
Targets and Achievements of Major Programmes for Rural Development and Institutions During Fourth Plan (1990-95)

A. Production and Employment Programme (PEP)			
Programme	Units	Targets	Achievements
Formation of primary societies/group	number	23,581	16,882
Enrolment of members	number	529,621	777,660
Skill training	number	166,695	616,800
Shares/savings	million taka	159.6	449.33
Credit	million taka	330.3	3,019.00
Realisation of credit	million taka	-	2,559.15
Small Farmers Development Programme (SFDP)			
Formation of groups	number	1,982	5,625
Enrolment of members	number	12,145	35,597
Share/savings	million taka	7.3	30.4
Disbursement of credit	million taka	60.7	166.4
B. Development of Physical Infrastructure			
Development of growth centres	number	316	277
Development of feeder road Type -B	km	2,399	3,709
Construction of bridges and culverts	metre	15,039	41,987
Rehabilitation of flood/cyclone damaged bridges and culverts	metre	15,057	
Rehabilitation of flood/cyclone damaged pucca roads	km	2,929	2,574
C. Irrigated Agriculture and Irrigation Management Programme (IMP)			
IMP coverage (DTW)	number	1,556	1,499
(LLP)	number	207	156
IMP training	persons	8,555	6,215
D. Other Minor Programmes			
Settlement of families in Adarsha Gram	number	35,140	17,315
E. Employment Generation			
Infrastructural programme	million person-days	133.1	112.0
Self-employment under PEP	million persons	0.53	0.78

13.54.5 The allocation for the RDI sector during the Fourth Five Year Plan was Tk. 16,500.00 million at 1989/90 prices. In the revised ADPs during the plan period, an allocation of Tk. 25,622.20 million was given to this sector against which an amount of Tk. 21,823.5 million was utilised. ADP allocations and expenditures incurred during the period are shown in Table 13.17.

Table 13.17
Revised ADP Allocations and Expenditures for Rural Development and Institutions
During Fourth Plan (at current prices)

(in million Taka)

RDI Agencies	Revised ADP Allocations	Expenditure
1. BRDB	2,845.97	2,460.00
2. BARD	133.45	75.20
3. RDA	21.78	17.60
4. Co-operatives	578.41	123.70
5. Ministry of Land	937.40	509.60
6. LGED	20,028.37	17,682.90
7. NILG	3.64	3.60
8. Ministry of Relief	112.04	108.70
9. Special Affairs Division	646.14	537.20
10. Ministry of Finance (Ag. Bank)	10.00	-
11. Ministry of Agriculture	5.00	5.00
12. Planning Division	300.00	300.00
Total	25,622.20	21,823.50

13.54.6 Performances during 1995/96 and 1996/97: All the three major programme components, i.e., production and employment programme, infrastructural development programme and irrigation related infrastructure were under implementation during 1995/96 and 1996/97. Under the production and employment programmes, employment for 0.39 million persons was created. These were mostly self-employed members of the various formal and informal groups. Under the infrastructure construction programme, some 2,856 km of metalled roads were constructed in addition to 20,800 metres of bridges and culverts. Apart from these, 163 growth centres were developed by constructing sheds, internal roads and lanes in the hats and bazars. An amount of Tk. 17,689.9 million was provided in the Revised ADPs for 1995/96 and 1996/97.

13.55 Fifth Five Year Plan (1997-2002)

13.55.1 Objectives: The following are the objectives of the Fifth Five Year Plan for the RDI Sector:

- a. reduction of poverty in the rural areas;
- b. productive employment generation in the rural areas;
- c. self-employment creation for the rural poor ;
- d. development of rural infrastructure; and
- e. development of small and landless farmers.

13.55.2 Strategies: The elements of the strategy for achievement of the above objectives will include, among others, the following:

- a. provision of skill training mostly for self-employment in non-farm sectors;
- b. formal and informal group formation and group development for co-operative activities;
- c. resource mobilisation through individual/group savings;

- d. creation of enabling environment for availing of credit facilities;
- e. social mobilisation for awareness creation on various aspects of rural life;
- f. development of small and landless farmers;
- g. development of rural infrastructure such as growth centres and roads, bridges and culverts connecting such centres;
- h. provision of small irrigation and flood control related infrastructure;
- i. preventing destitution through rural maintenance programme; and
- j. covering at least one full administrative district under any project with one or more of the programme components of productive employment, rural infrastructure and small scale irrigation and flood control infrastructure to find out the replicability.

13.56 Major Thrust

13.56.1 Facilities for self-employment: It is obvious that it will not be possible to create enough wage employment even for a significant proportion of the vast army of the rural unemployed and under-unemployed labour force. As such facilities for self-employment will be created through skill training and micro-credit, particularly in the non-farm sector under a well-conceived pro-poor programme. An employment bank will be set up in the Fifth Plan period to support self-employment. Since provision of microcredit from the public sector fund will not be sufficient to create enough employment, local resources will be mobilised through savings of the beneficiaries.

13.56.2 Facilities for Bittahen: There is a large number of landless and assetless people who are known as bittahen. They will have priority in the scheme of poverty alleviation and separate institute for the bittahen will be set up. To meet the credit needs of such people, opening separate counters in the existing banks for the bittahen may be necessary. Alternatively, separate banks for the bittahen will be established.

13.56.3 Social mobilisation and empowerment of the poor: On the top of all efforts towards reduction of poverty, social mobilisation for awareness creation on various social, economic, environmental, skill development and institution building matters and supporting local government bodies will remain in-built in the process of participatory bottom-up planning and poverty alleviation. Empowerment of the poor in identifying their needs and directly involving them in planning, designing and implementation of self and community based projects will be a mechanism for nation building activities in this context.

13.56.4 Women in development: Since women are the most disadvantaged group in the society and the victims of extreme poverty, special attention will be given to reduction of poverty among women. In appropriate cases, separate programmes for the women will be taken up.

13.56.5 Environment protection: Environmental concern is an important element in any programme of rural development. RDI programme will have elements of environment protection, environment conservation and re-generation, social mobilisation and input supply. Environment -friendly activities will remain in-built in all programmes of rural development.

13.57 Programmes

13.57.1 Poverty alleviation will be one of the major concerns of the RDI programmes during the Plan period, and conscious and deliberate attempts will be made to substantially reduce poverty, particularly of the hard-core rural poor. The programmes will include the following:

a. Production and employment programme: Under this programme various projects will be undertaken for skill training, awareness creation, human resource development and empowerment of the poor. Credits will be disbursed for undertaking income generation and for self-employment activities. There will be separate projects for rehabilitation of the landless and assetless people, particularly women. Specific projects will be undertaken for the bittaheens and the people of the special areas. Poverty alleviation programmes will be designed and suited to the need and creativity of the people and be financed with local resources as far as possible.

b. Rural infrastructure development programme: Under the rural infrastructure development programme, projects will be taken up for development of growth centres and growth centre connecting roads, bridges and culverts on the one hand and small-scale irrigation and flood control related infrastructure projects on the other. Road maintenance programmes, mostly rural roads, will be implemented through the rural destitute women and eventually they will accumulate savings to undertake income generating activities by themselves.

13.58 Projections for development of RDI in the public sector during the Fifth Plan are shown in Table 13.18.

Table 13.18
Projection for Development of RDI in Public Sector During Fifth Plan

Programme	Unit	Projection
Productive employment generation	million person	1.3
Employment under infrastructural programme	million person-days	175
Growth centre development	number	600
Feeder road category 'B'	kilometre	7,000
Rural road	kilometre	15,000
Bridges and culverts	metre	100,000
Small scale water management related infrastructure:		
- Embankment	kilometre	1,000
- Khal/canal	kilometre	4,000
- Water control structure	number	350
Maintenance of physical infrastructure	kilometre	10,000

13.59 Land Reform and Land Use

13.59.1 Control over asset, particularly access to land is a major determinant of household income in Bangladesh, particularly in the rural areas. Two-thirds of the rural people are landless or functionally so. The high degree of income inequality in the country is closely related to unequal distribution of land ownership. The average size of land holding is declining due to population pressure coupled with inheritance laws and the need for other uses of land such as human settlements and roads. Share cropping is widespread as the smaller pieces of land are not enough for subsistence.

13.59.2 The Land Reform Ordinance of 1984 has provision for the protection of tenants and sharecroppers. The basic issue is lack of enforcement of the ordinance. Farm holdings in Bangladesh are generally very small and big farms are limited in number. In this context, scope for a comprehensive redistribution of land and further reduction of land ownership ceiling is considered to be limited.

13.59.3 Against this backdrop, effective implementation of the ongoing land reform activities including Adarsha Gram, Khas Land distribution, ideal village programmes and providing rights to bargadars will get priority in the Fifth Plan period. Further, improving land records, distribution of appropriate land titles and speedy settlement of disputes on land will create opportunities for small farmers to avail of credit facilities.

13.60 Area Development Approach

13.60.1 Rural Development during the Fifth Five Year Plan will be undertaken following Area Development Approach which is commonly understood as comprehensive development or integrated multi-sectoral development. This approach conforms to the over all national sectoral development strategy. Under the Area Development Approach, programme for the total development of a particular geographical area covering development activities in various fields such as education, human resources, family planning, agriculture, water resources, infrastructure, housing, etc. will be undertaken. Projects will be drawn up by the concerned sectors and will be integrated and co-ordinated at some convenient administrative units. Considering the complexity of integration and efficiency at the operational level, one at administrative district, for example, may be considered as the point of co-ordination and integration of the projects which conform with the rural development strategy, presently being pursued under the RDI Sector.

13.60.2 Under the Area Development Approach, there will be one area development programme covering the projects of different sectors which will be co-ordinated at the district level for which appropriate mechanism will be developed as soon as the new local government structure becomes operational. The area development programme will essentially involve the local government authorities and will be co-ordinated by such authorities at the district level. The programmes of all development agencies including government, parastatals, NGOs and private organisations will be co-ordinated with a view to avoiding both duplication of efforts and unbalanced allocation of resources. The area development programme drawn for the comprehensive and multi-sectoral development of the entire geographical area of a particular district will be decomposed at the upazila level and further down to union parishad.

13.61 Financial Outlay During Fifth Plan

13.61.1 An amount of Tk.87,002.48 million has been projected for the development of RDI in the Public Sector. The programme wise breakup of the outlay is shown in Table 13.19.

Table 13.19
Public Sector Financial Outlay for Development of RDI During Fifth Plan

(in million Taka)	
Programme	Financial Outlay
Production and employment programme (PEP)	20,000.00
Infrastructural development programme (including irrigation related infrastructure)	56,000.00
Other programmes (including special programmes and action research)	11,002.48
Total	87,002.48

13.62 Given the nature of social investment, private investment for rural development and institutions will be very limited. Some investment outside the public sector will be based on savings mobilised and institutional investment by NGOs. A tentative amount of Tk. 2,000 million is likely to be invested for the development of RDI in the private sector during the

Plan period. The return against such investment is expected to be more per unit than what is projected to be in the public sector.

CHAPTER XIV

INDUSTRIES

14.1 Introduction

14.1.1 Manufacturing combines human ingenuity - science, technology and innovations with natural endowments of a nation. The fountain of the wealth of today's developed nations receives the perennial flow from trade in manufactures which lie at the back of their highly remunerative employment, high level of income and the high standard of living. This is why international trade is dominated by manufactures which accounted for around 75 per cent of the world merchandise exports of US\$ 4,880 billion in 1995. Primary products comprised the rest in which the shares of food, fuel, minerals and metals and agricultural raw materials were 9.1 per cent, 7.1 per cent, 6.3 per cent and 2.8 per cent, respectively. It is, therefore, no wonder that the demolition of the tariff wall against trade in manufactures had been at the top of the agenda of all multilateral and plurilateral trade negotiations conducted under the auspices of the General Agreement on Tariffs and Trade (GATT), the predecessor institution of the present World Trade Organisation (WTO), and that the developed countries, who are the greatest beneficiaries of trade in manufactures, have brought down the tariffs on manufactured goods traded amongst themselves to a level as low as 4 per cent only.

14.1.2 Failure of most of the developing economies, excepting the newly industrialised countries, to generate adequate purchasing power in their respective domestic market led them to look for purchasing power outside the national boundaries and pursue the export-led growth strategy. The bulk of exports from these countries, however, still comprises of primary commodities and historically, world prices of primary commodities have been volatile, unstable and least rewarding. Besides, these countries, more often than not, suffer from adverse terms of trade. As a result, trade has been neither a source of resource flow nor an 'engine of growth' for these countries. These stark realities, combined with the overwhelming weight of manufactures in the global export trade, make the success of the export-led development strategy contingent on the development of a viable manufacturing sector.

14.2 Past Industrial Development

14.2.1 Bangladesh is a late starter in the process of industrialisation. Before liberation, some simple process industries like jute, textiles and sugar mills, two pulp and paper mills, a small urea fertiliser plant, a cement factory, a 'mini' steel making plant with imbalanced downstream rolling facilities for making mild steel bars, sheets and plates, a few pharmaceutical units with capacities for formulation, bottling and packaging and several minor dockyards and light engineering workshops comprised the industrial base of the country. After liberation, within the overall objective of attaining a self-reliant economy, the First Five Year Plan (1973-78) of the country adopted an import-substitution strategy for industrialisation with emphasis on domestic production of basic needs and investment goods. However, with the unfortunate change in the government that was brought about in August 1975 a perceptible shift in the self-reliant economic goals and objectives occurred, making the country increasingly dependent on foreign aid and aid-financed imports covering all types

of commodities - food, consumer goods, consumer durables, raw materials, intermediate inputs and of course, investment goods.

14.2.2 During the last twenty five years, the nation's industrialisation efforts were channelled mainly through the public sector. A major portion of public investment was devoted to new capacity creation in chemical fertilisers and in the establishment of several basic engineering industries, while both the public and private sectors invested in textiles and clothing. Some investments were also made in balancing, modernisation and expansion of some of the existing jute and textile mills. Besides, significant promotional investments were made by the government by way of setting up a large number of industrial estates for small and medium sized industrial units as well as two export processing zones (EPZs) to provide infrastructural facilities, utilities and other services for the entrepreneurs - both foreign and local. However, most of the industrial estates remained under-utilised and the strategy for labour-intensive industrialisation as well as spatial dispersal of industries, by and large, ended in a failure. With the exception of export-oriented ready made garments industries (RMGs), which achieved a commendable growth over a relatively short span of time, the country's industrialisation efforts in other areas, particularly in producing consumer goods, RMG-linkage inputs and high value added consumer durables and producer goods, did not bear much fruit. The vast potential that exists for development and diversification of agro-based and agro-support industries remains to be tapped. Indeed, even the existing industrial units gradually lost operational viability due to lack of investments in balancing and modernisation as well as loss of protective domestic markets due to liberalisation of the trade regime at a pace which did not permit necessary adjustments and relocations. Industrial units awaiting privatisation also have landed in the same situation as uncertainty and apprehension about job losses have besieged both the management and the labour equally as a result of which they have lost interest in running these units. On the contrary, in the context of conscious policy decisions to allow progressive erosion of the public sector's role in the country's industrialisation efforts, a standstill position has been reached with respect to any significant investment by the public sector in the establishment of any new production capacity.

14.2.3 Bangladesh is a densely populated country, with a narrow natural resource base, an extremely limited per capita availability of arable land and very low purchasing power of the population. The low purchasing power of the population is responsible for the small size of the domestic market which has shrunk further, particularly in the 1990s, due to opening up of the economy with attendant liberalisation of the trade regime. Given the small size of the domestic market, Bangladesh has to pursue an export-led development strategy with emphasis on industrialisation for sustained economic growth and social development. Such a strategy holds out the potential for eventual solution of problems like acute unemployment, abject poverty, low rate of savings and investment as well as high dependence on foreign aid.

14.2.4 The country has a vast pool of easily trainable manpower resources. It also has the advantage of relatively low wage level. But its technological base is weak and it lacks dynamic entrepreneurship, managerial expertise and efficiency, work forces with requisite skills and above all, adequate investible surplus. To raise the manufactures' share from the present 9.28 per cent level to 12.70 per cent of GDP by the terminal year of the Fifth Plan obviously is a challenging task. This will not only call for the necessary enabling environment, but also require an upbeat efficiency of the private sector with ability to compete in a globalised market economy and liberalised trade regime. It is, nevertheless, achievable as has been demonstrated by a number of East and Southeast Asian countries.

14.2.5 The crucial and logical transformation of the Bangladesh economy that is needed for an accelerated pace of industrialisation, is yet to take place. Over the last quarter of a century, the economy of Bangladesh has gone through a slow and rather erratic structural transformation. It defied the classical relationship between the structural composition of an economy and its stage of development. The share of her agricultural sector, though dropped from about 58 per cent in 1972 to about 33 per cent in 1995, the share of the manufacturing sector limped from 9.0 per cent in 1973 to a mere 11.4 per cent in 1994/95. The services sector, on the other hand, jumped from 26 per cent to about 48 per cent over the same period. To bring about a visible improvement in the quality of life of the people, the pivotal role that the manufacturing sector has to play in the desired transformation of the economy, still remains to be displayed.

14.2.6 The sector's share in GDP for some selected years, including benchmark years of the past Plans, and its growth over the periods under discussion are shown in the Table 14.1.

Table 14.1
Manufacturing Sector's Share in GDP and Past Growth Rates
(at constant prices)

Year	Share in GDP (per cent)	Period	Annual Compound Growth Rate Over Period (per cent)
1972/73	9.00	1973 - 1978	7.35
1979/80	11.22	1978 - 1980	6.21
1984/85	9.86	1973 - 1980	7.02
1989/90	9.91	1980 - 1985	0.93
1994/95	11.36	1985 - 1990	4.22
1995/96	11.37	1990 - 1995	7.00
1996/97	11.08	1995/96	5.33
		1996/97	3.31

Source: BBS

14.2.7 Despite its potential for growth, the manufacturing sector in the past failed to meet expectations. In 1994/95 this sector achieved a growth rate of 8.6 per cent compared to 7.2 per cent in 1989/90. Over the period from 1990/91 to 1995/96, the manufacturing sector grew at an average annual rate of 6.3 per cent and there have been fluctuations also. The first year of the Fourth Plan registered the lowest growth rate (2.39 per cent), while the highest growth rate (9.1 per cent) was achieved during the year 1992/93. The growth rates during 1995/96 and 1996/97 were 5.3 per cent and 3.3 per cent, respectively. Among the industrial sub-sectors, ready-made garments (RMG) and pharmaceuticals recorded the highest growth performances (greater than 10 per cent), while growth rates of jute and cotton textiles declined.

14.2.8 The total investment during the period 1990/91-1994/95 stood at Tk.131,457 million, at current prices, in which the share of the private sector was 85.89 per cent, including foreign direct investment (FDI) of 10.54 per cent. Investment in the years 1995/96 and 1996/97 stood at Tk.34,919 million and Tk.34,513 million, in which the share of the private sector was 95 per cent and 97 per cent, respectively. Major portion of the investment went into fertiliser and pharmaceuticals as well as export production. Ready-made garments and knitwears jointly accounted for over 70 per cent of the total investment in the manufacturing sector. Details of year wise total investment as well as agency wise public sector expenditure in the manufacturing sector for the period under review are given in Tables 14.2 and 14.3.

Table 14.2
Investment in Manufacturing Sector¹
(at current prices)

(in million Taka)

Year	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	Total
Total Investment	23415	22699	24319	25825	35199	34919	34513	200889
Public Sector Investment	8331	3338	1240	2273	2227	1718	1082	20209
Private Sector Investment	15084	19361	23079	23552	32972	33201	33431	180680
Domestic Private Investment	12579	17927	21248	20595	19053	16346	15003	122751
Foreign Direct Investment	1568	428	894	1367	12392	15555	15506	47710
Investment in the EPZs	937	1006	937	1590	1527	1300	2922	10219
Percentage Share								
Public Sector	35.58	14.71	5.10	8.80	6.33	4.92	3.14	10.06
Private Sector	64.42	85.29	94.90	91.20	93.67	95.08	96.86	89.94
Domestic Private Sector	53.72	78.98	87.37	79.75	54.13	46.81	43.47	61.10
Foreign Direct Investment	6.70	1.88	3.68	5.29	35.20	44.55	44.93	23.75
Investment in the EPZs	4.00	4.43	3.85	6.16	4.34	3.72	8.46	5.09

Table 14.3
ADP Expenditures by Major Ministries and Parastatals During Fourth Plan Period
(1990-95), 1995/96 and 1996/97

(in million current Taka)

Sl. No.	Name of Agencies	1990/91	1991/92	1992/93	1993/94	1994/95	Total 1990-95	1995/96	1996/97
01.	Bangladesh Chemical Industries Corporation.	7,694.47 (92.36)	2,575.94 (77.15)	465.939 (0.38)	1,046.41 (46.04)	851.927 (38.22)	12,634.69 (72.89)	666.40 (38.79)	105.811 (9.78)
02.	Bangladesh Steel & Engineering Corporation	16.20 (0.19)	24.70 (0.74)	-	-	-	40.90 (0.18)	2.50 (0.15)	-
03.	Bangladesh Textile Mills Corporation.	-	-	-	35.00 (1.54)	43.58 (1.69)	78.58 (0.45)	76.50 (4.45)	60.00 (5.54)
04.	Bangladesh Jute Mills Corporation (BJMC)	57.77 (0.69)	-	-	-	-	57.77 (0.33)	4.00 (0.23)	-
05.	Bangladesh Sugar & Food Industries Corporation (BSFIC)	189.25 (2.27)	74.90 (2.24)	214.70 (17.32)	301.22 (13.25)	107.13 (4.81)	887.20 (5.08)	68.00 (3.96)	20.10 (1.86)
06.	Bangladesh Forest Industries Development Corporation (BFIDC)	-	-	-	-	-	-	-	-
07.	Bangladesh Small & Cottage Industries Corp.	178.50 (2.14)	312.80 (9.37)	217.30 (0.18)	333.80 (14.69)	349.30 (15.69)	1391.70 (8.03)	287.50 (16.73)	118.40 (10.94)
08.	Bangladesh Handloom Board.	92.50 (1.11)	37.40 (1.12)	20.00 (0.02)	10.35 (0.46)	180.40 (8.10)	340.65 (1.97)	22.15 (1.29)	35.10 (3.24)

continued to next page

¹ Private sector investment figure has been taken from GED, Planning Commission (Table- 1.8, Chapter -1). Investment in EPZs has been Collected from BEPZA. Foreign Direct Investment has been estimated to be 40% of registered FDI with Board of Investment and it is based upon a survey conducted by BOI in 1993/94. Domestic private sector investment has been derived as residuary after deducting investment in EPZ and FDI.

Table 14.3 (continued)
ADP Expenditures by Major Ministries and Parastatals During Fourth Plan Period
(1990-95), 1995/96 and 1996/97

(in million current Taka)

Sl. No.	Name of Agencies	1990/91	1991/92	1992/93	1993/94	1994/95	Total 1990-95	1995/96	1996/97
09.	Bangladesh Sericulture Board.	40.00 (0.48)	80.00 (2.40)	61.90 (0.05)	115.00 (5.06)	146.25 (6.57)	443.15 (2.56)	121.90 (7.09)	15.00 (1.39)
10.	Bangladesh Export Processing Zone Authority(BEPZA)	50.00 (0.60)	220.00 (6.59)	220.00 (17.74)	280.00 (12.32)	249.20 (11.19)	1019.20 (5.12)	134.30 (7.82)	484.03 (44.73)
11.	Bangladesh Industrial Technical Assistance Centre (BITAC)	10.00 (0.12)	0.83 (0.02)	4.67 (0.38)	44.77 (1.97)	-	60.27 (0.35)	9.20 (0.54)	-
12.	Ministry of Industry	-	-	0.015 (0.0012)	29.648 (1.30)	15.167 (0.68)	44.83 (0.26)	15.00 (0.87)	-
13.	Ministry of Textiles	1.44 (0.02)	1.78 (0.05)	3.43 (0.28)	2.70 (0.12)	8.38 (0.38)	17.73 (0.10)	6.00 (0.35)	2.30 (0.21)
14.	Department of Textiles (DOT).	-	-	-	-	64.71 (2.91)	64.71 (0.37)	57.30 (3.33)	10.00 (0.92)
15.	Ministry of Jute (MOJ).	-	-	-	-	-	-	133.7 (7.78)	145.00 (13.40)
16.	Department of Jute (DOJ).	-	-	-	-	-	-	-	26.60 (2.46)
17.	Department of Printing, Stationery, Forms and Publications	-	7.50 (0.22)	28.67 (2.31)	40.00 (1.76)	52.75 (2.37)	128.92 (0.74)	5.0 (0.29)	59.89 (5.53)
18.	Patent & Design	0.365 (.005)	1.187 (0.04)	1.60 (0.13)	0.363 (0.016)	0.450 (0.02)	3.965 (0.02)	-	-
19.	Trade Mark Registry	0.365 (0.005)	0.900 (0.03)	1.60 (0.13)	0.400 (0.02)	0.360 (0.016)	3.625 (0.02)	-	-
20.	Board of Investment	-	-	-	11.20 (0.49)	67.40 (3.03)	78.60 (0.17)	1.10 (0.06)	-
21.	Tariff Commission	-	-	-	21.46 (0.94)	25.492 (1.14)	46.96 (0.27)	16.70 (0.97)	-
22.	NPO	-	-	-	-	-	-	0.10 (0.005)	-
23.	Privatisation Board	-	-	-	0.365 (0.16)	40.173 (1.80)	40.54 (0.23)	59.00 (3.43)	-
24.	Export Promotion Bureau (EPB)	-	-	-	-	23.200 (1.04)	23.20 (0.13)	15.00 (0.87)	-
25.	Bangladesh Institute of Management (BIM)	-	-	-	-	-	-	2.00 (0.12)	-
26.	Ministry of Commerce.	-	-	-	-	0.842 (0.04)	0.84 (0.005)	7.500 (0.44)	-
27.	Dhaka Chamber of Commerce and Industry (DCCI)	-	-	-	-	-	-	5.00 (0.29)	-
28.	Micro-Industries Development Assistance and Services (MIDAS)	-	-	-	-	-	-	2.30 (0.13)	-
	Total	8,330.86 (100)	3,337.94 (100)	1,239.82 (100)	2,272.69 (100)	2,226.71 (100)	17,408.02 (100)	1,718.15 (100)	1,082.23 (100)

Note: Figures in parentheses are corresponding percentages of total annual expenditures

14.2.9 Over the same period, manufactured exports grew at an average rate of 16 per cent per annum, reflecting a significant rise in the sector's share in the country's total export earnings, from 67 per cent in 1989/90 to 84 per cent 1996/97. In terms of value, export on account of manufactures increased over the period by US\$ 2,554 million, from US\$ 1,150 million in 1989/90 to US\$ 3,704 million in 1996/97. Share of the ready-made garments and knitwear was the largest (about 67 per cent) in this increase.

14.2.10 The share of the manufacturing sector in country's total employment is 7.4 per cent only. It provides employment to about 3.63 million people (of ages 15 years and over) in which the share of the private sector is just over 95 per cent. Women folk accounts for some 37 per cent of the sector's employment. About 62 per cent of this employment is in the rural area in which the share of women is about 39 per cent. Informal sector accounts for about 52 per cent of the sector's total employment. The large, medium and small industries account for one-third of this employment while cottage industries employ one-third and the remaining one-third is in the handloom sub-sector.

14.2.11 Production of major consumer goods, however, remained low partly due to closure of a large number of medium and small manufacturing industries and partly due to the depressed demand for domestic manufactured goods in the context of liberalisation of imports. In their place, non-traditional exports such as garments and frozen food have become important sources of industrial growth. In recent years, major source of industrial growth has been textiles, with ready-made garments manufacture expanding from an insignificant level in the early 1980's to the present position of the country's leading export earner. Leather exports have also grown modestly.

14.3 Objectives and Strategies for Industrialisation

14.3.1 The government has clearly enunciated its industrialisation objectives and strategies. These are: industrial development with emphasis on optimum utilisation of indigenous endowments, promotion of employment and catalysing the growth of production and exports.

14.3.2 In the above context, the specific objective of the industries sector during the Fifth Plan will be to bring about a structural change in the economy to make it conducive to accelerated growth of overall GDP and to face boldly the challenge of a free market economy in the twenty first century. This will be brought about, within the overall context of poverty alleviation, through maximisation of its contribution to:

- a. Gross Domestic Product :** The sector will not only contribute to the growth of the total value added directly but also will facilitate the growth of overall economy indirectly through forward and backward linkages.
- b. Balance of Payments :** This will be strengthened through efficient import substitution and export orientation. The key aspect of this will be to attain international competitiveness through efficient allocation and use of resources and enhancement of total factor productivity.
- c. Strengthening of Technological Base :** This will be achieved through building of indigenous capacity in science and technology as well as enhanced access to the frontier of international technology shelf by way of adoption and adaptation. Such access to modern technology will be both an end as well as a means to industrial development during the Fifth Plan.
- d. Generation of Productive Employment and Poverty Alleviation :** Skill development will be a hallmark of the Fifth Plan in order to exploit the country's comparative advantage in the international market. At the same time, development of

self employment with particular focus on the poor and the disadvantaged especially women, will be a major thrust of the industrial development during the Fifth Plan. As such entrepreneurship development with easy access to complementary resources and inputs will receive high priority.

14.3.3 For modernisation and expansion of the sector, necessary steps will be taken to gear up production and distribution system for supplying necessary inputs to the sector. Practical steps will be taken for skill development of people engaged in various vocations. Principles of free market economy will be pursued and all assistance and encouragement will be given to the private entrepreneurs. All laws, regulations and procedures related to industries, trade and investment will be reformed and simplified. For balanced industrial growth and spatial dispersal, appropriate policies will be designed and implemented for establishing industries at District and Thana levels. For the unemployed youth, employment opportunities will be created through the establishment of labour-intensive medium, small and cottage industries. Efficiency and productivity of the parastatals will be improved by bringing about radical change in their operation and management so as to enable them to be competitive and commercially viable. While pursuing the free-trade policy, adequate measures will be taken to remedy the imbalance between the import and export trade as well as to prevent unfair trade practices. Necessary reforms of the economy will be implemented at a faster pace. Specific strategies to achieve the overall objectives of the Fifth Plan will be to:

- a. promote the private sector as the main agent for industrial development, while at the same time undertaking public investment in some strategic industries as well as in those areas where the private sector is not forthcoming; public-private joint ventures will particularly be encouraged in all areas as may be expedient for industrial growth;
- b. strengthen the enabling policies and remove all distortions to the extent possible in order to achieve efficient operation of the market and at the same time uphold the interest of the consumers;
- c. undertake massive efforts to develop efficiency culture in all walks of life particularly in industrial premises; particular attention will be given to improve the efficiency of the public sector;
- d. pursue and accelerate the process of privatisation of state-owned enterprises in an efficient manner;
- e. encourage domestic and foreign investment for overall industrial development;
- f. develop export-oriented, export-linkage and efficient import-substitution industries;
- g. promote diversification of markets as well as products; such efforts will include, but not limited to, marketing assistance to the exporters and implementation of appropriate package of incentives including flexible exchange rate;
- h. exploit the opportunities opened up by the General Agreement on Trade in Services of WTO, and to develop, with an eye to the export market, those service sectors in which Bangladesh enjoys comparative advantage;
- i. develop data base at the frontiers of international technology shelf and disseminate the same to the users in both private and public sectors; in particular, modern technologies will be required in areas such as electronics, biotechnology, cybernetics (both hard and software); R&D facilities will be developed in these and other modern technology areas. To facilitate this, research in basic science will be encouraged;
- j. develop skill, extend vocational training;
- k. develop entrepreneurship in general, particularly in rural areas through extensive training, both formal and informal and easy availability of complementary resources and inputs;

- l. undertake appropriate measures to build healthy and productive relations between employers and employees;
- m. encourage development of labour intensive small and cottage industries through acquisition and development of appropriate technology;
- n. encourage development and diversification of agro-based and agro-supportive industries;
- o. encourage development of industries based on indigenous raw materials and indigenous technology;
- p. formulate policies and strategies for balanced industrial growth in different regions of the country;
- q. put special emphasis on the growth of productivity in industries and to ensure optimum utilisation of the existing capacities;
- r. explore modalities and establish institutional arrangements for revitalising and rehabilitating sick industries through shared responsibilities and obligations of all concerned parties;
- s. strengthen quality control practices so as to ensure that the country's manufactures conform to international quality standards; and
- t. take appropriate measures for preventing environmental pollution by the industries and maintain ecological balance.

14.4 Thrust Sub-sectors

14.4.1 In keeping with the overall objectives and strategies of the industrial sector during Fifth Plan, traditional sub-sectors like textiles and clothing, jute, tea, leather and leather products, along with agro-based small and medium industries, will be given priority and the jute sector will be consolidated through privatisation, restructuring and rationalisation. In this context, given the demand condition at home and abroad, the following sub-sectors have been identified as the thrust sub-sectors for promoting actively during the Plan period:

14.4.2 Textiles and Clothing : The textiles sector, whose contributions to industrial GDP and employment are the highest and which supplies one of the basic needs of the economy will continue to be focused during the Fifth Plan. In pursuance of the implementation of the GATT-1994 and with the phasing out of the Multi-Fibre Arrangement (MFA) by the year 2005, the facilities that are being enjoyed by Bangladesh as a least developed country for export of its textile products will be phased out progressively. In the globalised trade scenario, the sub-sector will have to pursue the following objectives:

- a. To attain self-sufficiency in fabrics by ensuring availability of 17.0 metres of fabrics per capita per annum by the year 2005, to meet the requirement of RMG industry through establishing backward linkages and to ensure direct export of textile goods by expanding production of quality fabrics at competitive prices;
- b. To create enabling environment and to provide the means by which the textile industry can serve as the prime mover of industrialisation for generating employment, increasing export earnings and encouraging contribution to national income by enhancing value addition;
- c. To establish linkages among the various textile sub-sectors, both upstream and downstream, by ensuring their healthy and harmonious development, to undertake and implement various integrated and related plans and programmes for the development of spinning, weaving, knitting, hosiery, dyeing, finishing, and the export-oriented RMG industry, etc. on a priority basis and in keeping with the goals and objectives of the Fifth Plan; and

- d. To create a congenial industrial environment for attracting local and foreign investment in the expansion of local textile industry by taking all the necessary measures and to provide various incentives.

14.4.3 To remain competitive, productivity of the sector has to increase and so also the quality of products. Establishment of backward and forward RMG-linkage industries is a must. Besides, Bangladesh will switch over gradually to high value products. Adequate marketing skills will be developed so as to eliminate dependence on the middle-men. Facilities such as textile design training schools will be built. Development of fashion industry will be encouraged. Marketing assistance will be provided by the government to garments industry. Bangladesh will have to shift its emphasis from political diplomacy to economic diplomacy and all Bangladesh missions abroad will be geared up for rendering to the entrepreneurs all necessary services in connection with marketing of products and access to needed technologies.

14.4.4 Leather and Leather Products Industry : In view of its tremendous export potential, development of leather and leather products industry will be given priority. Joint ventures will be encouraged in this area. Varieties of high value added leather products can be made using locally manufactured crust and finished leather and, as long as domestic supplies remain inadequate, using finished leather imported on back-to-back basis in the same manner as fabrics for RMG industries. Appropriate measures will be taken to encourage investments in leather and leather products as well as linkage industries to support the sub-sector through supply of various accessories. To be successful, leather and leather product industry will be closely linked to the market as fashions change frequently; the industries will take measures to improve the quality of the product through upgradation of technology and skills. In this context, strengthening of the Institute of Leather Technology will be called for.

14.4.5 Computer Software Development and Data Entry Industry : Computer Software and Data Entry Industry has tremendous prospect in the international market and has the prospect of substantial employment generation. In 1992 the total world market for software and services was US\$190 billion, growing at an annual rate of over 15 per cent . The share of data entry/data processing segment in the global market was nearly 30 per cent in 1990 (about US\$ 43 billion). Bangladesh, which has one of the lowest cost of educated labour in the world has comparative advantage in the area of mid-level skill. In order to develop this industry following steps will be taken during the Fifth Plan:

- a. **Development of skilled manpower:** Some universities like BUET, Dhaka University, Shahjalal University of Science and Technology, etc. offer under-graduate and graduate programmes in Computer Science. These graduates may find gainful employment in the software industry. For increasing their numbers, intake capacity of all these institutions will be enlarged. However, for data entry/data processing industry lesser skill is necessary. In the private sector, several training institutes are providing training for data entry/data processing. There is, however, no quality control over the content and implementation procedure of such training programmes. Measures will be undertaken to extend and improve these training facilities and courses;
- b. **Marketing assistance:** In order to develop export in this area the private sector needs to be assisted with information on market. Export Promotion Bureau needs to be entrusted with the responsibility of building a data base on such market information on a priority basis. It should be assisted by the commercial section of the Bangladesh missions abroad. Overseas relation is vital in such industries. Hence, the commercial wings in these missions will have to play an active role in procuring orders for these

industries through directly approaching potential customers, organising trade shows, mobilising Bangladeshi communities abroad, etc. Formation of joint ventures with European and American companies established in the field will be encouraged;

- c. **Credit:** In order to encourage the development of this industry bank loans will be given on a priority basis;
- d. **Fiscal Measures:** Fiscal incentives will be given to encourage the development of this industry;
- e. **Monitoring:** Being an export oriented service industry, the personnel involved in its monitoring will be given extensive training on its nature and working; and
- f. **Telecommunication Facilities:** Development of telecommunication facilities is a prerequisite for development of this industry; increasing participation of private entrepreneurs will be encouraged in this area through removal of hurdles that stand on their way; policies in this area will be rationalised in order to reduce both cost and time of such services to this industry. Customs services will have to be improved and modernised to facilitate speedy development of the sector. Among the charges which need to be substantially reduced is the cost of dedicating the satellite time.

14.4.6 Electronics Industry : Electronics industry has tremendous prospect for efficient import substitution as well as exports. Through subcontracting substantial employment can be generated in this sector. An embryo of this industry already exists. Internationally some of the electronics industries, particularly those with low level of technology content, have become sunset industries in countries like Japan, Hong Kong and Singapore. During the Fifth Plan, efforts will be made to attract foreign direct investment in these areas. Trade in semiconductor is very large and it is relocating to developing countries. Feasibility of setting up such industries will be explored during the Fifth Plan.

14.4.7 Selected Agro-based Industry : Selected agro-based industries using agricultural inputs such as fish, vegetables, fruits, flowers, etc. will be developed in view of growing demand for such products in international markets. But as many of these are perishable goods, air cargo facilities at a competitive cost will have to be developed during the Fifth Plan on a priority basis. Private sector will be encouraged to expand services in this area. Besides, appropriate policies and strategies will be pursued for the establishment of more direct flights/routes to connect markets of major interest to Bangladesh which will be of great help in boosting its exports.

14.4.8 Fisheries Industry : There is a large domestic demand for fish; foreign markets are sizable and ever growing because of its proven superiority over meat proteins. Bangladesh currently exports shrimp worth US\$ 700 million each year. The fishing industry contributes about 3 per cent of the country's GDP which is also a significant foreign exchange earner. Given the large number of water bodies and excellent climatic conditions, the country has a great potential for development in fisheries industry including fish processing and canning and expansion of employment generation in this sub-sector. There is also a great potential for development of intensive and semi-intensive shrimp cultivation as well as for development of hatcheries in the country's 140 to 150 thousand hectares of coastal area.

14.4.9 Light Engineering Industries : Light engineering industries in Bangladesh produce a multitude of labour intensive goods including toys, consumer items, small tools, spare parts, and paper products for a large domestic market. Further development of these industries offers various investment opportunities.

14.4.10 Chemicals and Gas-based Industries : Bangladesh has a sizable demand for chemical products to meet local needs in industries such as food and agro-processing, pharmaceuticals, tanneries, cosmetics, paints and varnishes, printing, packaging and textile processing. At present, most chemicals are imported. There is also vast potential for gas-based down stream linkage industries and petro-chemical industries.

14.4.11 Garments Linkage Industries : To meet the challenge of time all out efforts will be made to develop garments-linkage industries and adequate promotional support will be provided in the Fifth Plan period.

14.4.12 Grameen Check and Dhaka Check : Handloom industry at present shares 61 per cent of the total cloth production of the country, meeting 36 per cent of the local demand. About 52 million metres of different types of cloth in the form of saree, lungi, bed sheet, curtain, shirting, grey cloth, etc. in intricate designs and texture are woven in handlooms. RMG-industries export a large quantity of handloom fabrics, in the form of different sorts of dresses and costumes. Different types, design and colourful match of check fabrics are used in making these dresses and costumes. Currently, Bangladesh imports about 120 million metres of check fabrics from neighbouring countries in order to meet the demand for check fabrics for the garment industries. It is expected that demand for check fabrics will exceed 300 million metres by the end of the Fifth Plan period. The same quality check fabrics can be produced in Bangladesh. Indeed, it is already being produced in the country by Grameen Uddog - a subsidiary organisation of Grameen Bank. Grameen Bank has succeeded in penetrating into the international market by exporting this item and also in generating sizable employment for the handloom weavers. At present, Bangladesh Handloom Board has given special attention for boosting up production of check fabrics. For easy identification, Bangladesh Hand Loom Board also developed Dhaka Check similar to Grameen Check. To fulfil the future demand for check fabrics about 125 thousand handlooms will be engaged exclusively for production of check fabrics generating employment opportunity for some 365 thousand people.

14.4.13 Hotel and Tourism Industries : With growing international interest in travelling through Asia, tourism has taken roots in Bangladesh. Attractive places like Sylhet's tea gardens, water-falls at Baralekha, sea-beaches of the Cox's Bazar and Kuakata provide attractive scenery and seclusion for the tourists. A glimpse of the Royal Bengal Tiger might be exciting on a trip to the Sundarbans, the largest mangrove forest in the world with unique bio-diversity. Historical relics and monuments, ancient mosques, Buddhist monasteries, Hindu temples, and other landmarks are witnesses to the country's glorious past. Most of all, in its tribal areas, Bangladesh harbours a history and culture which is still untouched by much of the changes occurring elsewhere. To cater to the increasing need of services in this sector, additional hotels and tourists resort facilities in the Cox's Bazar, Dhaka, Chittagong and elsewhere will be developed and necessary support services will be provided in terms of physical infrastructure and utility services.

14.5 Policy Issues

14.5.1 Achieving an average annual economic growth rate of about 7 per cent during the Fifth Plan period depends heavily on considerably faster growth in manufacturing, energy and services sectors. Amongst these, the share of the manufacturing sector is projected to rise from 9.28 per cent of GDP in 1996/97 to 12.70 per cent in the year 2002. Such a rise is expected to occur mainly through private sector investments. With 96 per cent of the total manufacturing sector outlay earmarked for investment by the private sector, the Fifth Plan

relies heavily on the private entrepreneurs-both local and foreign for investment in industries. Generally, the public sector will be more visible through policy and institutional support rather than investment in the industries sector through the ADPs. The public sector inputs will be provided mainly through right policies, institutional and infrastructural support, legal reforms and good governance. The public sector investment will be limited only to the BMREs of strategic and essential industries such as jute, steel, chemical, fertiliser, paper, newsprint, etc. The government does not intend to invest in new industrial capacity creation except in such areas where the private sector will not be forthcoming. Divestiture of existing industrial units will be accelerated. Private enterprises and joint ventures in Export Processing Zones will be encouraged. Special economic zones will also be set up.

14.5.2 Bangladesh enjoys Most Favoured Nation (MFN) status with the leading economies of the world. Besides, the country is a signatory to MIGA and International Centre for Settlement of Investment Disputes (ICSID). The Export Promotion Bureau (EPB) is facilitating country's exports in every possible manner. Fiscal and monetary policies have been tuned to faster growth in the manufacturing, export and services sectors. Bangladesh also enjoys GSP facilities. However, as the MFN tariffs will progressively be lowered in pursuance of the relevant WTO Agreements leading to increasing erosion in the margin of preference, the benefits out of the GSP schemes will soon become insignificant and the comparative edge of Bangladesh over others will disappear.

i. Industrial Policy

14.5.3 The policy environment surrounding the private sector started improving with the liberalisation of the industrial policy in July, 1974 and subsequent introduction of a series of promotional measures. These included virtual elimination of the investment ceiling, extended tax holidays, concessional rate of import duty on machinery, curtailing the reserved list of industries for public sector investments, introduction of a free list of industries for which no prior approval is required, enactment of a law for promotion and protection of foreign private investment, activation of the National Stock Exchange, and revival of the Investment Corporation of Bangladesh for underwriting public issues of shares and for providing bridge finance to private industrial units, etc. Perhaps, the most salutary effect had been the government decision for progressive disinvestment of the industrial units which, following Independence, had to be taken over by the government for management. During the period 1973-80, a total of 199 industrial units were disinvested by the government at a total sales price of Tk.115.8 million.

14.5.4 The industrial policy of 1982 was revised in 1986 providing further relaxation and changes in which all industries, except seven strategic industries, were opened up for private investment. No approval for investment was then required if the investors imported machinery and equipment using their own resources and/or through Secondary Exchange Market (SEM) provided imported raw-materials constituted less than 50 percent of total requirement. The public sector enterprises were intended to be converted into public limited companies in order to make up to 49 per cent of their shares available for public subscriptions and to facilitate their operation in a competitive market. They were given operational autonomy in pricing, procurement, etc. Under the Revised Industrial Policy (RIP) a large number of fiscal and other incentives were also introduced/expanded in order to promote rapid industrial development of the country. A number of import bans and quota restrictions were relaxed to promote industrial efficiency. During the Third Five Year Plan there was considerable investment in power loom and ready-made garments industry. The export of ready-made garments increased substantially.

14.5.5 The industrial policy of 1991 which was formulated in the light of promoting a competitive market economy and which was further revised in 1992 laid down basic strategies required for industrial development of the country. All industries have now been opened up for private investment, both local and foreign, except a selected few related to national security like arms and ammunition, nuclear energy, minting and security printing, mechanised extraction in the reserved forests and the railways. Under the policy, the government has been pursuing privatisation of selected public sector enterprises. A number of public sector units have already been privatised or downsized/closed down and others slated for privatisation. Main policy objectives under the Industrial Policy are to:

- a. develop industrial sector in order to increase its contribution to gross domestic product, income, resource mobilisation and employment;
- b. expand industries by putting more emphasis on development of the private sector and in this respect to make the role of the government more promotional rather than regulatory;
- c. encourage domestic and foreign investment in overall industrial development;
- d. develop export-oriented, export-linkage and efficient import-substitution industries;
- e. especially encourage the development of small and cottage industries;
- f. expedite development of the labour intensive industries through acquisition and improvement of appropriate technology;
- g. attain self-sufficiency in essential consumer goods through efficient and cost-effective production;
- h. encourage development of agro-based and agro-support industries;
- i. encourage development of industries based on indigenous raw-materials and indigenous technology;
- j. encourage balanced industrial growth in different regions of the country;
- k. encourage investment in the intermediate and basic industries;
- l. limit the role of the government generally to establishing strategic and heavy industries and to improve efficiency of the public sector;
- m. put special emphasis on the increase of productivity in industries and to ensure optimum utilisation of the existing industrial capacities;
- n. create possible opportunities for revitalising and rehabilitating sick industries;
- o. make effective arrangements for improving standards and controlling quality of products; and
- p. take appropriate measures for preventing environmental pollution and maintaining ecological balance.

ii. Fiscal and Monetary Policies for Industrialisation

14.5.6 Some important changes were made in the monetary management including interest rates to revive economic activities by increasing the flow of credit to the productive sectors of the economy including trade and industry. New interest rate bands were refixed for loans and advances by reducing floor and ceiling by different degrees effective from December 1, 1991. In order to make interest rate more market oriented and competitive, interest rate bands for all lending categories except agriculture, jute and jute goods exports, other export and small and cottage industries, were withdrawn and in these cases banks were given freedom to determine their own interest rates effective from April, 1992. In April, 1994 interest rate bands for priority sectors such as agriculture, export and small and cottage industries were fixed within 10-14 per cent, 8-10 per cent and 9-12 per cent respectively. The policy of liberalisation of interest rate, which was introduced for moving towards market oriented

competitive economy by reducing administrative control coupled with other necessary measures, will be further geared up to build up a healthy banking system.

14.5.7 Within the above overall framework, effective policy measures will be pursued to provide the entrepreneurs with the following incentives:

- a. Tax holiday, from five to fifteen years, depending on the type of industries as well as their locations such as the developed, less developed, least developed and special economic zones; the period of such tax holidays will be calculated from the month of commencement of commercial production; the eligibility of tax holiday will be determined by the National Board of Revenue and the time of commencement of commercial production will be certified by the respective sponsoring agencies;
- b. The National Board of Revenue in consultation with the Ministry of Industries will publish in the official gazette area-wise classification for the application of concessional duties and tax holidays and this will be revised from time to time to keep pace with industrial expansion;
- c. There will be no discrimination in case of duties and taxes for the same type of industries set up in the public and private sectors;
- d. Local industrial products will be protected through tariff rationalisation keeping in view the interests of the entrepreneurs and the consumers with a time-bound phasing for eventual elimination of protection;
- e. To create internal market for jute products and to discourage industries producing jute substituting and environment polluting synthetic fibres, especially polypropylene bag, necessary tariffs will be imposed on related imports; in addition, effective steps will be taken for compulsory use of jute bags for packing of foodgrains, sugar, cement, fertiliser, etc.;
- f. Duties and taxes on imports which compete with similar domestic goods will be rationalised so that the incidence of duties and taxes on imported raw materials and intermediates used to produce such goods remain at a level below that on the finished imports;
- g. Energy price equalisation measures, as deemed appropriate, will be put in place for those least developed areas where the price of fuel oil in BTU terms will be higher than the ruling natural gas prices, as long as gas can not be made available in those areas;
- h. In cases where credits/loans obtained from foreign institutions or government for private industrial investments are relented to commercial banks/DFIs through the government, the following conditions will be applicable:
 - i. The government will relend the above mentioned credits/loans through commercial banks/DFIs; the concerned banks/DFIs will disburse the credits/loans to the entrepreneurs with applicable service charge at relending rates as determined by the government; and
 - ii. The entrepreneurs shall undertake full responsibility for repayment of the loans/credits and the concerned banks/DFIs will provide guarantee to the government for repayment of the loans/credits. The concerned banks/DFIs will, however, be entitled to claim collateral from the entrepreneurs;
- i. Special incentives will be provided to encourage non-resident Bangladeshis for investment in industries. In case of their investment in Bangladesh they will enjoy facilities similar to those given to the foreign investors. They will be able to buy any newly issued shares/debentures of Bangladeshi companies. Moreover, they will be able to maintain foreign currency deposit in the NFCD account;

- j. Provision will be made for accelerated depreciation allowance, in lieu of tax holiday, if entrepreneurs so opt for; and
- k. Special financial incentives for small and cottage industries, particularly those located in the backward areas, will be provided.

iii. Sick Industries

14.5.8 A large number of industries, over years, have turned into sick ones. The main reasons for their sickness may be enumerated in terms of :

- a. depreciation of Taka in relation to dollar or yen or pound in which loan capital was obtained for setting up the relevant industries; this resulted in sizable increase in taka-burden of the repayable loan capital;
- b. technological obsolescence of the process or the product;
- c. withdrawal or lowering of protective tariff wall;
- d. management inefficiency;
- e. inadequate working capital support by the banking system; and
- f. pilferages by the sponsors, in collusion with the personnel of the lending bank or financial institution.

14.5.9 In the Fifth Plan period concrete steps will be afoot to remove the relevant causes of sickness. Ways and means will be found out to draw up realistic schemes for getting out of sickness through joint effort of owners, management, labour and the funding agencies, i.e. all the stakeholders.

iv. Some Specific Promotional Measures

14.5.10 In recent years, considerable reforms and positive changes have been brought about to promote the manufacturing, trade and services sectors. Tariff rates have been considerably lowered and rationalised generally in line with the trade liberalisation approach pursued by the government. The Board of Investment (BOI) is playing a positive role in facilitating private investment with focus on foreign direct investment (FDI). Some of the fiscal and other specific incentives that the government is offering to attract private investments, in general, and foreign direct investments, in particular, include but not limited to the following:

- a. Cent per cent ownership of enterprises by expatriates;
- b. Generous tax holiday for 5 to 7 years, depending on the industrial subsectors, and 10 years for all types of units established in the export processing zones; tax holiday for power generation plant will be 15 years;
- c. No import duty on capital machinery for 100 per cent export-oriented industries; for other industries, import duty on machinery and spares will be levied at the rate of 7.5 per cent ad valorem only;
- d. Facilities for easy repatriation of profits, invested capital, royalties, technical fees etc. for foreign investors;
- e. Exemption of taxes on wages/salaries of expatriates working in industries as well as on royalties and technical fees;
- f. Bilateral arrangements with different countries concerned for avoiding double taxation;
- g. Granting of citizenship to foreign investors who will invest in Bangladesh at least US\$ 500,000 or to those expatriates who will deposit at least US\$ 1 million in a non-repatriable account with a recognised financial institution, and granting of permanent residency to those foreign nationals who will invest at least US\$ 100,000 in Bangladesh;

- h. Issuance of multiple-entry visas as well as work permits to foreign nationals without any discrimination;
- i. Enactment of the Private EPZ Act under which the private sector will be allowed to set up EPZs; and
- j. Establishment of a Permanent Law Commission to make the administrative-legal system more responsive to the needs of the civil society, in general, and those of the entrepreneurs, in particular.

v. Trade Policy

14.5.11 Tariff Reductions : In the last decade, tariff rates have been lowered significantly. The average tariff has come down to about 22 per cent of the annual import value. While lowering the averages, attention was given to keep the rate of customs on raw materials and capital goods lowest, on intermediate goods in-between and on finished goods consumed by the affluent highest. The aim has been to make industrial production competitive and bereft anti-export bias.

14.5.12 Elimination of Non-tariff Barriers (NTBs): Like tariff rationalisation, substantive progress has been made in eliminating or reducing quantitative restrictions (QRs) to points where only a small number of items remain subjected to NTBs at present primarily on grounds of security, health and religion. Besides, the current Import Policy Order (IPO) covering the period 1995-97, brings about a greater transparency by restoring two separate lists - one for the banned items and the other for the regulated items. Non-tariff barriers to imports have been significantly eased also through the abolition of the need for maintaining import passbooks for industrial importers, except for regulated imports.

14.5.13 Tariff reductions along with overall improvement in other policy areas carried out so far have played a major role in liberalising and boosting imports. However, the surge in imports resulting from liberalisation of the trade regime has affected adversely some domestic industries.

vi. Supportive Institutions and Special Measures : In the Fifth Plan period institutional development will be pressed in for giving support to the private enterprise, specially for setting up and operating industries. The main emphasis will be on (i) improvement of development management (ii) creation and sustenance of private sector development and (iii) improvement of key public social and infrastructure services. These objectives will be achieved through reorientation and strengthening of the following major institutions and organisations:

14.5.14 a. EPZs and Special Economic Zones: At present, 73 industrial units in Chittagong EPZ and 23 industrial units in Dhaka EPZ are operational. Besides, 34 industrial units in Chittagong EPZ and 46 industrial units in Dhaka EPZ are under implementation. Total investment in the operational units has figured at US\$ 236.56 million with a total employment of over 46,000 persons. In order to accelerate economic development and employment generation during the Fifth Plan period, Bangladesh Export Processing Zone Authority envisages establishing as many as three more EPZs in various parts of the country.

14.5.15 The determinants and directions of international investment have been changing rapidly in the recent times. Because of new candidates like the East European countries and the CIS (Commonwealth of Independent States that emerged out of the erstwhile USSR), the share of both official development assistance and foreign direct investment to developing countries has been on the wane. In view of changed circumstances, EPZs, encompassing necessary infrastructural facilities, utilities and other support services, can be used as conduits to attract foreign direct investments. At a time when industries are being re-located to low

cost production areas, Bangladesh with its hard working, intelligent, and cheap labour force, should not miss the opportunity of making the best use of its EPZs to attract foreign direct investments. In order to attract foreign investment, besides development of infrastructure and support services, such as warehouses, communication network, gas and water supply, electricity, telephone and modern electronic links, etc. the government will also continue to provide the following incentives:

- a. income tax exemption for ten years and proportional income tax rebate between 30 and 100 per cent on export earning after this period;
- b. duty free import of raw-materials, machinery, construction materials and other materials used in manufacturing process;
- c. income tax exemption on salaries for foreign executives and technicians for three years;
- d. tax exemption on interest on foreign loans;
- e. tax exemption on royalties, technical know-how and technical assistance fees;
- f. tax exemption on the profits on account of transfer of shares by foreign companies;
- g. permitting export linkage inputs to be imported through back-to-back L/Cs by recognised export-oriented/export-linkage industries which will be provided with necessary bonded warehouse facilities, even if they are located outside the EPZ areas; and
- h. offshore banking facilities.

14.5.16 b. Board of Investment (BOI) : In order to boost up and promote private investment during the Fifth Plan, the Board of Investment will continue to perform its following mandated functions:

- a. promotion of investment;
- b. providing facilities for capital investment and rapid industrialisation;
- c. registration of industrial projects, foreign loan agreements, royalty, technical know-how and technical assistance agreement wherever required;
- d. providing assistance to provide infrastructural facilities for industries;
- e. issuing work permits to expatriate personnel working in the private sector industrial enterprises;
- f. providing import facilities to industrial units in the private sector;
- g. approval of the payment of royalty, technical know-how and technical assistance fee to foreign nationals/organisations beyond the prescribed limits; and
- h. recommendations for acquisition and allotment of land in the industrial areas/estates for industrial purpose.

14.5.17 The government has recently embarked upon a policy initiative for private participation in areas of infrastructure development and provision of utility services. Already a few economic sectors such as gas exploration and exploitation, power generation and telecommunication have been opened up for local and foreign private investment. Some projects in the areas of ports and shipping as well as roads and highways have already been identified by the concerned ministries/agencies for implementation by the private sector. In the Plan period, public sector areas of operation will be progressively reduced and private investors will be induced to take up the place.

14.5.18 One key element for the success of export-led growth is the availability of abundant skilled manpower. Skill development at all levels, therefore, will be given top priority in the Plan period. Environment will be created to attract more private entrepreneurs in the field of

training, research and development. In order to boost-up the private sector, the following additional measures will be taken:

- a. higher level of investment will be encouraged in manufacturing, infrastructure and service industries by the private sector;
- b. the existing list of reserved sectors will be reviewed to further widen the areas for private sector investment; and
- c. the pace of privatisation or denationalisation process will be accelerated.

14.5.19 c. Privatisation Board : The Privatisation Board was established by a resolution of the government in March, 1993. It is entrusted with the overall responsibilities of privatising state-owned enterprises (SOE) identified for privatisation. Ministries having state-owned enterprises under their control have set up privatisation cells for assisting the Privatisation Board in identifying, preparing, processing, implementing and monitoring SOEs for privatisation. The process of privatisation till the end of 1996 was not very satisfactory. During the Fifth Plan, the Privatisation Board will be reinvigorated to hasten the process of privatisation of industrial, commercial and state owned enterprises. With this end in view the Privatisation Board will take-up the following measures to:

- a. develop selection criteria, prepare list of enterprise for sale/transfer, and subsequently implement or arrange for the transfer of such enterprises to the private sector;
- b. determine the priority and sequencing of such privatisation, including a detailed work plan and time table for the various enterprises proposed to be transferred;
- c. identify the optimal methods such as public offering, private placement, sale of assets, management contracts, leasing or management/employee buy outs by which the process of privatisation will be implemented in particular cases;
- d. co-ordinate among and recommend to the Ministry of Finance, Ministry of Jute, Ministry of Textiles and other relevant ministries and agencies steps which may be necessary for the successful privatisation of the enterprises, such as revaluation of the enterprises, restructuring of debt in accordance with sound financial principle, retrenchment of redundant workers, closure of obsolete facilities of the enterprises;
- e. formulate policies for and advise the government with regard to private sector development, investment and participation in previously reserved sectors such as telecommunications, energy and power etc.;
- f. organise public information campaign about the merits and benefits of privatisation; and
- g. undertake any other activities connected with privatisation.

14.5.20 With a view to attracting private buyers, capital restructuring has been carried out in several manufacturing units like jute mills under the Bangladesh Jute Mills Corporation. Overdue loans of both private and government sector jute mills have been restructured through waiving one-third and rescheduling the remaining two-third. Around 39,000 workers were released from the jute sector between June 1990 and June 1995 under the normal 'severance benefit scheme'. Four jute mills have been closed down and one mill has been downsized. The Bangladesh Jute Corporation which was previously dealing in trade of raw jute was wound up, but its assets are yet to be disposed off. Non performing loans of the Nationalised Commercial Banks (NCB), due to public sector manufacturing corporations like the Bangladesh Textile Mills Corporation (BTMC), the Bangladesh Jute Mills Corporation (BJMC) etc. have been settled and process is under way for settling overdue loans of other public sector manufacturing units. Collection of debt service liabilities (DSL) and settlement of arrear dues among corporations have also been strengthened. Sale of 21 public manufacturing sector units have so far been finalised. The process has been stalled due to

non-payment of instalments by the buyers. The manpower of public enterprises remaining with the government is being rationalised and their overhead expenses curtailed with the objective of making these more efficient and dynamic.

14.5.21 With the exception of a few intermittent years, the jute industry has been passing through a critical time since independence by incurring huge losses due to manifold reasons-internal and external - which warrant some positive actions for restoration of its commercial viability. In order to address the deteriorating situation of jute sub-sector, the government has taken a number of reform measures under a programme implemented with the assistance of the World Bank. The main features of the programme are down-sizing of industry, rationalisation of employment, restructuring of past debt, loss financing for jute goods export, privatisation of the jute industry, reforming wage policy, elimination of government intervention in the industry, training of workers and managers in retained mills, social safety net programmes, etc.

14.5.22 The ultimate objective of jute mills privatisation programme is to maintain export of Bangladesh jute goods at the minimum level of 450 thousand tons per year. Towards this end, the programme aims at bringing down the public sector loomage capacity to 4,000 and raising that of the private sector to around 16,000 so that the sub-sector becomes viable, efficient and competitive. Under the programme, 23 public sector jute mills, out of 31, have already been enlisted for privatisation. The Privatisation Board almost completed evaluation of the asset values of these mills. It may be mentioned that the private sector jute mills have failed to operate their existing capacity; about two-third of its loomage capacity has remained in operation during the last four years resulting in the short fall of targeted jute goods production in and export from Bangladesh. During the Fifth Plan, attempts for privatisation of public sector jute mills will continue and privatisation programme will be followed vigorously.

14.5.23 Privatisation and private sector development have been very difficult till the end of 1996. During the 1993-96, the Privatisation Board managed to privatise only 12 industrial units. But due to restructuring of the Privatisation Board, the process of privatisation has gained momentum. The government is fully committed to privatisation and by the terminal year of the Fifth Plan, the process of privatisation will be completed. It may be mentioned here that the Privatisation Board has so far identified 217 SOEs for privatisation covering nearly all the economic sectors, out of which a total of 113 SOEs were taken up for privatisation until June 1998. Besides, the Privatisation Board is continually reviewing the existing policies and strategies for privatisation and recommending appropriate policy reforms for approval of the Cabinet Sub-committee on Economic Affairs. New strategies are also being formulated by the Board for efficient and effective implementation of the privatisation programme.

14.5.24 In accordance with the privatisation policy of the government, 24 textile mills under BTMC having 182,168 spindles and 681 looms are to be privatised. Out of these, 6 mills were privatised and handed over to the private owners, and remaining 18 mills are in the process of privatisation by the Privatisation Board/Ministry of Textiles.

14.5.25 d. Chamber of Commerce and Industries : Under the present policy of private sector led export-oriented growth, the responsibility of the private sector has increased tremendously. Private Sector is now considered to be the pivotal economic player. During the Fifth Plan the institutional capability of the Federation of Bangladesh Chambers of Commerce and Industry (FBCCI) and its member organisations will be developed and strengthened so that they can lead the private sector to perform its role so as to attain higher

growth target. To prevent unfair trade practices, in particular, circumvention of domestic and foreign laws, rules and regulations, these bodies will be encouraged to put in place appropriate code of conduct for their members to observe. With this end in view necessary promotional and support services will be provided to FBCCI and other chambers to improve their institutional capability so that they can discharge their functions for promotion of trade, investment and industry.

14.5.26 e. Export Promotion Bureau : In the wake of the establishment of the World Trade Organisation to administer GATT 1994, GATS (General Agreement on Trade in Services) and TRIPS (Trade Related Aspects of Intellectual Property Rights) under an integrated Dispute Settlement Mechanism, the Bangladesh Export Promotion Bureau (EPB) will have to play a dynamic role to achieve the following objectives: (i) to identify obligations of the government to the business and industrial community of the country, to customers abroad as well as under contracts, agreements, arrangements, conventions, etc. of WTO and other relevant international/regional organisations and take all necessary steps towards meeting these obligations; (ii) to remove existing regulatory constraints; (iii) to provide policy support comparable with those of other competing countries; (iv) to provide improved services for export promotion activities; (v) to provide access to supportive infrastructure services; (vi) to improve entrepreneurial and managerial capabilities through human resources development and (vii) to implement export development programme to help expand and diversify the range of exportable products. Towards the fulfilment of the above objectives, EPB will be required to be revamped in conjunction with effective private sector co-operation and collaboration, including establishment of a joint institute of foreign trade involving representatives of both public and private sectors.

14.5.27 f. Bangladesh Tariff Commission (BTC) : The Tariff Commission will carry out in-depth studies and formulate policies for further tariff rationalisation, liberalisation of the import regime and evolving an incentive structure for strengthening the domestic production and export base. It will review, on a continuing basis, the tariffs on imported inputs - raw materials and intermediate inputs - as well as on capital goods. While rationalising the tariff structure, adequate attention will be given to ensure that inputs for any domestic product are not subjected to rates of duties and taxes higher than those on competing finished imports and that the domestic industries do not suffer loss because of dumping on the one hand and denial of access to foreign market on the other. The BTC will establish effective co-ordination with the National Board of Revenue (NBR), the Bangladesh Bureau of Statistics (BBS), the Bangladesh Bank (BB), the Ministry of Planning/Planning Commission and the Ministry of Commerce for establishment of a rational and dynamic tariff structure consistent with existing government policy of pursuing free market economy. For discharging its functions more effectively, BTC will build up its capacity further through necessary strengthening and upgradation as well as human resources development.

14.5.28 g. Bangladesh Standard Testing Institute : Standardisation is the gateway to trade and industrialisation. A well conceived standardisation programme lays the foundation for growth of domestic production, protection of consumer interest through ensuring requisite product quality and progressive assimilation of imported technology through adoption and adaptation. Standardisation of products as well as of inputs minimises wastage of resources and ensures compatibility of manufacturing processes and practices. In view of these factors, during the Fifth Plan period, the performance of the Bangladesh Standard Testing Institute will be reviewed and effective measures will be introduced to enhance its functional capability through necessary expansion and modernisation. Some vital components of

modernising the Institute will be strengthening its methodology, quality control and testing sections and induction of sufficient number of quality professionals into it.

14.5.29 h. Bangladesh Institute of Management : In the Fifth Plan period, BIM will conduct research on management development and will impart training on socio-economic and other functional areas of management. The main objectives of the institute will be to : (i) upgrade the existing centre to a self-sustained higher institute of training , research and learning, (ii) train and develop managers at all levels of the economy, (iii) assist, develop and maintain higher productivity in business and industry through adoption of technological and engineering innovation and services, (iv) give consultancy services for solving management and related problems faced by various sectors of the economy, and (v) carry out research in different fields of management, economics and business. Activities and courses will be designed and implemented to support private sector industrial and business units.

14.5.30 i. Bangladesh Industrial Technical Assistance Centre (BITAC) : The Bangladesh Industrial and Technical Assistance Centre (BITAC) has been providing technical and advisory services to the entrepreneurs. Presently BITAC Dhaka, Chittagong, Chandpur and Khulna are in operation. During the Fifth Plan the performance of existing centres will be duly evaluated and new centres will be established keeping in view the needs of the industrial areas. BITAC will assist the private sector entrepreneurs, particularly the small entrepreneurs, to solve their technical problems as well as in adopting/adapting new technologies in their production practices.

14.5.31 j. National Productivity Organisation (NPO) : The National Productivity Organisation (NPO) was established in 1989 under the Ministry of Industries. The institutional capability of this organisation will be further developed to create productivity consciousness and awareness to the people for launching productivity as a national objective to be pursued by a national movement in the country, undertake programme for human resource development for productivity improvement, build productivity infrastructure and convert industrial enterprises into an efficient and profitable organisation, work as a catalyst to promote plant-level productivity through consultancy services, conduct survey, study and research work on productivity, and assist the government in formulating productivity policy.

14.5.32 One of the major issues in the industrialisation of a country is to use trade and industrial policies in a co-ordinated manner so as to accelerate the pace of industrialisation. This was done in Japan and the Newly Industrialised Countries. For this purpose, a Trade and Industrial Policy Co-ordination Council will be set up during the Fifth Plan period.

14.5.33 Other General Measures : Other major institutional supports to the growth of private enterprises and industrialisation by the private sector will have to come through reforms in under-performing public administration, backlogged judiciary, costly banking system and also from reduction in transaction costs in getting services from the public utilities. These are monumental works and will be undertaken for completion with determination. As a general principle the government will support institution of the civil society, and rule of law and the private sector to help build constituencies that will in turn support accountable, responsible and responsive and performing public institution. Of the public utilities, power will be the major determinant of industrial investment. Concrete programmes in both private and public sectors have been drawn up to meet this need.

14.6 Development Programmes and Targets

14.6.1 Textiles and Clothing Sub-sector : Domestic supply of fabrics from the existing capacity was 1,129 million metres in 1995/96, including 200 million metres for the RMG

industry. Corresponding estimates for 1996/97 are 1,163 and 210 million metres respectively, while the supply from the existing mills in the terminal year (2001/2002) of the Fifth Plan is projected at 1,348 million metres, including 268 million metres for the RMG industries. On the other hand, the total demand for fabrics in the year 2001/2002 is projected to be 5,265 million metres, including 3,228 million metres for export. Consequently, the total demand-supply gap of fabrics will increase from 2,633 million metres in 1996/97 to 3,917 million metres in the year 2001/2002, out of which 2,960 million metres will be on account of RMG industries, unless more fabric manufacturing capacities are established, in the mean time, as backward linkage industries. The actual and estimated/projected demand for and supply of fabrics for the local and export market for the years 1995/96, 1996/97 and 2001/2002 and the corresponding supply-demand gaps are shown in Table 14.4.

Table 14.4
Demand-Supply Gap of Fabrics : 1997-2002

(in million metres)

Sl. No.	Fabrics	Actual 1995/96	Benchmark (Estimated) 1996/97	2001/ 2002 (Projected)
i.	Demand for Fabrics	3,520	3,796	5,265
	a. For domestic consumption	1,520	1,596	2,037
	b. For export (for RMG and other forms of export)	2,000	2,200	3,228
ii.	Supply of Fabrics From Existing Facilities	1,129	1,163	1,348
	a. For domestic consumption	929	953	1,080
	b. For export	200	210	268
iii.	Demand-Supply Gap of Fabrics	2,391	2,633	3,917
	a. On account of domestic consumption	591	643	957
	b. On account of export	1,800	1,990	2,960

14.6.2 The excess demand for yarn over the local production in 1995/96 was 390 million kg. which is expected to increase to 639 million kg. in 2001/2002. About 67 per cent of this total demand will be for cotton yarn, while the rest 33 per cent will be on account of yarn from man-made fibres. The projected demand for yarn by 2001/2002 and the demand-supply gap of all types of yarn for the same years are given in Table 14.5.

Table 14.5
Demand-Supply Gap of Yarn: 1996-2002

(in million kg.)

Particulars	1995/96 Actual	1996/97 Estimated	2001/2002 Projected
Demand of yarn	503	542	752
Production of yarn	113	113	113
Demand-Supply Gap	390	429	639

14.6.3 The demand-supply gaps of raw cotton and man-made fibres were 369 million kg. and 169 million kg. respectively in 1995/96 which are projected to reach 555 million kg. and 254 million kg. respectively by 2001/2002 assuming wastage for raw cotton at the rate of 10 per cent and for man-made fibres at the rate of 3 per cent. The existing and projected requirement, domestic production, and demand gaps of raw cotton and man-made fibres are shown in Table-14.6.

Table 14.6
Demand-Supply Gap of Raw Cotton and Man-made Fibres : 1996-2002

Items of Raw Materials	1995/96	1996/97 (Benchmark)	2001/2002 (Projected)
a. Raw-Cotton			
Demand	374	403	560
Production	5	5	5
Demand Gap	369	398	555
b. Man-made fibres			
Demand	171	184	256
Production	2	2	2
Demand Gap	169	182	254

14.6.4 With a view to progressively increasing domestic production of yarn and cloth the Fifth Plan envisages to overcome the shortage of manpower through human resource development, creation of an investment friendly environment, reforming the textile sector through fine tuning of policy objectives, creation of new capacity in spinning and weaving and BMRE of un-economic units in the private sector and some selected public sector mills. The private sector will be at the cutting edge of investment and technological advancement keeping in view the global and domestic opportunities. The following strategies will be pursued for the overall development of the textiles and clothing sub-sector:

- a. New capacity will be created to cater to the needs of the export-oriented RMG industries as well as the domestic markets. To this end market response will determine the nature of investment to allow horizontal and vertical expansion. Investment fund will be sought from domestic banking sources, joint-ventures, foreign direct investment and relocation of units by foreign entrepreneurs either independently or through joint venture arrangement with local sponsors;
- b. BMRE of the old and uneconomic existing units in the private sector and in selected cases in the public sector will be undertaken to ensure their financial and commercial viability through increased productivity;
- c. The existing specialised textile mills and power looms will be organised into groups on area basis and around 200 looms in each area will be taken as a package for intra and inter-unit balancing;
- d. Till adequate domestic supply capacity is created, grey fabrics will be allowed to be imported under extended bonded warehousing facilities for dyeing and finishing locally; and
- e. Tariffs on all imported inputs for the textiles and clothing subsector will be rationalised on a continuing basis; raw cotton and synthetic chips/fibre will be treated at par while levying duties and taxes on them.

14.6.5 Handlooms : The growth of the traditional sector comprising handlooms and sericulture will promote rural employment, import-substitution and export industries. The handloom industry plays an important role in the economy of Bangladesh. Next to agriculture, it is the second largest source of rural employment and income. About 5 million people are directly or indirectly engaged in this industry. The Handloom Census 1990 recorded 1,027,407 weavers in the country and 501,834 handlooms out of which 317,026 were operable. Handlooms produce some 757 million yards of cloth. Monthly demand of yarn for handloom is 12.7 million kg. Fixed capital and credit demand per loom was Tk.10,008 and Tk.8,904, respectively. The Handloom Board has undertaken different programmes/projects for implementation in order to improve the handloom industry to a satisfactory level in

producing quality products. To address the problems of the handloom industry, well identified strategies will be undertaken during the Fifth Plan period.

14.6.6 The strategies for development of handloom sub-sector will include:

- a. strengthening of the Bangladesh Handloom Board (BHB) to perform promotional activities for boosting up production at competitive prices;
- b. revitalisation of idle looms and linking up demand sources through organising the supply sources of handloom products;
- c. improvement of loom technology and changing of traditional handlooms into power looms in phases;
- d. activating the institutional credit sources for financing the working capital requirements of the handloom weavers and mobilising banking institutions to meet their credit needs as well as to do profitable banking business;
- e. ensuring availability of yarn, dyes and chemicals at competitive prices to the handloom weavers and to make appropriate arrangements for marketing their products locally;
- f. establishment of export-linkages through more concerted efforts to market handloom products abroad and also to feed the export-oriented RMG industry by encouraging non-traditional product base to produce handloom woven shirting, suiting and furnishing fabrics of upgraded quality;
- g. improvement of technology of handloom through research and adaptation;
- h. reaping the productive potential of handloom weavers through re-organisation of co-operative societies as well as through development of skill and improvement of designs; and
- i. promotion of export of Grameen Check and Dhaka Check to overseas markets.

14.6.7 Sericulture: Sericulture is an important sector which can play an important role in generating employment and alleviation of poverty. About 8-9 hundred thousand families are engaged in this occupation directly or indirectly. It is not a primary occupation in Bangladesh. It is more or less a subsidiary occupation providing part time jobs for women at family level. This sub-sector is labour intensive and its value addition is high. But it is lagging behind due to some problems, such as scarcity of disease free layings, lack of capital or loan, traditional technology of rearing and reeling, low quality of cocoons, poor marketing facilities, shortage of trained and skilled manpower and slow expansion of mulberry cultivation. As sericulture farmers are unskilled and they do not have appropriate rearing house, about 25 per cent to 30 per cent disease-free layings and cocoons are damaged in the rearing process. This in turn makes sericulture farming uneconomic. Farmers lose their interest and leave the occupation. There is a strong need for increasing the number of skilled *bosnis* (small sericulture farmer) and skilled reelers. Therefore, the Fifth Plan envisages to set up chaki rearing-cum-minifiliature centres where intensive training will be imparted for development of skilled *bosnis* and reelers.

14.6.8 The strategies for development of the sericulture sector will include:

- a. restructuring and strengthening of sericulture activities to perform research and provide extension services, supply disease free layings, disseminate high yielding variety of mulberry cultivation and silk worm rearing technology and help increase of income of silk farmers through qualitative and quantitative improvement of products;
- b. encouragement of NGOs for greater participation in different stages of production and marketing activities;

- c. ensuring access of *bosnis* (small sericulture farmers) to various inputs and facilities conducive to production of quality cocoons through adopting appropriate policy measures;
- d. extension of mulberry plantation, production of cocoons, and local marketing of silk products of *bosnis* and large farmers by a combination of efforts by entities involved in sericulture sub-sector;
- e. development of export-linkage to market sericulture products abroad and to feed the export-oriented RMG industry;
- f. improvement of technology in the silk sector and design of silk products; and
- g. setting-up *chaki* rearing cum minifiliature centres where intensive training will be given for development of skilled *bosnis* and reelers.

14.6.9 To overcome the problems of this sub-sector the Fifth Plan envisages to undertake the following programmes to promote:

- a. expansion of mulberry plantation in all possible places;
- b. expansion of extension services;
- c. production of quality cocoon;
- d. new reeling technology for improvement of quality silk yarn;
- e. marketing and credit;
- f. establishment of *chaki* rearing and minifiliature centre (CRC) under the zonal or regional offices of Bangladesh Sericulture Board (BSB); and
- g. strengthening Bangladesh Sericulture Research and Training Institute (BSRTI) to enhance the skill of manpower engaged in sericulture farming and silk reeling.

14.6.10 In order to bring about sustainable development of the silk sector, the Fifth Plan seeks to undertake a long term multi-faceted programme for introducing improved technology through strengthening institutional arrangement and policy improvements. This programme envisages establishment of a non-profit private sector institution- Bangladesh Silk Foundation. It will be established to provide necessary support and training activities in silk sector as well as to co-ordinate the efforts and initiatives of the NGOs and private entrepreneurs. The main objective of Bangladesh Silk Foundation will be to assist in increasing the income of small scale silk producers, most of whom are poor women, through introducing improved technology and to develop institutional and policy support for sustainable development of silk and sericulture sub-sector. During the Plan period Bangladesh Silk Foundation will undertake programmes to (a) enhance productivity of silk worm through dissemination of improved technology and undertaking adaptive research through BSRTI, (b) develop Germ Plasm Maintenance Centre, (c) improve management of grainages, (d) disseminate silk worm rearing and reeling technologies to the farmers, NGOs, rearers and reelers, and (e) undertake product development, design improvement and market promotion of silk yarn and fabrics. These programmes envisage to enhance the volume of production of silk yarn from the present level of 29 tons in 1996-97 to 181 tons by 2002 and to raise silk farmers' income and create employment opportunities. Besides, appropriate steps will be taken towards rationalisation of tariff rate on the imported silk yarn to enable local production stand the competition of imported silk yarn.

14.6.11 Other strategies for overall development of the textile sub-sector will be as under:

- a. For development of human resources for the textile sector, the existing training institutions under the Ministry of Textiles (MOT), Department of Textiles (DOT), Bangladesh Handloom Board (BHB) and Bangladesh Sericulture Board (BSB) will be strengthened and some new training facilities will be created- to stay with time, additional trade courses will be designed and offered to the trainees;
- b. A central testing and quality control laboratory will be established in the public sector to serve both the public and private sector units;
- c. The facilities being created in the National Institute of Textile Training Research and Design (NITTRAD) will be utilised for product testing and adoption of market sensitive design enabling sophisticated marketing and merchandising high value added garments in the process of transforming fashion business into an economically viable proposition;
- d. Dependence on imported machinery and spares will be reduced through transfer, adoption and adaptation of technology and development of cost-effective indigenous technology;
- e. Currently women's participation in the export-oriented RMG industry of Bangladesh is more than 85 percent of total employment; but in other modern textile sub-sectors, it is very negligible compared to 50-60 per cent in developed countries; keeping in view the national objective of poverty alleviation of the socially disadvantaged groups particularly distressed women, adequate measures will be taken for greater participation of women labour force in the modern textile sector.

14.6.12 Projected Productions: The projected production of fabrics has been estimated at 3,651 million metres out of which fabrics for domestic consumption will be 2,037 million metres. If the projected production is achieved, per capita consumption of cloth will be 15.37 metres in 2001/2002. The estimated production for yarn and fabrics during the Fifth Plan period is shown in Table 14.7.

Table 14.7
Projected Production of Yarn and Fabrics 1997-2002

Textile Products	Benchmark (estimated) 1996/97	Projections 2001/2002
Yarn production ¹ (million kg.)	113	522
Fabric for domestic consumption (million metres)	953	2037
Fabric for RMG production	210	1614
Total fabrics ² production (million metres)	1163	3651
Population (million)	123.8	132.50
Per capita demand for fabrics (metres)	12.9 ³	15.37

Notes :

¹ Of total yarn requirement for projected production of fabrics, 100 per cent will be produced by 2001-2002.

² Cent per cent of domestic fabric requirement and 50 per cent RMG fabric requirement will be domestically met by 2001/2002.

³ Demand for domestic market in 1996/97 is estimated at 1596 million metres.

14.6.13 Fabrics from the modern sub-sector (which includes composite textile mills, specialised textiles and power looms and knitting and hosiery units), handloom, sericulture and others (tents, soft luggages, gloves, socks, tarpaulins, inter-linings, under-garments, umbrella-cloth etc.) is projected to increase from 564 million metres in 1996/97 to 2953 million metres in 2001/2002. The benchmark production and projected production in these sub-sectors during the Fifth Plan period are given in Table 14.8.

Table 14.8
Projected Production of Fabrics During 1997-2002

Textile Sub-sectors	Benchmark (estimated) 1996/97	Projected Production (2001/2002)
Modern Sector	564	2,953
Handloom	595	690
Sericulture and others	4	8
Total	1,163	3,651

14.6.14 While fabric production in handloom is assumed to grow at an annual compound growth rate of about 3 per cent, in sericulture it is assumed to grow at the rate of about 15 per cent per annum, that in modern sub-sector at the annual rate of 39 per cent during 1997-2002. The overall annual growth rate of fabrics in the textile sub-sector is envisaged to be 25.7 per cent during 1997-2002. A comprehensive programme for the creation of new capacity in spinning, weaving, dyeing and finishing and export-oriented garments will be launched in order to attain self-reliance in fabric for domestic market by the year 2002 and to meet 50 per cent of the fabric requirements of export-oriented RMG industries. Table 14.9 shows the number of units proposed to be set up during the Fifth Plan.

Table 14.9
Number of New Units Proposed to be Established in Different Subsectors
During Fifth Plan

Sub-sectors	1997/98	1998/99	1999/2000	2000/2001	2001/2002	1997-2002
Spinning (Each unit of 25,000 Spindles)	42	42	42	42	45	213
Weaving (Each unit of 120 Shuttleless Loom)	46	46	46	46	46	230
Dyeing and finishing (Each unit of 10 million metres per annum)	49	49	49	49	53	249
RMG (Each unit of 0.6 million pieces per annum)	153	153	153	153	153	765

14.6.15 Employment Generation in the Textile Sub sector: In the textile sub-sector it is estimated that a total of 1,779,560 persons will be employed during the Plan period, of which 8,40,760 will be in the public sector and 938,800 will be in the private sector. In the private sector 130,800 persons will be employed in spinning, 46,000 in weaving and knitting, 373,500 in dyeing and finishing, 382,500 in RMG, 6,000 in specialised textiles and 6,000 in miscellaneous industries. In the public sector 1,500 persons in BTMC, 3,260 in Department of Textiles, 670,000 in sericulture and 166,000 in handloom will be employed.

14.6.16 Jute Industries: Jute is a vital sector of the economy from agricultural, industrial and commercial points of view. About 5 million bales of raw jute is produced in the country every year of which about 1.5 to 2 million bales are exported, 3 million bales are consumed by local mills and about 0.5 million bales are used for domestic consumption and kept as carry over stocks. About 50 per cent of world import demand for jute goods (approx. 0.90 million metric ton) annually is met by Bangladesh. Jute is the third biggest export earner (Tk.15,960 million annually) of the country.

14.6.17 As this sector provides large scale employment and earns substantial foreign exchange, the government continued to provide hidden subsidies and financial assistance to jute mills from the very beginning. Consequently the sector's debts to the banks stood at about Tk. 40 billion in 1993 when the government launched Jute Sector Reforms Programme (JSRP) with financial and technical assistance from IDA. The Programme envisaged to create

a viable, essentially privately owned jute industry to be operated on a commercial basis. Major thrust of the JSRP was privatisation of the public jute mills within 30th June, 1996. The Privatisation Board tendered and re-tendered a number of jute mills for privatisation during the last few years but not much satisfactory response was received from the market.

14.6.18 The performance of the private sector mills till the end of 1996/97 has been disappointing and frustrating. In spite of receiving debt write-off, restructuring facility and loss financing support from the government under JSRP, the private sector could not utilise its existing installed capacity of 10,000 looms. As a matter of fact, the private sector utilised less than 50 per cent of their capacity and closed down 8 mills.

14.6.19 The JSRP was a difficult and complex programme. The government made sincere efforts to carry it forward. The government spent more than double the amount of the IDA Credit Line (Tk. 10,000 m.) in this project. The government issued bonds worth Tk. 18,060 million to pay off the debts of BJC and 4 closed jute mills and provided loss financing support to the running jute mills. It also paid Tk. 3,360 million to meet the separation cost of the workforce of the public jute mills. But the purpose for which the programme was undertaken has not been achieved. The commercial viability of the jute industry has not been established. Privatisation was recognised as an effective means to strengthen the role of the private sector in trade and industry with a view to accelerating economic development and augmenting resources for the same. Accordingly, the government adopted a comprehensive privatisation policy and laid down detailed procedure to facilitate the process of privatisation. In order to create a viable, essentially privately owned jute industry to be operated on a commercial basis in a reformed policy environment, the government has been pursuing the jute sub-sector restructuring programme since July, 1993. The government has already decided to reduce its ownership of jute sector investment from 64 per cent to 20 per cent. Some 23 jute mills, out of 31 in the public sector, are enlisted for privatisation. The Privatisation Board has almost completed evaluation of the asset value of these mills with a view to unloading them to the private sector with utmost speed.

14.6.20 The loss of production of the jute industry to the extent of 15 per cent to 20 per cent is attributable to erratic power supply. It is expected that the power need of the jute industry will be met by the later part of the Fifth Plan. The future of jute and jute industry lie in their diversified uses and aggressive market promotion. For this, there is an immediate need for strengthening the R&D and institutional capacities of the Ministry of Jute and its various organs.

14.6.21 In order to achieve the objectives of the Fifth Plan, the following strategies will be pursued for the jute manufacturing sub-sector during the Plan period :

- a. **Improvement in Productivity and Capacity Utilisation:** Improvement in productivity and capacity utilisation will be done through rehabilitation of the existing jute mills through BMR programmes, enforcement of industrial discipline and exploring possibility of participation of labour through profit-sharing and participation in management, adequate and timely supply of raw-materials and spare parts, privatisation of maximum public sector jute mills and rationalisation of man power therein, improvement in managerial efficiency through skill development training and improvement in the quality of conventional jute products and reduction in the cost of production through improvement in per loom production and reduction in raw jute cost by increasing per acre productivity.

- b. Diversification of End Uses of Jute:** Diversification of end uses of jute through production of pulp and paper, geo-textiles, absorbents, hard-boards, handicrafts, mats, decorative wall covering, shopping bags, carpets, blankets etc. will be pursued through undertaking appropriate development programmes. Development and extension of appropriate varieties of jute, kenaf and rami fibre to enable round-the-year supply of these items for establishment and smooth operation of pulp and paper industry will be undertaken. Improvement in the quality of jute products will continue to remain a central strategy for attracting higher prices for Bangladeshi jute goods.
- c. Market Promotion:** Attempts will be made to promote and develop market for jute goods through identifying the constraints of the existing marketing system of jute goods and taking appropriate measures to overcome such constraints, assessing the market demand both at home and abroad, conducting studies on a continuous basis on the jute goods demand with a view to overcoming the demand and supply gap, formulating appropriate pricing policies, opening required number of sales centres in Bangladesh missions abroad, organising display of jute goods in major importing countries, participation in the international trade fairs and contacting foreign buyers to gear up exports, making institutional arrangement to monitor export prices of competing goods to prevent dumping by the competing countries and formulating appropriate export and import policies. Commercial Sections of Bangladesh Missions abroad will be revamped for this purpose.
- d. Financial and Other Policy Incentives:** Financial and other policy incentives strategy includes rationalisation of monetary and fiscal incentives, *viz.* reducing interest rate from existing 15 per cent to about 10 per cent or less, exemption of excise duty on electricity, reduction in the prices of oil and gas for generation of electricity for jute mills to the level fixed for Bangladesh Power Development Board (BPDB) and exemption of advance income tax in case of jute yarn and twine, adopting suitable and appropriate mechanism to maintain parity with dollar value among the competing countries to match the external competition for our jute and jute goods.
- e. Strengthening of Institutional Capability and R&D:** Strengthening of institutional capability and R&D involves evaluation of the existing R&D institutions for clear identification of technological gaps. In order to bridge the gaps, establishment of a new “Jute Industry Development Centre” under Bangladesh Jute Research Institute (BJRI) will be pursued with necessary technical assistance to undertake research activities to develop technologies for improvement of quality and yield of traditional jute fibres as well as for diversification of jute products. To evolve new high yielding varieties of jute seeds to increase per acre yield which, in turn, will lead to substantial reduction in the cost of production to make jute and jute goods competitive in the international market will be at the top of R&D priority. Research and Development of rami fibre by sharing experience with China will be promoted.
- f. International Jute Organisation (IJO):** For undertaking research and development in the areas of jute, jute goods and related products as well as accessing markets, necessary assistance will be sought from the International Jute Organisation (IJO).
- g. Improvement of Environment and Natural Resources:** Retting of jute is perceived to contribute to water pollution where there is insufficient availability of water. In such areas, canals and small ponds will be dug for retting of jute. If necessary, promotional measures will be undertaken to motivate the jute growers by the local government bodies for retting their jute in a proper way to reduce/eliminate adverse environmental

effects. New techniques for retting of jute will be explored. The government policy on banning the production of polythene bags as substitutes for jute bags will be enforced and towards this end, polythene bag factories may be converted into jute bag manufacturing factories. Setting up of more polythene industries in the country will not be allowed. To reduce the acreage under jute and at the same time maintain a higher volume of supply for its diversified end uses, including use of green jute for pulp making and thus to ease the burden on insufficient forest resources of the country, efforts will be made to produce jute throughout the year through necessary augmentation of soil nutrition.

- h. Social Safety-net Programme:** Programmes will be undertaken to provide retrenchment benefits and retraining for self employment to support affected workers.
- i. Planning and Implementation of Development Programmes Through Local Level Institutions:** With the introduction of proposed institutional structure at Zilla, Thana and Union levels, small and cottage industries planning activities could be included in the functions of such local government bodies. During the Fifth Plan, BSCIC will provide necessary services for industrial development including industry based on jute and will maintain effective liaison with the development programmes of such institutions. The process of interaction between BSCIC and the local level institutions will ensure effective local level participation in such industrial planning and development. Moreover, the NGOs who have emerged as a new force for development in the rural areas are expected to play an effective role in the skill development of the poor and disadvantaged groups through motivation and training and help them in producing varieties of industrial goods including jute goods.
- j. Employment Generation and Poverty Alleviation:** The jute and jute manufacturing sub-sector has immense potential for employment generation and poverty alleviation in Bangladesh. Jute production, jute industry and trade and the related services employ about 10 per cent of our labour force and jute industry is the second largest industrial employer after textiles. The new and diversified use of jute plants and fibres for pulp and paper, textile yarn blended with cotton and wool, geotextiles, jute reinforced plastic materials, luggages, shopping bags, handicrafts, accessories, etc. will open new horizon for employment opportunities. The women will find job opportunities in the rural areas by utilising finer jute yarn in cottage industries. In the agricultural sector, increased yield per unit area will bring down the production cost of jute which will help growers to alleviate their economic hardship by raising their income.

14.6.22 Chemical Industry: In the Fifth Plan, the objectives of the chemical sub-sector will be as follows:

- a. to increase the contribution of chemical industries sub-sector (fertiliser, paper, newsprint, etc.) to GDP;
- b. to meet the needs of the country in respect of fertiliser, paper, news print, etc.;
- c. to identify and exploit the comparative advantages of the economy in different sub-sectors and to direct public sector investment in those desirable sectors where private investment is still shy;
- d. to identify and give emphasis on thrust sectors;
- e. to develop human resources for efficient management and operation of enterprises;
- f. to develop a sound technological base in the country; and
- g. to provide facilities and services to attract private investment, including foreign direct investment.

14.6.23 In order to achieve the objectives and targets set for the chemical industries sub-sector, the following strategies will be pursued for accelerating the contributions of this sub-sector towards a self sustained economy:

- a. Public sector dominance in this sub-sector will be gradually reduced and the private sector will be encouraged to set up new industries either alone or jointly with the public sector. All the sub-sectors under chemical sector are open to the private sector. But the private sector has not come forward to take up the challenge except participating in a joint venture with a foreign company (KAFCO). The investment size, technological complexities and the mandatory price structure may be attributed as main reasons standing in the way of private sector participation in the fertiliser sector, particularly in urea manufacturing. A private company has recently come to set up a joint venture SSP fertiliser with BCIC. There are great prospects for participation by private sector in all areas of chemical sector. Necessary technical support such as project analysis, project preparation, demand and supply analysis, sourcing and pricing of machinery, market information, etc. will be provided to the private sector in setting up joint ventures and/or new enterprises in the private sector.
- b. Excess manpower in the corporations/enterprises will be rationalised to economise revenue expenditure. At the same time necessary power/authority will be delegated to the corporations/enterprises and they will be made accountable for failure and rewarded for success.
- c. One of the major problems and impediments to the growth of this sub-sector is the dearth of finance, technical know-how and skilled manpower. In this context, besides local currency support through ADP, the following source of financing will be vigorously explored:
 - i. alternate sources of financing for projects from the capital market will be explored. BCIC will be given freedom in exploring and arranging alternate sources of finance outside the country;
 - ii. more emphasis will be given on building projects on BOT/BOO/BOOT model; the public sector will identify viable projects, process them for approval and implementation; after implementation they will operate the projects for some time and subsequently transfer them to private entrepreneurs; and
 - iii. local currency financing, *inter-alia*, public subscriptions of shares through the capital market will be explored; joint venture companies, with participation of BCIC, will be encouraged to issue shares/debentures.
- d. In case of sick industries, viability where possible will be restored *inter-alia*, through screening out inefficient manpower and replacing them by efficient, dependable, sincere and committed manpower. Necessary training, both local and foreign, will be imparted for building up efficient management for restoring their viability. Technical support in the form of studies, equipment and machinery will be provided to put the industries/enterprises on a viable footing. All stakeholders - owners, management, labour and the concerned lending institution will be asked to bear out rehabilitation.

14.6.24 Projected production for some major chemical products during the Fifth Plan are as follows:

a. Urea Fertiliser: Bangladesh is a major producer of Urea Fertiliser in the region having 6(six) factories with annual installed capacity of 2,500 thousand metric tons of urea. In 1995/96 BCIC produced 2,134 thousand metric tons of urea. According to the projection made by BCIC the actual demand of urea fertiliser during 1995/96 was approximately

2,300 thousand metric tons. The projected urea production was 2,110 thousand metric tons. The demand of urea is rising by 10 per cent per annum. In 1996/97 the government has taken action to import 200 thousand metric tons of urea to meet the local demand. A recent study indicated that future demand of urea will further increase as shown in the Table 14.10 .

Table 14.10
Demand Projection of Urea Fertiliser (1997-2002)

Year	Urea Demand	Local Production	Net Import Requirement
1996/97 Benchmark	2.40	2.05	0.35
1997/98	2.45	2.10	0.35
1998/99	2.67	2.10	0.57
1999/00	2.92	2.10	0.82
2000/01	3.19	2.49	0.70
2001/02	3.49	2.55	0.94

(in million metric ton)

This leaves room for setting up more urea fertiliser factories in the country. For this purpose NGFF will be replaced by Shahjalal Fertiliser Co. Ltd. increasing annual production capacity from 106,000 metric tons to 330,000 metric tons and another new urea fertiliser factory will be set up in northern/southern part of the country by the year 1999/2000. There is a plan to increase capacity of urea production in JFCL and ammonia production in CUFL by 1999/2000 to 2000/2001.

- b. TSP:** The present annual demand of TSP in the country is about 700 thousand metric tons. TSP Complex produces about 150 thousand metric tons of TSP/SSP (TSP-50,000 metric tons and SSP 100,000 metric tons). The rest of the demand is met through import. In order to meet a big chunk of the demand the annual production capacity of TSP Complex will be increased to 275 thousand metric tons (TSP-75,000 metric tons and SSP-200 thousand metric tons) through balancing and full capacity utilisation. There is a plan for setting up a three hundred thousand metric ton SSP Factory by a foreign sponsor in collaboration with BCIC. There is also a plan for setting up a DAP factory with a capacity of 360 thousand metric tons in the country.
- c. Paper:** The present demand for writing and printing paper is 80,000 metric tons. The demand for various grades of paper has been increasing. In 1995/96 BCIC produced 41,889 metric tons of paper and the rest of the demand was met from the supplies of private sector and import. The projected production of paper in 1996/97 is 44,000 metric tons. The growth rate of demand for different grades of paper has been assumed to be 6 per cent to 10 per cent. In order to cater to the future demand the present capacity of producing paper and pulp in public sector including joint ventures will be increased through BMRE of the existing mills and setting up of new mills preferably under joint venture/private sector.
- d. Newsprint:** The demand for newsprint has increased rapidly during the last few years because of its use as writing paper and the government policy of cherishing the freedom of the press. The present demand for newsprint is about 60,000 metric tons per annum. The lone newsprint producer in the country, Khulna Newsprint Mill (KNM) having installed capacity of 48,000 metric tons per annum is no longer in a position to meet the domestic demand. In 1994/95 and 1995/96 KNM produced 43,061 and 40,479 metric tons newsprint respectively. A large quantity of newsprint is being imported into the country to meet the short-fall. To meet the demand for newsprint BCIC will undertake BMRE of KNM in the Fifth Plan period.

- e. **Cement:** The present annual demand for cement in the country is 0.28 million metric tons. In 1994/95 and 1995/96 BCIC produced 0.147 million and 0.153 million metric tons cement respectively. The only integrated plant Chhatak Cement Factory having a capacity of 0.233 million metric tons is under BCIC. There are about 6-7 cement mills in the private sector and based on imported clinker.

14.6.25 Under chemical industries sub-sector the major programmes/projects will include *inter alia* Shahjalal Fertiliser Factory, capacity increase of urea in Jamuna Fertiliser Factory, capacity increase of amonia in Chittagong Fertiliser Factory, Di-Amonium Phosphate Plant (DAP) at CUFL, setting up of a paper machine in SPPM, BMRE of Karnaphully Paper Mills, BMR of Khulna Newsprint Mill (KNM) and one Urea Fertiliser Factory in the northern or the southern zone. Projected production for different chemical products is summarised in the Table 14.11.

Table 14.11
Projected Production for Chemical Industries

Items	(in metric ton)					
	1996/97	1997/98	1998/99	1999/2000	2000/2001	2001/2002
Urea	2,049,810	2,150,000	2,150,000	2,150,000	2,330,000	2,363,000
TSP/SSP/DAP	104,181	150,000	176,000	209,000	220,000	220,000
Newsprint	23,903	45,000	45,000	45,000	45,000	45,000
Paper	23,239	45,000	45,000	53,400	72,600	79,200
Cement	107,300	150,000	186,000	221,000	221,000	233,000

Source : BCIC

14.6.26 Sugar Industry: Objectives of the sub-sector during the Fifth Plan is to increase the contribution of sugar sector to GDP, create new job opportunities specially in rural areas and reduce sugar import by increasing the domestic sugar production.

14.6.27 In the current industrial policy additional investment in sugar industry by the public sector has been discouraged and the private sector has been given preference with various incentives. But so far, response from the private sector in sugar industry has been disappointing. So the public sector will continue to play some role. BMRE programmes of existing sugar mills will continue to be implemented for their progressive unloading to the private sector.

14.6.28 Dry and low rain-fall belt in the north, north-west and western regions of Bangladesh comprising the greater districts of Rajshahi, Dinajpur, Bogra, Rangpur, Pabna, Kushtia, Jessore and Faridpur are considered as the best sugarcane growing areas of the country. In fact, almost all of the existing sugar mills are located in these regions where sugarcane has emerged as the main cash crop over the years. There is ample scope for capacity expansion of some existing sugar mills as well as establishment of new sugar mills in different locations of the cane growing regions.

14.6.29 Demand for sugar in the country is estimated to be about 371 thousand tons in 1996/97 for a population of 123.8 million based on per capita sugar consumption of 3.0 kg. a year. Assuming the consumption rate remains constant, demand for sugar will increase to about 400 thousand tons in 2001/2002 for an estimated population of 132.5 million. If per capita sugar consumption increases due to growing urbanisation and change of food habit, total demand of sugar will increase further. Against this demand, total sugar production capacity of the 15 operating sugar mills is now 215 thousand tons per annum based on total

cane crushing capacity of 21,044 tons per day, 120 effective crushing days and 8.5 per cent sugar recovery. However, depending on the availability and quality of sugarcane, actual sugar production may vary from 200 thousand tons to 225 thousand tons per annum. Thus, at present there is an annual deficit of about 150 thousand tons of sugar which is met through import at the cost of Tk.2,500 million in hard earned foreign currency. The deficit will increase nearly to 200 thousand tons in 2001/2002, unless additional sugar production capacity is created at suitable locations of cane growing regions of the country.

14.6.30 Estimated demand, domestic production and import of sugar up to 2002 are given in the Table 14.12.

Table 14.12
Estimated Demand for Production and Import of Sugar

Year	Population (million)	Demand @ 3.0 kg. (million ton)	Local Production (million ton)	Deficit/ Import (million ton)
1996/97	123.80	0.37	0.14	0.23
2001/2002	132.50	0.40	0.200-0.23	0.17-0.20

14.7 Obstacles to Growth of the Sugar Industry in Bangladesh

14.7.1 With the exception of a few, most of the sugar mills in Bangladesh do not have cane plantations of their own and they have to depend on a large number of small farmers in their respective mill zones for sugarcane supply. But owing to several factors including fragmented and small cane holdings, high initial input cost, year round waiting time for cane, incidence of pest and disease, lack of high yielding variety of cane, high risk involvement etc., per acre yield of sugarcane in Bangladesh (which is 20-21 tons/acres) is relatively low. As a result, sugarcane faces hard competition from other crops, especially paddy which has a much shorter growing period. Besides, sugar content in the cane is also low mainly because of climatic factors. This stands in the way of increasing the sugar recovery which at present varies from 8.0 per cent to 8.5 per cent.

14.7.2 Sugar industry in Bangladesh was originally started by the private entrepreneurs during the mid-thirties. But since then no further investment by the private sector has been made in the sugar industry. Investment in sugar industry is now open to both the public and the private sectors. In the new industrial policy, the role of the public sector has been shrunk and new investment by the public sector in sugar industry has been discouraged in order to encourage the private sector investors. Though private investment in different industrial sectors has increased significantly in recent years, no private entrepreneur has so far come forward to set up new sugar mills in the country. As it is neither desirable nor advisable to withhold investments from the sugar subsector altogether, an appropriate policy package, along with adequate incentive measures, will have to be worked out to make the sugar subsector attractive for private investments.

14.7.3 Total cane crushing capacity of the existing 15 sugar mills of the country is 21,044 metric tons cane per day (TCD) with which 200-225 thousand tons of sugar can be produced per annum. Based on present performance and future prospect of sugarcane production in their respective mill zones, cane crushing capacity of 8 (eight) of the existing sugar mills namely, Carew, Zeal Bangla, North Bengal, Natore, Faridpur, Kushtia, Mobarakganj and Panchagarh Sugar Mills, can be increased by 1000-1250 TCD each during the Fifth Plan. In addition to the expansion programme, 3 (three) new Sugar Mills of 2000 TCD each may be set up at Shibganj of Chapai Nawabganj district, Serajganj of Serajganj district and Jhikargacha of Jhenidah district. The private sector will be encouraged to establish these new

mills. This will increase the cane crushing capacity by another 6,000 TCD. On completion of the development programme proposed above, total cane crushing capacity of the country will increase from 21,044 TCD in 1996/97 to 35,294 TCD and sugar production capacity will increase from 215 thousand tons to nearly 400 thousand tons per annum by 2001/2002. This will help reduce sugar import. In addition, the proposed three new sugar mills will create direct employment opportunity for 3,225 persons (1,075 persons in each) and will also bring about benefits to a large number of people including marginal farmers in areas surrounding the mills.

14.7.4 Besides the sugar mills, there is a bright prospect for setting up an export oriented molasses-based distillery having a capacity of 5-6 million litres per annum. This project may be set up as a joint venture with foreign entrepreneurs who will ensure export of the same. This will increase the value-addition of molasses which is obtained as a by-product from the sugar mills and will also create job opportunity for about 200 persons.

14.7.5 Steel and Engineering: The engineering industries produce investment goods which determine the technological capability and consequently the production level and efficiency of an economy. The engineering industries are also suppliers of important consumer durables. This is particularly so in the electrical and transport equipment industries. In the developed economies, the growth of the subsector generally exceeds that of the manufacturing as a whole. In the developing economies, on the other hand, the sub-sector lags behind.

14.7.6 Bangladesh has a 'mini' steel plant at Chittagong which has been out of operation for quite sometime. Its engineering base is very weak despite the fact that the country has a machine tools factory, a diesel engine manufacturing plant as well as a plant for manufacturing general electrical equipment. The performance of the sector has not been satisfactory for various reasons though this is the basic sub-sector for industrial development. During the first four years of the Fourth Plan (1990-95), the production volume of this sub-sector showed downward trend because of the low capacity utilisation, low productivity, lack of investment fund in the public sector, major constraints in the private sector consisting of demand constraints, inefficient operation of existing units both in the private and public sectors, dearth of skilled and trained personnel, inadequate R&D, inadequate infrastructures, inconsistent tariff policies etc.

14.7.7 Under the current industrial policy, the growth of this sub-sector has come to depend on private sector initiative. In pursuance of the government's privatisation policies, BSEC is endeavouring to increase the efficiency of the enterprises under its control. Proposals for financial re-structuring of some of the enterprises are under consideration by the government. In the meantime BSEC has already issued public shares to the extent of 49 per cent in four of its enterprises. Again, the remaining 51 per cent shares (held by the government) of the two enterprises out of the above mentioned four enterprises have been earmarked for sale to the public. Dhaka Steel Works Ltd. along with two other enterprises (i.e. Quality Iron & Prantik Traders Ltd.) is under the process of handing over to one of the previous Bangladeshi shareholders. Besides, seven more enterprises namely, Bangladesh Machine Tools Factory (BMTF), Bangladesh Diesel Plant, Bangladesh Blade Factory, Bangladesh Can Co. Ltd. General Electric Mfg. Co. Ltd., Mehar Industries (B) Ltd. and Chittagong Steel Mills Ltd. are earmarked for outright sale. However, the disinvestment of SOEs is a continuous process and to be implemented in phases. Keeping in view the importance and prospect of steel, engineering, ship-building, electrical will be and electronic products, the objectives for the Fifth Plan of the steel and engineering sub-sector will be to:

- a. support the agricultural sector with the ultimate objective of transforming the age-old agricultural practice into a semi-mechanised one;
- b. supply capital goods and spares to various sectors of the economy, e.g., agriculture, power, gas, natural resources, transport, communication, construction as well as manufacturing sector itself;
- c. substantially reduce dependence on import of machinery and essential spares and components for jute, textile, sugar mills and electronic industries, thereby improving the balance of payments of the country;
- d. strengthen and diversify the existing export structure through production and export of engineering goods;
- e. maximise capacity utilisation of the existing capital intensive industries through necessary balancing, modernisation, replacement and expansion;
- f. provide linkage, through sub-contracting, to light engineering industries throughout the country and thus create gainful employment opportunities with special emphasis on rural employment through promotion and development of industries in rural areas;
- g. create employment opportunities through development of skills in major sectors like steel, engineering, ship-building and electronics;
- h. accelerate transfer of appropriate technology through establishment of project design and engineering company and thereby reducing dependence on expatriate consultants/experts with regard to undertaking feasibility study, project design, engineering services, etc.; and
- i. accelerate research and development activities for consolidating the industrial base as well as for the development of indigenous technology.

14.7.8 The general development strategies for the steel and engineering sub-sector as a whole are outlined as follows:

- a. consolidation and effective utilisation of existing capacities will be achieved through planned capacity expansion, product diversification, BMREs and introduction of additional working shifts;
- b. with a view to improving the balance of payments position, reducing dependence on imports and promoting self reliance, necessary programmes will be undertaken to diversify the industrial base and to set up import substitute industries for the progressive manufacture of agricultural equipment, jute textile, sugar, electrical machinery and equipment as well as their spares and accessories;
- c. measures will be taken to develop viable products which are high technology based and require venture capital for which private investment is not forth coming;
- d. a significant feature of the strategy for industrial development in general and for steel and engineering industries in particular will be to set up projects under joint-venture with the reputed local/foreign manufacturer mainly to create strong export base and thereby to improve country's balance of payments position;
- e. new capacity will be created in the areas of steel making, electrical cables and conductors and basic electronic components manufacturing; and
- f. viability of sick projects like Bangladesh Machine Tools Factory, Bangladesh Diesel Plant and other projects will be restored through improvement of management capability of the enterprises and also through phasing out of inefficient manpower for progressive transfer to the private sector.

14.8 Development Programmes

14.8.1 The government has undertaken a programme for restructuring of BSEC to make it commercially viable. To make Chittagong Steel Mills Ltd. (CSM) profitable, a restructuring proposal is under consideration of the government. All out efforts will be made to run CSM on commercial and profitable basis.

14.8.2 The other important projects which will be implemented during the Fifth Plan period are: a plant for production of 1,000 M.T. per annum of cross-linked polyethylene (XLPE) cables, a light engineering complex at a suitable location in the north-west region of the country, progressive manufacturing of buses, trucks and cars at Progati Industries Ltd., setting up of a plant for manufacturing of black plain steel sheet, an alloy and special steel manufacturing plant and a new plant to manufacture cars. At the same time the uneconomic enterprises under the corporation will be sold and some enterprises will be disinvested partially.

14.8.3 Projected Production of Major Engineering Products: Steel & Engineering Corporation mainly produces products like steel ingot, billet, corrugated galvanised iron (CGI) sheet, mild steel plate, GI/MS pipe, electric cables, fluorescent tube light, super-enamelled copper wire, ceiling fan, diesel engine, water vessel, bus, truck, jeep and motor cycle, etc. The projected production of major engineering products is given in Table 14.13.

Table 14.13
Major Products of BSEC (1996-2002)

Items	Unit	1995/96	1996/97 (Benchmark)	1997/ 98	1998/ 99	1999/ 00	2000/ 01	2001/ 02
Steel Ingot	M.T.	21898	60000	60000	60000	60000	65000	75000
Billet 110/85mm	M.T.	15197	15380	25000	30000	35000	35000	40000
Billet 50/65mm	M.T.	4624	10000	10000	10000	12000	12000	15000
C G I sheet	M.T.	5439	25000	15000	15000	20000	20000	25000
M S Plate	M.T.	3175	7500	7500	7500	7500	8000	10000
GI/MS Pipe	M.T.	6134	8000	8000	9000	10000	10000	10000
Electric Cables	M.T.	3172	3200	3000	3000	3600	3800	3850
FL. Tube Light	Mil.No	0.95	0.95	0.97	0.97	0.98	0.98	1.00
SEC Wire	M.T.	394	350	350	350	375	400	400
Ceiling Fan	Nos.	28491	60000	60000	60000	65000	65000	70000
Diesel Engine	Cyl.	604	2500	2500	3000	3500	4000	4000
Water Vessel	M.T.	2319	6200	6200	65000	6500	7500	7500
Bus, Truck, Jeep etc.	Nos.	1232	1200	1200	1225	1250	1300	1350
Motor Cycle etc.	Nos.	6700	7000	7000	7500	8000	8000	8000

14.8.4 Small and Cottage Industries: Small and cottage industries occupy a unique position in the economy of Bangladesh. Its contribution to poverty alleviation cannot be underestimated. During the Fourth Plan, against the projection of 0.4 million employment generation, 0.35 million job opportunities were created. The contribution of the sub-sector to the GDP is about 5 per cent. The SCI sector now employs 5 million people directly and indirectly which accounts for 82 per cent of the total industrial labour force. The agriculture sector is not likely to provide the required employment opportunity in the long run. The establishment of large scale industry to offer large scale employment is not considered to be a feasible option at the moment because of resource constraint. It is, therefore, imperative to develop means outside the agricultural sector for creation of employment opportunities. The SCI is an area where large scale employment opportunities exist. Compared to large and medium industries, the SCI has some inherent advantages; these are:

- a. lower capital investment;

- b. more jobs per unit of invested capital;
- c. lower capital-output ratio;
- d. lower infrastructure requirement;
- e. shorter start-up time;
- f. creation of micro entrepreneurial talent;
- g. lower consumption of energy;
- h. less environmental risk; and
- i. stimulation of personal savings and promotion of agro-industrial linkages.

14.8.5 Keeping in view the industrial and socio-economic policies of the government, the major objectives of SCI during the Fifth Plan are :

- a. to reduce unemployment through generation of new employment opportunities, especially for the rural people;
- b. to increase the income of poor people by self-employment through indigenous resources and technology;
- c. to generate employment through entrepreneurship development;
- d. to meet the local demand for essential commodities;
- e. to discourage influx of the rural people to the urban areas through rural industrialisation;
- f. to encourage geographical dispersal of industries and ensure balanced regional development;
- g. to promote sub-contracting linkages among the various types of large, medium and small scale industries;
- h. to encourage production of export-oriented and import-substitute products through promotion of small agro-based industries; and
- i. to increase the contribution of SCI sector to GDP.

14.8.6 In order to achieve these objectives of the SCI, the following strategies will be followed :

- a. to assist the SCI entrepreneurs through rendering pre and post investment promotion and extension services;
- b. to develop and improve efficiency of SCI entrepreneurs including women entrepreneurs through management training programmes;
- c. to obtain optimum utilisation of existing capacity through measures for balancing, modernisation, rehabilitation and expansion (BMRE) of existing industries;
- d. to assist and promote local industries with comparative advantage through tariff rationalisation and appropriate fiscal measures;
- e. to encourage growth of linkage industries and subcontracting, agro-based and agro-support industries, export oriented and import substitute industries, engineering, electrical and electronics industries;
- f. to extend credit facilities to the SCI entrepreneurs;
- g. to develop the quality of the SCI products;
- h. to develop marketing facilities of the SCI products;
- i. to strengthen co-ordination among the agriculture and others related sectors;
- j. to diversify the industrial activities in the new potential areas;
- k. to promote joint venture with local and foreign collaboration; and
- l. to take appropriate measures for ensuring optimum utilisation of the facilities created in the existing industrial estates; establishment of any new industrial estate, though being generally discouraged, will only be allowed if justified by regional needs.

14.8.7 In view of the objectives and strategies set forth the following projections have been made for the SCI sector in the Fifth Plan:

- a. to increase the SCI sector's contribution to GDP from 5 per cent to 7.5 per cent; and
- b. to create employment opportunities for 0.478 million people.

14.8.8 Programmes: In order to achieve the above objectives a comprehensive programme for development of small and cottage industries has been proposed. This programme can be classified into two types - public sector programme and private sector programme. An outlay of Tk.1,089.89 million has been envisaged for the public sector, while Tk. 125,246.97 million is earmarked for private sector investment. Of this, credit requirement has been estimated at Tk.12,800 million including a foreign exchange component of Tk.6,144.4 million during the Fifth Plan period for setting up small and cottage industries in the private sector.

- a. **Public Sector Programme:** In the public sector a number of projects will be implemented during the Plan period through investment of Tk.1,089.89 million. Out of these investment projects, 12 are spill-over projects and the rest will be new projects. Under technical assistance one project is a spill-over project. Public sector programme aims at providing infrastructure facilities including common facilities, dyes and chemicals, credit facilities, training to the entrepreneurs, extension services and research, market promotion and also self employment facilities for the people. Besides, some new projects such as development of salt industry in Khulna-Satkhira region, Women Entrepreneurship Development (4th phase), Skill Development Centre at Gopalganj will be established during the Plan period. Bangladesh Small and Cottage Industries Corporation (BSCIC) has been constantly monitoring the utilisation position of developed industrial plots in the existing industrial estates. It also takes appropriate measures to expedite allotment process whenever there is a genuine need. Construction of any new industrial estate will be undertaken only in response to a clearly demonstrated demand for it.
- b. **Private Sector Programme:** In the private sector a programme of Tk.125,246.97 million is proposed for investment. The objective of the private sector programme is to encourage establishment of small and cottage industries in various important areas. These are: agricultural tools and equipment, affixation pumps, motors and other equipment, fertiliser and insecticides, dyes and chemicals, leather and rubber products, rural transport and transportation equipment, sports good and toys, food, fruits and vegetables, preservation and processing of semi-intensive shrimp culture, fish, poultry and cattle feed, cotton spinning, textiles, handloom, hosiery and silk products, machine tools, electrical and electronics equipment and goods, spares and accessories, intermediate products, dairy supplies and services etc. Also priority will be given to the development of rural, cottage and handicrafts industries.

14.9 Benchmark Production and Terminal Year Projection for Major Manufactures

14.9.1 Benchmark production of major manufactures and projection of production for the terminal year of the Fifth Plan are presented in Table 14.14.

Table 14.14
Projected Production of Major Industrial Output During
Fifth Plan Period

Items	Unit	1996/97 (Base Year)	2001/2002 (Terminal Year)
Urea	000 M.T.	2,049.81	2,363.00
T.S.P/S.S.P	000 M.T.	104.18	220.00
Paper, Pulp and Newsprint	000 M.T.	70.00	124.20
Cement	000 M.T.	107.30	233.00
Yarn Production	Million KG	113.00	522.00
Cotton Yarn	Million KG	75.71	349.74
T.C.& Others	Million KG	37.29	172.26
Fabrics Production	Million Metre	1,163.00	3,651.00
Cotton Cloth	Million Metre	779.21	2,446.17
T.C. & Others	Million Metre	383.79	1,204.83
Fabrics for Garments	Million Metre	210.00	1,614.00
Cotton Fabrics	Million Metre	140.70	1,081.38
T.C. & Others	Million Metre	69.30	538.62
Jute Textiles	000 M.T.	435.00	500.00
Hessian	000 M.T.	139.20	160.00
Sacking	000 M.T.	252.30	290.00
C.B.C.	000 M.T.	43.50	50.00
Sugar	Million M.T.	0.14	0.23
Spirit	000 Litre	2,500.00	4,000.00
Bus, Truck & Car	Nos.	1200	1350
Motor Cycle	Nos.	7000	8000
Diesel Engine	Nos.	750	4000
Steel Ingot	000 M.T.	21.90	75.00

14.10 Manufacturing Sector Outlay During Fifth Plan

14.10.1 The Fifth Plan provides an outlay of Tk.310,569.86 million for investment in the manufacturing sector. About 96 per cent of this outlay (i.e.Tk.298,776.16 million) is expected to be in the private sector and the residual 4 per cent is earmarked for the public sector. Outlay for the public sector will be utilised mainly for promotional and support services for the private sector, providing the equity share in case of joint ventures between the public and private sectors as well as in establishing industrial undertakings in those areas where the private sector will not be forthcoming. During the execution of the Plan if the private sectors response is inadequate investment in the public sector may have to be made in critical areas such as chemical fertiliser, chemicals etc.

14.10.2 The tables 14.15 and 14.16 show agency wise tentative public sector investment outlay and sub-sector wise private sector investment outlay respectively during the Fifth Plan period.

Table 14.15
Public Sector Investment Outlay for Fifth Plan
(at 1996/97 prices)

(in million Taka)

Agency/sub-sector		Spill-over projects	New Projects	Total Investment	
A.	Investment	Amount	Amount	Amount	%
	Bangladesh Chemical Ind. Corpn.	1,040.00	3,883.37	4,923.37	41.75
	Bangladesh Steel & Engg. Ind. Corpn.	150.00	212.00	362.00	3.07
	Patent, Design & Trademark	-	4.00	4.00	0.03
	National Productivity Organisation (NPO)	-	6.70	6.70	0.06
	Bangladesh Sugar & Food Ind. Corpn.	-	297.00	297.00	2.52
	BEPZA	500.00	560.48	1,060.48	8.99
	BFIDC	-	6.26	6.26	0.05
	Bangladesh Small & Cottage Ind. Corp.	1,000.00	89.89	1,089.89	9.24
	BITAC	-	31.79	31.79	0.27
	BFDC (Bangladesh Film Dev. Corpn.)	-	6.26	6.26	0.05
	BIM	10.00	4.85	14.85	0.13
	Department of Printing & Stationery	20.00	15.67	35.67	0.30
	BJMC	30.00	121.20	151.20	1.28
	Department of Jute	150.00	31.30	181.30	1.54
	Bangladesh Jute Research Institute	-	40.58	40.58	0.34
	BTMC	150.00	138.76	288.76	2.45
	BHB (Bangladesh Handloom Board)	500.00	34.85	534.85	4.54
	Bangladesh Sericulture Board	27.00	58.10	85.10	0.72
	Department of Textiles	1,060.00	255.00	1,315.00	11.15
	Sub-total (A) :	4,637.00	5,798.06	10,435.06	88.48
B.	Other Outlay:	115.80	1,242.84	1,358.64	11.52
	Total (A+B)	4,752.80	7,040.90	11,793.70	100

Table 14.16
Private Sector Investment Outlay During Fifth Plan Period
(at 1996/97 prices)

(in million Taka)

Sl. No.	Sub-sector/Group	Outlay							
		Large & Med.		Small		Cottage		Total	
		Allocation	%	Allocation	%	Allocation	%	Allocation	%
1.	Food & Allied Industries.	11,544.07	6.65	16,461.44	14.12	1,274.55	14.71	29,280.06	9.80
2.	Textile Products.	51,199.23	29.50	40,302.55	34.57	2,463.32	28.43	93,965.10	31.45
3.	Jute Products and Allied Industries.	1,903.11	1.10	641.20	0.55	84.92	0.98	2,629.23	0.88
4.	Forest Products and other Agro-based Industries.	3,804.97	2.19	2,867.93	2.46	1,274.55	14.71	7,947.45	2.66
5.	Paper, Board, Printing & Publishing and Paper Converting & Packaging.	7,673.89	4.42	4,196.97	3.60	169.82	1.96	12,040.68	4.03
6.	Tannery, Leather and Rubber Products	9,502.85	5.53	3,427.52	2.94	424.56	4.90	13,444.93	4.50
7.	Chemical, Pharmaceutical & Allied Industries.	40,332.93	23.24	13,162.16	11.29	254.74	2.94	53,749.83	17.99
8.	Glass, Ceramic & other Non-metallic Mineral Products.	5,129.52	2.96	1,014.27	0.87	339.65	3.92	6,483.44	2.17
9.	Engineering, Electrical & Electronics Industries.	14,403.36	8.30	15,890.19	13.63	2,123.67	24.51	32,417.22	10.85
10.	Service Industries (Warehousing, Transportation, Construction, etc.)	15,354.75	8.85	11,564.98	9.92	-	-	26,919.73	9.01
11.	Trade & Industries Promotion:	209.14	0.12	-	-	-	-	209.14	0.07
12.	Misc. Industries	12,381.37	7.14	7,053.24	6.05	254.74	2.94	19,689.35	6.59
	Total	173,529.19	100	116,582.45	100	8,664.52	100	298,776.16	100

14.11 Sub-sectoral Investment Outlay

14.11.1 Projected Investment Outlay for the Private Sector Textile Industry: The estimated investment requirement for creation of new capacity in spinning, weaving, dyeing

and finishing, export-oriented RMG sub-sector and other textile industry is estimated at Tk.93,965.10 million and shown in the Table 14.17.

Table 14.17
Projected Investment in Private Sector Textile Industry During Fifth Plan Period

(in million Taka)

Textile Sub-sector	1997/98	1998/99	1999/2000	2000/2001	2001/2002	1997-02
A. New Capacity Creation						
Spinning	9,105.55	9,195.25	9,305.10	9,129.80	8,913.57	45,649.27
Weaving	5,625.10	5,205.35	4,923.20	4,712.20	4,410.52	24,876.37
Dyeing & Finishing	2,712.85	2,203.15	2,512.85	2,610.15	3,056.03	13,695.03
RMG	776.33	785.25	809.25	710.40	623.00	3,704.23
Others *	717.35	718.55	683.85	732.10	588.35	3,440.20
Total (A)	18,937.18	18,707.55	18,234.25	17,894.65	17,591.47	91,365.10
B. BMRE						
10 Textile Mills	200.00	150.00	-	-	-	350.00
Specialised Textiles	350.00	325.00	325.00	325.00	325.00	1,650.00
Total (B) :	550.00	475.00	325.00	325.00	325.00	2,000.00
C. Handloom & Sericulture						
Handloom	120.00	120.00	120.00	120.00	120.00	600.00
Total (C) :	120.00	120.00	120.00	120.00	120.00	600.00
Total (A+B+C)	19,607.18	19,302.55	18,679.25	18,339.65	18,036.47	93,965.10

* New capacity creation in other textile industry.

14.11.2 Investment Outlay in Public Sector Textile: The present policy of the government is to privatise public sector textile mills in phases. In pursuance of this policy, 10 textile mills under BTMC were laid off. Among these laid off mills, 7 were sold to private entrepreneurs and 6 of these were handed over to them. The remaining 3 laid off mills are in the process of sale through tenders. Another 11 textile mills from the remaining 30 mills and one engineering workshop under BTMC will be privatised immediately. Until all the mills are privatised BTMC will operate the profitable mills. In view of this, new spindles are being added to 10 BTMC mills under BMRE projects. Another 4 mills will be brought under BMRE programme during the Fifth Five Year Plan period. Besides, Ministry of Textiles (MOT), Bangladesh Handloom Board (BHB), Bangladesh Sericulture Board (BSB), and Department of Textiles (DOT) will carry out promotional activities by implementing several development projects. The proposed outlay for public sector agencies under the Ministry of Textiles is shown in Table 14.18.

Table 14.18
Projected Investment in Public Sector Textile Industry During Fifth Plan Period

(in million Taka)

Public sector	1997/98	1998/99	1999/2000	2000/2001	2001/2002	1997-2002
BTMC	40.20	62.00	66.00	75.36	45.20	288.76
BHB	76.60	102.60	157.40	137.10	61.15	534.85
BSB	19.20	16.20	15.90	16.30	17.50	85.10
DOT	398.65	335.10	326.25	152.25	102.75	1,315.00
MOT	35.60	32.80	4.84	5.25	4.75	83.24
Total	570.25	548.70	570.39	386.26	231.35	2,306.95

14.11.3 At present there are 31 textile mills in the public sector. Most of them are very old and technically out-dated to produce good quality yarn and grey fabrics. All the public sector textile mills are running at loss due to some inherent problems like low capacity utilisation, irregular repair and maintenance, lack of managerial efficiency, excess manpower, high cost of production, etc. Thus replacement of machinery to increase production and meet needs for the export quality fabrics is essential for increased value addition and employment generation for RMG.

14.11.4 Investment Outlay for Jute Industry: In order to achieve the objectives and goals of the Fifth Five Year Plan for jute manufacturing industries under the purview of the Ministry of Jute, an investment outlay of Tk.3,064.57 million at 1996/97 prices has been provided for; of this Tk.435.34 million has been projected for the public sector and Tk.2,629.23 million for the private sector. Agency wise financial outlay for public and private sectors in jute industry including spill-over and new programmes has been shown in Table 14.19.

Table 14.19
Projected Outlay of Jute Industry During Fifth Plan Period

Agency	On-going Projects	New Projects/Programmes	Total Jute Industry
	Amount	Amount	Amount
(in million Taka)			
A. Public Sector			
1. Ministry of Jute	56.00	6.26	62.26
2. Bangladesh Jute Mills Corporation	30.00	121.20	151.20
3. Department of Jute	150.00	31.30	181.30
4. Bangladesh Jute Research Institute	-	40.58	40.58
Sub-Total (A)	236.00	199.34	435.34
B. PRIVATE SECTOR			
1. Bangladesh Jute Mills Association	-	1,200.00	1,200.00
2. Bangladesh Jute Spinners Association	-	717.77	717.77
Sub-total (B)	-	1,917.77	1,917.77
C. Small & Cottage Industries.	-	711.46	711.46
Total (A+B+C)	236.00	2,828.57	3,064.57

14.12 Total Investment Outlay Under Ministry of Industries: An outlay of Tk.6729.60 million including Tk.2,200.00 million for spill-over projects and Tk.4,529.60 million for new projects has been made in the public sector under the Ministry of Industries. Agency wise outlay is mentioned in Table 14.20.

Table 14.20
Public Sector Investment Outlay of Agencies under Ministry of Industries
(1997-2002)

Name of Corporation/ Agency	Outlay for Spill-over Projects	Outlay for New Projects	Total Outlay
(in million Taka)			
Public Sector Agencies			
BCIC	1,040.00	3,883.37	4,923.37
BSEC	150.00	212.00	362.00
BSFIC	-	297.00	297.00
BSCIC	1,000.00	89.89	1,089.89
BITAC	-	31.79	31.79
BIM	10.00	4.85	14.85
NPO	-	6.70	6.70
Patent Office	-	4.00	4.00
Total	2,200.00	4,529.60	6,729.60

14.13 Investment and Employment Target of EPZs: During the Fifth Plan implementation of the policy packages will be closely reviewed and monitored and necessary support services will be provided to attract investors with the ultimate objective of generating more employment opportunities in EPZ areas and also to boost up export. The projections that have been made for the Fifth Plan, with this end in view, are shown in Table 14.21.

Table 14.21
Expected Investment and Employment in EPZs by 2001/2002

Zones	No. of Industries	Investment (million US dollar)	Employment (nos.)	Yearly Export (million US dollar)
Chittagong EPZ	110	350	50,000	600
Dhaka EPZ	90	300	40,000	500
Gazipur EPZ	150	400	60,000	700
Mongla EPZ	100	300	40,000	500
North Bengal EPZ	90	300	40,000	700
Total	540	1,650	230,000	3,000

Source : Bangladesh Export Promotion Zone Authority (BEPZA)

14.13.1 At the end of Fifth Plan 540 industrial units with a total investment of \$ 1,650 million are expected to be established and 230,000 jobs are expected to be created. The yearly expected export at the terminal year of the Plan is estimated to be \$ 3 billion.

14.14 Investment Outlay: An outlay of Tk. 1060.48 million including Tk. 500.00 million for spill over projects and Tk. 560.48 million for new projects has been provided in the Fifth Plan for the EPZ sub-sector.

14.15 Trade and Export Promotion: Within the broad framework of the export development strategy, the main objectives of the export sub-sector are as follows :

- a. to develop marketability of exportables through product diversification and quality improvement;
- b. to establish backward linkage with export oriented industries and service sectors towards utilisation of more local materials;
- c. to attract increased number of entrepreneurs for setting up of export oriented industries and encourage them through incentive packages;
- d. to expand and consolidate existing markets and also create new markets for Bangladeshi exportables; and
- e. to further narrow down the gap between export earning and import expenditure through achievement of export targets.

14.15.1 In order to achieve the aforementioned objectives, the following strategies will be pursued:

- a. remove procedural and regulatory bottlenecks incompatible with the promotion of exports;
- b. provide progressive policy support comparable with those in other competing countries to enable Bangladeshi exporters to be on a sound footing in international trade;
- c. strengthen and improve institutional framework for providing better services to the exporters and the export oriented industries;
- d. improve supportive infrastructure services to improve efficiency and for smooth functioning of export related activities;

- e. adopt appropriate human resource development programme to improve entrepreneurial and managerial capabilities to boost production and marketing; and
- f. formulate and implement programmes to broaden and diversify the range of exportables.

14.16 Allocation for Trade and Export Promotion and Privatisation Programme: In order to achieve the objectives and to implement the programmes of the sub-sector during the Fifth Plan (1997-2002) an outlay of Tk.1,358.64 million has been made. Agency wise investment projection is shown in Table 14.22.

Table 14.22
Other Outlay for Trade Promotion Services

Name of Agencies	Total (in million Taka)
Export Promotion Bureau	1,087.86
Tariff Commission	1.44
Board of Investment	10.00
Ministry of Commerce	3.13
Privatisation Board (Cabinet Affairs Division)	41.25
Industries Division, Planning Commission.	12.25
Ministry of Jute	62.26
Ministry of Textiles	83.24
Ministry of Industries	3.13
Sadharan Bima Corporation	1.58
Statistics Division	12.50
Bangladesh Standard Testing Institute	40.00
Grand Total	1,358.64

14.16.1 Development of industries in the Fifth Plan will be a challenge for the private sector. If this challenge is successfully met, in the Fifth Plan period, the private enterprise will be the trail blazer in lifting the economy from the syndrome of poverty and unemployment in the next two plan periods.

CHAPTER XV

ENERGY

15.1 Introduction

15.1.1 Energy is essential for promoting living standards. It is a pre-requisite for economic growth and technological progress. In Bangladesh, per capita generation of electricity in 1995 was only 92 kwh which is lower in comparison to that in neighbouring countries. In view of the prevailing low generation and consumption of energy, efforts should be made to develop this sector in such a way that the needs of all sectors can be met adequately, efficiently and economically.

15.1.2 Electricity demand grew at an average rate of 11 per cent per annum during 1972-94; per capita generation increased from 15.6 kwh in 1973 to 92 kwh in 1995. Notwithstanding, the progress made to date, only about 15 per cent population have access to electricity.

15.2 Review of Past Development

15.2.1 During the War of Liberation, power installations suffered extensive damage. As a result, at the worst case, peak demand dropped to 30 MW from the pre-liberation level of 225 MW (1970). So, after independence the immediate problem was rehabilitation of power supply. By the end of 1972-73, a rehabilitation and development programme was undertaken in the First Five Year Plan (1973-78). However, because of the shortage of fund the programme was carried over to the Two Year Plan (1978-80). Several projects, initiated before the Liberation War were completed and a number of new projects were undertaken during the periods. As a result, installed generation capacity increased to 822 MW from 545 MW, while the peak demand rose to 462 MW from 222 MW.

Table 15.1
Power Development During 1972-96

Items	1972	1973	1975	1980	1985	1990	1995	1996
Installed Capacity (MW)	550	608	752	822	1,141	2,352	2,908	2,908
Effective Generation (MW)	469	455	557	625	1,018	1,834	2,133	2,105
Maximum Demand (MW)	183	222	396	462	887	1,509	1,970	2,087
230 kV Transmission Line (Km)	-	-	-	-	179	250	419	419
132 kV Transmission Line (Km)	828	828	1,395	1596	1,971	2,235	2,469	3,017
66 kV Transmission Line (Km)	167	167	167	167	167	167	167	167
Distribution Line(Km) (33 kv & below)	9,010	9,686	17,003	20,256	34,796	69,731	103,540	121,817
No. of Consumers	254,584	277,884	403,518	529,660	848,152	1,670,137	2,766,765	3,090,829
Per Capita Generation (kwh)		15.6	22.9	27	46	70	92	95

15.2.2 To reduce the gap between demand and generation capacity, the Second Plan (1980-85) undertook a rapid expansion programme. The most important achievement during this period was the construction of the East-West electrical inter-connector which enabled the transfer of gas-based low cost power from the east to the west. Five power generation plants having a total installed capacity of 330 MW were completed during this period. But generation capacity still lagged behind the demand. The main constraint to the expansion of power supply was shortfall of resources coupled with a huge system loss and a slow response to tariff adjustment against rising fuel cost. By the end of the Second Plan, the system loss stood at 37.5 per cent. An investment programme of Tk. 14,370 million at 1979/80 prices was undertaken. The actual investment was Tk. 20,970 million at current prices. The Second Plan also pursued a policy of substituting imported fuel by natural gas. A significant progress was made in this direction. By the end of 1984/85, total number of electricity consumers stood at about 964,000 compared with 522,000 in 1979/80. Table 15.1 shows the progress of power development in the country during 1972-96.

15.3 Overview of Fourth Plan

15.3.1 Ensuring supply ahead of demand is the ideal situation in case of electricity for meeting manufacturing, irrigation, commercial and domestic needs of any economy. However, it was not possible to do so in Bangladesh. Against a peak demand of 1640 MW in 1990/91 and 1970 MW in 1994/95, the installed capacity was only 2352 MW and 2908 MW respectively. The operational capacity (2133 MW) was again interrupted by occasional power outages owing to fluctuations in gas pressure, transmission and distribution faults. These caused enormous losses to industrial production and commercial activities. Irrigation suffered relatively less due to its use of diesel power and electricity supplied by REB in off-peak hours.

15.3.2 Electricity generation, transmission and distribution require large financial investment. Although Bangladesh has considerable gas reserve and promising potentials, due to high system loss, large account receivables, poor management and inability to rationalise tariff rate and introduce other reforms, concessional loan for the power sector from the multilateral development partners was not available in the Fourth Plan period. Consequently, needed investments for generation, transmission and distribution of electricity could not be made during 1990-95. Hard term suppliers' credit and inadequate government resources made it possible to add only about 581 MW of generation capacity in the following power plants during the Fourth Plan Period:

a.	Raozan (Chittagong) Power Plant (1st unit)	210 MW
b.	Sylhet Combined Cycle Power Plant	90 MW
c.	Baghabari Power Plant	71 MW
d.	Ghorashal Power Plant (5th unit)	210 MW

15.3.3 However, due to non-completion of scheduled rehabilitation of some power stations, generation capability decreased by 271 MW and about 11 MW capability was retired during the period. The net capacity increase was thus 299 MW. In addition, reduced gas supply caused shut-down of some power stations resulting in lower operational supply of electricity.

15.3.4 Organisational changes were made in the area of transmission and distribution of power in the country with BPDB entrusted with generation, transmission and distribution in urban areas, DESA with distribution of electricity in the greater Dhaka area and REB with distribution in the rural areas. Power generation and distribution was opened to both local and foreign private investments. To this end, a Power Cell was created to facilitate private sector investment in electricity production and distribution. A Rural Power Company (RPC) was set up for generation and supply of power exclusively to the REB. Concrete results of these measures are expected during the Fifth Plan period.

15.4 Fourth Plan Targets and Achievements

15.4.1 The Fourth Plan was formulated with a public sector allocation of Tk. 64,500 million at 1989/90 prices for the power sector. This allocation was inadequate in relation to the physical targets set in the Plan document. Due to shortage of both local and external resources, the Plan allocation as well as Plan targets had to be revised. The revised allocation was Tk. 45,360 million at 1989/90 constant prices against which Tk. 67,480 million was spent at current prices. Major targets as well as the achievements during the Plan period are shown in Table 15.2.

Table 15.2
Targets and Achievements of Power Sector During Fourth Plan

Agency	Particulars	Actual Position in 1989/90	Fourth Plan Target	Achievement	
				New Addition during Fourth Plan (1990-95)	Cumulative Position in (1994-95)
BPDB	Installed Capacity (MW)	2,352	2,878	581	*2,908
	Capability (MW)	1,834	2,743	581	**2,133
	Transmission line (km) 230kv, 132 kv, & 66 kv	2,503	3,151	552	3,055
	Grid Substation capacity (MVA) 230kv, 132kv & 66kv	4,150	2,621	2,369	6,519
	Distribution line km (33 kv & below)	30,256 (Excluding DESA)	36,734	4,437	34,693
	Consumer connection (No.)	850,438	1,050,000	225,296	1,075,734
REB	Distribution line km	35,333	61,188	29,853	65,186
	Electrified village (Number)	8,545	14,530	7,939	16,484
	Consumer connection (No.)	495,565	962,962	679,006	1,174,571
DESA	Transmission line (km) 132kv	221	-	104	325
	Grid Substation Capacity (MVA)	433	-	874	1,307
	Distribution line km	5,511	6,765	1,995	7,506
	Consumer connection (No.)	324,134	570,000	192,326	516,460

* 2352 MW+581 MW new - 25 MW retired/standby = 2908 MW

** 1834 MW+581 MW new - 11 MW retired - 271 MW derated/decrease for maintenance & rehabilitation = 2133 MW

15.5 Operational Performance During Fourth Plan

15.5.1 Load demand : The forecast peak demand of 2,485 MW for the terminal year of the Fourth Plan could not be met due to shortage of available generation capacity. The peak demand served by the end of the Plan period was 1970 MW. This gave an annual growth rate of 4.8 per cent.

15.5.2 Energy generation : Energy generation could not reach its target. The targeted generation in the Plan period (1990-95) was 55,735 GWh and the achievement was 46,962 GWh (84 per cent). The achievement in the final year of the Plan period was 10,806 GWh against a target of 13,577 GWh. Because of shortage of available generation capacity as stated earlier actual demand could not be met.

15.5.3 Energy sale : Electricity sales also remained at a low level due to high system loss and for want of adequate generation throughout the period. The energy sale in the final year (1994/95) of the Fourth Plan was 8,371 GWh (82 per cent of target) against a target of 10,183 GWh.

15.5.4 System loss : The system loss in BPDB (including DESA) and REB was 41.11 per cent and 16.27 per cent respectively in the first year (1990/91) of the Fourth Plan. The system loss of DESA in 1991/92 was 35.55 per cent. The combined system loss envisaged in the Fourth Plan was 25 per cent. To reduce the system loss some measures such as creation of Dhaka Electric Supply Authority, introduction of incentive/punishment scheme to improve overall performance and introduction of new commercial operation system were taken. These

measures brought some improvement, but not up to the expectation. The system loss of BPDB, REB and DESA came down to 22.54 per cent, 15.04 per cent and 30.00 per cent respectively in June 1995. These figures are based on generation/purchase and sale of energy by individual entities. In June 1995, BPDB's gross generation was 10,806 million units and sale was 8,371 million units. Purchase and sale by DESA in the same period were 4,162 and 2,913 million units respectively, and by REB 1,199 and 1,018 million units respectively. This warrants considerable improvement in this area.

15.5.5 System imbalance : System balance could not be ensured during the Fourth Plan. Because of non-availability of loan from development partners, the on-going projects suffered. No new power projects (except those under suppliers' credit) could also be started and the scheduled rehabilitation programme of some existing power stations could not be undertaken. The expansion and distribution system as envisaged in the original Plan document also slowed down. Some surplus generation capacity could not be utilised fruitfully due to bottlenecks in the grid-stations/sub-stations and shortage of gas supply.

15.5.6 System reliability : Five Power stations with a total generation capacity of 581 MW were put into operation during the Plan period. A few units were also put into operation after rehabilitation in the terminal year. Still there was shortage of generation capacity. Consequently, load-shedding was resorted to. The annual load-shedding duration ranged from 113 hours in 1991 to 763 hours in 1995. The total load-shedding over the Plan period was 2,844 hours (6.49 per cent of total duration of the Plan period), i.e., on an average about 24 days per year. The reason for load shed of DESA was tremendous load growth in the industrial and commercial sectors. As a result, the system reliability during the Plan period was not satisfactory.

15.6 Power Sector Reforms

15.6.1 An inter-ministerial working group was constituted on the 3rd February, 1993 to review the necessity and feasibility of private investment (along with public sector) in the power sector. It transpired to the working group that mere private investment in power generation is not the solution for the power sector to come out of the whole gamut of problems and deficiencies in the sector. Given the magnitude of the inefficiencies and the sector's large capital requirement, the working group felt that there was a need to undertake basic reforms to address fundamental problems in the sector. The working group reviewed operational, structural and other deficiencies of the sector, examined various options with regard to reforms and emphasised the necessity for private investment and participation on an equal footing in the power sector and finally recommended the reform programme to be undertaken.

15.6.2 Institutional issues : Power generation and its supply have remained a state monopoly. The government owns, operates and regulates the power sector entities. This has sometimes resulted in overlapping and undemarcated responsibilities with lack of accountability in terms of sector entities, operational performance and service standards. As a result, the performance of the utilities remained far from satisfactory.

15.6.3 The responsibilities for generation, transmission and a large part of distribution of electricity are integrated and vested in the same authority. This makes it difficult to identify the areas of poor performance. All policy decisions/approvals involving planning and installation of additional plants, recruitment of personnel, pay and allowances, major procurement and rehabilitation are taken by the administrative ministry. Both BPDB and

DESA carryout execution. Opening up generation for the private sector, keeping transmission and distribution facilities in the public sector does not really attract private investment.

15.6.4 Management issues : Major impediments to BPDB's and DESA's efficient operations include lack of management and commercial independence and an unclear definition of the corporate structure and responsibilities.

15.6.5 Lack of accountability and discipline among the employees of BPDB and DESA are major constraints. Rivalry of trade unions affiliated to different political parties makes the environment even more difficult in BPDB and DESA. Incentive/punishment schemes have been introduced in both the entities to improve the situation but the results remain yet to be seen and marked.

15.6.6 The performance of management of PBS(REB) has been better. This can be partly attributed to transparent operating procedures that were designed before the formation of the organisation. There is no labour union in REB/PBSs. There is no incentive for good performance and also no punishment for the poor performers as the PBS is based on cooperatives.

15.6.7 Financial and economic issues : The present tariff level is low in relation to the financial requirements of the operating entities. BPDB's present average tariff is only about 61 per cent of the long run marginal cost (LRMC). Further, both PDB and DESA provide implicit subsidies to the PBSs through a bulk supply tariff which is about 52 per cent of LRMC. All these adversely affect the financial viability of the utilities. Some categories of consumers enjoy low tariff at the cost of those in the productive sector.

15.6.8 Since the power supplying entities have turned to be financially non-profitable because of inadequate tariffs, high system loss and low collections, investment from own resources as well as from the development partners has become insignificant. The fund requirements in the power sector are large but there are competing demands on government resources constraining public investment in this sector. During the Fourth Plan period, the estimated investment need was Tk. 69 billion at 1990 constant prices, against which the allocation was only Tk. 45 billion. The investment requirement in power sector (both public and private) during the Fifth Plan period is estimated at Tk. 117.36 billion at 1996/97 constant prices.

15.6.9 Technical issues : Power supply is constrained by shortage in generation capacity and inadequate transmission and distribution system. The problem has been compounded by the shortage of gas supply. As a result, BPDB has to shed loads during peak hours through out the country.

15.6.10 REB was created to extend distribution of electricity to the rural areas through PBSs. However, in absence of a clear-cut demarcation of service areas, problems have arisen in the transfer of 33/11 kv sub-station lines and consumers from BPDB and DESA to the PBSs. Further, in areas served by PBSs, there are still 'pockets' of urban centres that are still served by BPDB/DESA.

15.7 Operational Performance During 1995/96 and 1996/97

15.7.1 During the period of July '95 to June '97 no new generation capacity was added to the system, that is the installed capacity remained at 2908 MW, the same as of 1994/95. The Barisal- Patuakhali 132 kv line (37 km) was energised during this period. A total of 2366 km distribution line (33 kv, 11 kv & below) was added to the system raising the length of the

distribution line to 37,059 km through implementation of various distribution projects. The consumer number in BPDB system increased to 1,210,132 in June 1997 from 1,075,734 in 1994/95.

15.7.2 Load shedding continued during the period of 1995/96 and 1996/97 due to shortage of available generation capacity. For this, actual peak demand could not be supplied. As per PSMP of 1995 the projected peak demand was 2419 MW in 1996/97. But the peak demand supplied was only 2114 MW (10.07.1996). During this period load shedding varied from a minimum 10 MW to a maximum 674 MW. System loss in BPDB system decreased marginally. During 1995/96 and 1996/97 the ADP allocation and (provisional) expenditures for BPDB were as follows:

Table 15.3
ADP Allocation to and Expenditure of BPDB During 1995/96-1996/97

Fiscal Year	(in million Taka)			
	Revised ADP	Allocation	Expenditure	(provisional)
	Total	Project Aid	Total	Project Aid
1995/96	5,929.5	2,770.2	7,433.0	3,599.4
1996/97	6,201.7	2,000.4	4,790.4	1,597.6

15.8 Need for Major Reforms

15.8.1 BPDB has been trying for the reduction of system loss for the last 10 years which persisted between 41 and 31 per cent. BPDB was reorganised and DESA was created for performance improvements but desirable results have not been achieved because DESA was created without addressing the fundamental institutional deficiencies. Although there have been some improvements, it is not expected that desirable results can be achieved and sustained without major reforms in the power sector.

15.8.2 The objectives of the proposed power sector reform programme will be to:

- a. achieve commercial characteristics and efficiency in the power sector so as to reduce system loss, attain financial viability in order that it no longer requires subsidies;
- b. increase production and distribution of electricity for the vast majority of the population of Bangladesh which is yet unserved and to meet the growing demands of industry, commerce and agriculture;
- c. increase the operating efficiency of the existing public sector entities through greater competition, managerial autonomy and accountability and full commercialisation/corporatisation;
- d. improve the reliability and quality of the existing power supply system; and
- e. create an environment which will attract private capital and entrepreneurs, both domestic and foreign, to supplement public sector investments and initiatives in improving the performance of the sector.

15.9 Options for Reforms

15.9.1 Cost centres : The recent successful experiences in many countries offer a variety of options for reforms starting with the establishment of separate cost and/or profit centres within the existing utilities for commercialisation and corporatisation, and eventually, to complete privatisation. Along with it, it is also possible to contract out specific activities of the utility to private entrepreneurs (e.g. meter reading, billing, collection, routine and periodic maintenance, etc.) or to offer long-term franchises to manage and operate some substantial

portions of the utility's assets (e.g., a generating plant, a portion of the distribution network, etc.). It is essential that regardless of ownership (public or private), the utility has complete, detailed and up-to-date information on the cost of owning and operating the various parts of its business. No reform is possible without the establishment of separate cost centres for all identifiable and separable parts of the utility.

15.9.2 Unbundling : Once a decision is taken on the establishment of the cost centres, the next set of options to look at will be the structure of the utility (also known as unbundling). The utilities can be restructured (or unbundled) along functional lines with generation, transmission and distribution being operated by separate entities. For example, BPDB can be restructured into separate entities - one handling generation, another operating the transmission system, and a separate and independent company responsible only for distribution. This has recently been introduced in the UK. Only in high state of development, this system can work. Alternatively, distribution can be handled by four zones within the BPDB while DESA and REB/PBSs can continue to operate the distribution system in their respective areas. In this event, rationalisation of distribution entities will be needed. PBSs may operate as they are doing now under their area boards. A further alternative will be to separate the generation and transmission functions from distribution and operated by a single company (eg; Thailand). The principal advantage of restructuring along functional lines will be in appraising cost of generation, transmission and distribution separately which can be reflected in contracts between the functional entities. In addition, if the power sector is structured around functional areas, it will attract private capital to one or more of these functions where the expected returns will be high or the risks relatively low. For instance, while the private entrepreneurs may not like to invest in the existing utilities as a whole, they may wish to invest in new generation facilities. It is assumed, however, that an enabling investment environment which includes a detailed and transparent legal and regulatory framework will be in place to encourage and attract private investment. Investments by the private sector will allow the government to divert funds to meet other socially pressing objectives.

15.9.3 Following the decision to establish cost/profit centres and restructuring the entities along functional lines, the logical next step will be to corporatise the new entities. For each new functional entity, a company can be formed as a public limited company with a clear demarcation of the roles and responsibilities of the government (ownership), the board of directors (policy and monitoring), and the management of the company (operations). The board members should be appointed for fixed terms (with a possibility for renewal). Some of the Board members, including the chairman, should be from the private sector and compensated properly in accordance with private sector practices. The board should appoint the senior managers of the company and delegate to them full managerial autonomy for their day-to-day operations. Through performance contracts, the board (and through them the managers) should be held accountable for efficient operations.

15.9.4 Corporatisation is normally a preparatory step for increased private participation. While there are many ways to achieve this, the most common one can be through the sale of shares in the company. The advantage of this, at least from the government's standpoint, is that while the government continues to retain control of the companies, private capital is mobilised to support the government's development objectives for the sector. However, in order to attract private capital in this manner, it is essential that a capital market exists and that these companies are properly managed and earn a reasonable return on their investments. Another frequently used method for increasing private participation is to contract out specific

activities of the utility to private entrepreneurs or to offer long-term franchises to manage and operate some portions of the utility's assets.

15.9.5 With successful corporatisation and gradual increase in private participation, the final step to be considered in the reform process is the full privatisation. For an existing utility, this will mean an outright sale of its assets. For expansion of the system, this can take several forms such as build-own-operate (BOO) scheme, hire/purchase agreements, etc.

15.9.6 An important point to consider, prior to starting the reform process, is the need to create an appropriate and transparent regulatory system. It should preferably be in place prior to the unbundling exercise so that the system grows along with the implementation of the reform process, while facilitating the same.

15.10 Recommended Reform Programme

15.10.1 In order to overcome the constraints encountered in the viable/desirable operation of the power sector and to achieve the objectives enumerated above, various options to reforms can be considered. Options for reform will be concentrated on the following areas:

15.10.2 Restructuring of DESA : The corporatised entity should be endowed with appropriate management and financial autonomy and commercial independence so that accountability and monitoring of performance can be ensured and improved.

15.10.3 The new company should have its own terms and conditions of employment and have the right to select employees. The present employees of DESA who do not get employed in this restructured company should be provided with appropriate severance package.

15.10.4 Restructuring of BPDB : BPDB should be restructured along the functional lines. In the first phase, the functions of generation and transmission should be separated from those of distribution of electricity and two separate corporatised entities, one for carrying out generation and transmission functions and the other for carrying out distribution functions in those areas that are now being served by BPDB, should be established. These two (new) public limited companies should be formed under the existing Company Act and the ownership should remain with the government. These new companies will have the same features as those of the company to be created out of DESA as described above. In the longer term, generation and transmission functions may also be needed to be separated.

15.10.5 Rural electrification : The rural electrification programme through the co-operatives has been fairly successful and, therefore, should continue without changing the structure. However, its area of operation should be rationalised with that of the proposed distribution companies so that duplication of investment can be avoided, services can be improved and the utilities may become viable. The recent government decisions on the demarcation of service areas of BPDB, REB and DESA should be reviewed and the following criteria may be considered for rationalisation of distribution areas:

- a. The supply area should be continuous and one utility should not have pockets of supply areas within another utility, so that optimum utilisation of distribution facilities may be ensured and manpower for operation and maintenance may be reduced.
- b. The supply area should be of sufficient size to facilitate planning of efficient distribution network.
- c. The utilities/distribution units should have a good consumer mix.

15.10.6 Regulatory framework and change of laws : With the present undifferentiated role of the government as owner, operator and regulator, there is a little regulation with respect to sector entities performance standards and service codes. On the other hand, the tariffs are not adequately related to economic and financial requirements. Recommendations have been made to separate the operation on commercial basis and to attract private investment. In order that the consumers are ensured of an adequate supply of electricity at a reasonable cost, the operational safety is ensured and the power utilities remain economically and financially viable, an independent regulatory body should be established. To begin with, the regulatory body may be attached with the Ministry of Energy and Mineral Resources (MEMR). The regulatory tasks should include, among others, the following :

- a. framing of rules and codes of practice for operation and maintenance;
- b. establishment of performance standards and uniform system of accounts;
- c. approval of construction standards for safe installation;
- d. approval of tariffs;
- e. ensuring enforcement of industry standards, public safety, as set forth under (a), (b) and (c) as well as demand management; and
- f. issuing exclusive service franchises to the distribution companies, either public or private, and license to private generators.

This will require the existing laws creating the BPDB and DESA as well as the Electricity Act to be amended.

15.10.7 Tariff regulation : Tariffs are inadequately related to economic and financial criteria. BPDB/DESA are financially burdened with the cost of providing subsidised electricity supply to PBSs, the size of lifeline block is excessive, and their tariff adjustment process is ad hoc and non-transparent.

15.10.8 To support the development of a viable and self-sustaining power industry in Bangladesh, tariff setting needs to be rationalised, which can be achieved by having a regulatory body with the clear terms of reference. This regulatory body (initially attached to MEMR) will set tariffs in accord with explicit economic and financial criteria. Specifically, the following aspects will need to be addressed :

- a. **Tariffs :** In view of the possible formation of separate generation, transmission and distribution companies, a tariff study should be carried out on long run marginal cost basis to find out the cost of supply at different voltage levels, at various geographical locations and consumer classes. The tariff study will also design the structure including retail tariffs considering social aspects but avoiding distortion as much as possible. The size of the present lifeline block is too large. It should be either reduced to restrict its application to poor consumers or totally abolished.
- b. **Transparency :** To improve financial discipline, transparency in financial relations and to measure the true financial relationships between the generation/ transmission/ distribution companies, subsidies between various categories of utility companies should be made more explicit. Eventually, any such subsidy to PBSs or for meeting public service obligations, if justified, should be funded by the government.
- c. **Indexation :** To reduce uncertainty and ensure predictability, the regulatory body may consider indexed rate regulation. One major advantage of indexed regulation is that, after the initial or base prices are established, adjustments occur virtually automatically in accordance with some defined index (e.g., fuel prices, currency values, discounted inflation rate, etc.) that have been approved by the regulatory body.

15.10.9 Private participation : In view of the large capital requirement in the power sector and limitations of government fund, private sector investment will be necessary for rapid development of the power sector. In order to attract private sector participation, actions on the following fronts should be taken:

- a. **Generation :** Specific power generation projects identified at the national level will be offered for private investment. Competitive tenders on the basis of Build-Own-Operate (BOO) or Build, Operate and Transfer (BOT) will be invited. The government may also negotiate with the private parties who will express interest in investing in generation projects.
- b. **Distribution :** The government will invite private parties, including co-operative societies of the utility sector employees, to participate in the distribution of power in one or more localities on an experimental basis. In doing so, careful evaluation of various proven modalities for participation (e.g., franchise, contract, etc.) will have to be made.
- c. **Contracting of services :** The government will consider contracting out some functions currently performed by BPDB and DESA, particularly meter reading, billing and collections.
- d. **Wheeling arrangement :** The electricity generated by private generators may be supplied to the grid system of the Generation and Transmission Company on agreed terms and conditions. The private/public generators may also sell directly to large consumers through the transmission and distribution facilities of other distribution companies provided the facilities are adequate and the commercial terms and conditions of such wheeling arrangements are acceptable to all concerned.

15.10.10 Some of the steps already initiated/implemented towards privatisation and reform programmes are briefly outlined below:

- a. **Implementation of power sector reform :** Power sector reform programmes are being implemented. Some of the proposed reform programmes have already been initiated by the utilities. Power Cell has already prepared the Private Sector Power Generation Policy of Bangladesh which was approved by the government. The Cell has also prepared standard security package document, that is, Implementation Agreement (IA), Power Purchase Agreement (PPA) and Fuel Supply Agreement (FSA) for Independent Power Projects. A study on re-structuring of the power sector has also been completed and a final report with recommendation of reforms proposed to be undertaken has been prepared. A new tariff structure based on long run marginal cost of supply in the restructured electricity industry has been proposed to be implemented.
- b. **Power grid company of Bangladesh :** PGCB, a subsidiary company under BPDB has been set up. Initially, it will build, own and operate the Comilla-Meghnaghat-Rampur and Meghnaghat-Haripur 230 kV transmission line and related grid substations. In course of time, all transmission assets of BPDB will be transferred to PGCB.
- c. **Dhaka electric supply company :** DESC, a new distribution company has been set up under Dhaka Electric Supply Authority. DESC will own and operate assets for the distribution network initially at Mirpur and in course of time all of DESA's distribution assets will be transferred to DESC.

- d. **Meghnaghat power company** : MPC has been formed. Installation of a 300-450 MW Combined Cycle Power Plant by private sector power investors on BOO basis is under process.
- e. **Rural power company** : RPC has been formed under Rural Electrification Board. Initially, a 60 MW Gas Turbine Power Plant will be installed and operated by RPC at Mymensingh.

15.11 Fifth Plan

15.11.1 In order to achieve an annual economic growth rate of 7 per cent, alleviate poverty and realise desirable socio-economic and human development, it is essential that the minimum electricity growth rate is maintained at a factor of 1.5 of GDP growth. Adequate and reliable supply of electricity at a reasonable cost is a pre-requisite to attain this goal. Hence, there is a great need and urgency to expand the electrification programmes. It is recognised that the pace of power development has to be accelerated in order to achieve the overall economic development projections of the country and avoid looming power shortages. Specially, for investment in expansion of industry, power development has become prerequisite.

15.12 Objectives

15.12.1 The development objectives of the power sector in the Fifth Plan period will be to :

- a. facilitate economic development through adequate and reliable supply of electricity at economic cost;
- b. ensure reliable and uninterrupted power supply through maximum utilisation of the existing capacities, adding generation capacities by optimising energy mix and balanced expansion of transmission and distribution network;
- c. reduce the cost of supply through implementation of least cost expansion plan and efficient system operation with a view to making the electricity available to the consumers at a reasonable price;
- d. make the utilities self-reliant through efficient management, reasonable restructuring of electricity tariff and favourable financial arrangement so that reasonable portion of capital expenditure can be financed out of internally generated funds;
- e. improve management and engineering capability of the utilities;
- f. raise resource management efficiency, reduce system loss and improve financial performance of the power sector;
- g. ensure environmentally sound, sustainable power development with minimum damage to environment;
- h. encourage private sector participation in power development;
- i. expand power supply in the rural areas to boost rural economy and thereby alleviate poverty and ensure women's participation in the rural areas; and
- j. give special attention to meet the power shortage in the north-western region and to line up power connection to deep tubewells installed for agricultural use.

15.13 Strategies

15.13.1 These objectives will be achieved through a package of policies, strategies and necessary institutional reforms which, *inter alia*, will include:

- a. generation, transmission and distribution of more electricity at least cost through optimisation of fuel mix; to this end special attention will be given to use coal deposits;

- b. augmentation of the capacities through rehabilitation of power plants, transmission lines and grid substations;
- c. balancing of transmission and distribution networks to match generation capacity and extension of transmission and distribution networks to connect growth centres, both urban and rural, and to meet irrigational needs;
- d. addition of more 230 kv and 132 kv transmission lines for efficient transfer of power from generating stations to the major load centres;
- e. encouraging private investment in power sector, particularly as joint venture or on BOT/BOO principles through various incentive packages; to meet immediate need in 2 or 3 strategic locations public sector generation will be taken up if private investment is found lacking;
- f. generation of nuclear power as an appropriate option for a reliable, economic, safe and long term generation mix in consideration of the inadequacy of indigenous fuels for meeting electricity demand on a medium to long term perspective; Rooppur Nuclear Power Project has been included in the public sector development programme for many years, it has not been possible to implement it mainly due to constraints of financing; though the initial cost of a nuclear plant is high (estimated to be about 40 to 50 billion taka for a 600 MW plant), its low operation and maintenance cost makes the average generation cost comparatively cheap; efforts will be made to start implementation of the project with a 600 MW nuclear power plant during the Fifth Five Year Plan; the private entrepreneurs will also be encouraged to participate in the implementation of the project;
- g. dissemination of various forms of renewable energy technologies like solar, wind and mini-hydro, specially in rural areas and other remote and isolated location of the country;
- h. development of biogas: biogas technology is believed to have good potentials as a source of energy in Bangladesh. BCSIR has developed technologies though their dissemination has been very limited; during the Fifth Plan, efforts will be made to popularise the use of biogas technology in the country;
- i. introduction and dissemination of improved cooking stove: replacement of traditional stoves by an improved version having better energy conversion efficiency will help conserve biomass in the rural areas; moreover, use of the technology in the urban area, will help reduce consumption of fuel wood, thereby reducing deforestation; technologies are available and efforts will be made to popularise them during the Fifth Plan;
- j. application of new and renewable energy technologies; and
- k. making appropriate institutional, fiscal, legal and administrative arrangement for the successful implementation of the above strategies.

15.14 National Energy Policy

15.14.1 The objectives of the National Energy Policy (NEP) are to:

- a. provide energy for sustainable economic growth so that the economic development activities of different sectors are not constrained due to shortage of energy;
- b. meet the energy needs of different zones of the country and socio-economic groups;
- c. ensure optimum development of all the indigenous energy sources;
- d. ensure sustainable operation of the energy utilities;
- e. ensure rational use of total energy sources;

- f. ensure environmentally sound sustainable energy development programmes causing minimum damage to environment; and
- g. encourage public and private sector participation in the development and management of the energy sector.

15.15 New and Renewable Energy Technologies

15.15.1 Biomass : Electricity coverage being only 15 per cent of the population and natural gas reaching only 3 per cent of the households, biomass is the major source of energy in Bangladesh. Over three-fourths of the total population of the country depend on biomass for cooking, crop drying and winter heating. So in terms of population coverage, biomass stands most important of all energy sources. Biomass includes trees, crop wastes, cow dung etc. Unfortunately, Bangladesh does not have adequate supply of biomass due to low forest coverage, a large portion of the country being affected each year by natural calamities like flood, cyclone and river erosion. The present forest coverage is only around 17 per cent. However, using standard tree density criteria, the forest coverage comes down to only 7 per cent compared to 25 per cent which is usually considered to be the average a country should have to maintain energy and environmental balance. As response to this serious problem, social forestry, homestead forestry and linear planting (along roads, embankments and railways) have been given high priority in the public expenditure. The policies, programmes and projects undertaken to augment the supply of biomass have been mentioned in the forestry sub-sector. It can briefly be said here that afforestation on all available land has been a social movement in Bangladesh for over a decade and it can be said that, by and large, it has been successful. If the current trend can be sustained, it will largely offset the deficit in the supply of biomass for the majority of the population who are critically dependent on it. Along with social forestry, popularisation of improved cooking stove, bio-gas plants, and utilisation of solar energy, especially in the offshore islands, will contribute to both conservation of energy through more efficient use of biomass and increasing the supply of energy through solar power. Power sector policies, programmes and projects have, therefore, been aimed at this direction. The dominant role of biomass in the energy supply mix of the country is likely to continue.

Improved bio-mass fuel burning devices have been introduced in order to save bio-mass fuels and to improve the environmental conditions surrounding the energy consuming devices. Projects/programmes for improved stoves for urban cooking, rural cooking and improved devices will be undertaken for bio-mass fuel consuming industries. Necessary support and incentives will be made available to the entrepreneurs from the credit institutions. Action research programme, training programme, extension and dissemination programme will be provided. In addition to that, promotion of awareness about bio-mass fuel conservation and improved devices will be encouraged.

The government has laid emphasis on the development and augmentation of rural and renewable energy during the different Plan periods. Agencies like Rural Electrification Board (REB) and the Local Government Engineering Department (LGED) are involved in dissemination of various types of renewable energy technologies. The Department of Forest and other extension agencies are also involved in planned plantation with a view to not only improving the situation of forest coverage of the country but also in augmenting the supply of biomass on a long term perspective. The Grameen Bank and the NGOs like BRAC, Proshikha and others are involved in deployment of available technologies through their respective networks. REB as well as a number of private sector enterprises are involved in marketing of solar photo voltaic (PV) based technology.

Augmentation of bio-mass supply through intensive afforestation in especially selected locations like reserved forest as well as village and community forestry programmes has gained momentum. These programmes are being implemented by the related extension agencies. If sustained, this will have a significant impact not only on maintaining an acceptable level of forest coverage of the country, but also facilitate sustainable supply of fuel wood. Under energy conversion till date, 417 bio-mass plants including 198 of BCSIR have been set-up by various agencies. An elaborate programme of bio-gas plants technology diffusion was envisaged during the Fourth Plan period. REB and associated agency, under the technical guidance of BCSIR, will undertake the responsibilities for setting up of additional 5000 bio-gas plants in selected areas of the country.

15.15.2 Mini-hydropower : According to the report of the Working Committee on Mini-hydropower Generation of Bangladesh, there is potential for producing 10 GWh of electricity annually. Concrete steps will be undertaken during the Fifth Plan period to realise this potential.

15.15.3 Solar energy : The average daily solar radiation varies from 5.05 kWh/sqm in winter to 8.76 kWh/sqm in summer. At present solar energy is mainly used as a convenient and low cost means of drying crops, fish and salt. Some photo voltaic units have been installed in different parts of the country mainly for demonstration. Capital cost for solar photo voltaic technology for the generation of electricity being costly, its prospects are to be ascertained for specific end uses and locations. One immediate positive step to encourage use of solar energy will be to allow duty free import of photo voltaic cells.

15.15.4 Wind power : Average wind speeds in the country are low (less than 3 m/s). There is a prospect for wind power generation using low speed wind turbines in selected areas and for specific end-uses. In the Fifth Plan period a pilot project will be undertaken to use wind to generate power in a selected local area.

15.15.5 Tidal and wave power : The prospects of tidal and wave power in coastal areas need to be assessed. A feasibility study will be undertaken in the Fifth Plan period to find out ways and means to use tidal and wave power.

15.16 Load Management

15.16.1 The annual load factor of the national electricity grid is about 57 per cent. The characteristics of demand is such that the evening peak is very sharp. In order to improve the performance of the system, reduce investment as well as to rationalise the energy use, there is a need to undertake appropriate measures for the management of loads. Recently, the government has adopted some load management measures to reduce electricity consumption during peak hours such as early closure of commercial shops, prohibition of using irrigation pumps during evening peak hours, etc. These measures, however, are yet to be implemented fully.

15.17 Load Forecast

15.17.1 Power being the basic infrastructure for higher level of economic growth, the high demand forecast of 4051 MW by the terminal year of the Fifth Plan has been envisaged. To meet this demand, public sector investment will not be adequate. Considerable private investment will be needed. However, since other sectors of the economy cannot grow at the projected rate without necessary power supply, the public sector financial outlay may have to be adjusted upwards in the course of Plan implementation should there be inadequate response from the private sector for power generation. On the basis of the High Forecast, the

projected peak demand, generation capability and reserve margin up to FY 2002 are shown in the Table 15.4.

Table 15.4
Projected Maximum Demand for Power During Fifth Plan

Year	Maximum Demand (MW)	Generation Capability (MW)	Firm Capacity (MW)	Reserve Margin (MW)	Reserve Margin as per cent of Max. Demand (%)
1997/1998	2806	2813	2352	7	-
1998/1999	3109	3464	2983	355	11.42
1999/2000	3447	4342	3681	895	25.96
2000/2001	3736	5156	4196	1420	38.00
2001/2002	4051	5739	4779	1688	41.67

15.17.2 This projected maximum demand of 4051 MW will call for total generating capability of 5739 MW including reserve margin of 1688 MW by 2001/2002. A total of 3319 MW generation capacity is planned to be added to the system raising the installed capacity to 5875 MW. This will need an investment of around Tk. 100,000 million which can only be possible if the private sector power investors participate in power generation. Following completion of 8 projects already undertaken by the public sector (SL. 1-5, Table 15.5), capacity addition in the public sector during the Plan period will be 1389 MW only. This will leave a capacity gap of 1930 MW. This gap is expected to be filled up by private sector/ joint venture investments. In case, the private sector does not come forward in time, alternative ways and means will be devised in the shortest possible time to meet the anticipated demand.

Table 15.5
Projected Capacity Addition to Power Generation During Fifth Plan

Sl. No.	Name of the Power Plant	Fuel	Capacity MW	Expected date of commissioning
A	PUBLIC SECTOR			
1.	210 MW Ghorasal Thermal Power Station Extension (6th unit)	Gas	210	March, 1998
2.	210 MW Siddhirganj Thermal Power Station	Gas	210	March, 2000
3.	109 MW Haripur Combined Cycle Power Plant	Gas	109	March, 2000
4.	60 MW Shahjibazar Gas Turbine	Gas	60	FY 2000
5.	210MW Chittagong Thermal Power Station (2nd unit)	Gas	210	September 1997
6.	Sylhet 90 MW Combined Cycle Power Plant (2nd unit)	Gas	90	FY 2001
7.	Barapukuria 300 MW Coal Based Thermal Power Station	Coal	300	FY 2001-2002
8.	East Zone 2×100 MW Gas Turbine	Gas	200	FY 2001-2002
	Sub total : A		1389	
B.	PRIVATE SECTOR/ JT. VENTURE			
1.	4×100 MW Barge Mounted Power Plant	Oil/Gas	400	FY 1999
2.	Mymensingh 60 MW Gas Turbine	Gas	60	FY 1999
3.	100 MW Baghabari Gas Turbine	Oil/Gas	100	FY 2000
4.	Meghnaghat 450 MW Combined Cycle Power Station	Gas	450	FY 2001
5.	Haripur 360 MW Combined Cycle Power Station	Gas	360	FY 2000
6.	210 MW Khulna Thermal Power Station	F. Oil/Gas	210	FY 2002
7.	350 MW Power plants in west zone	Gas	350	FY 2000-2002
	Sub total : B		1930	
	Grand total : (A+B)		3319	

15.18 Physical Programme

15.18.1 The physical programme for the Fifth Plan includes 35 on-going projects and 30 new projects (excluding TA projects). The ongoing projects and some of the new projects will be completed and the benefit will be obtained during the Plan period. A 300 MW Barapukuria Coal Based Thermal Power Plant, a 300-450 MW Meghnaghat Combined Cycle Power Plant and four 100 MW Barge Mounted power plants will be taken up for implementation during the Plan period.

15.18.2 With the implementation of these projects, necessary additional facilities for generation, transmission and distribution will be created during the Plan period. Installed generation capacity is expected to go up from 2908 MW (June, 97) to 5875 MW at the end of the Plan period against the projected power demand of 4051 MW. This will have a reserve margin of 1688 MW (41.67 per cent) over the maximum demand. The generation programme includes 10 on-going projects and 5 new projects. Scheduled completion of the public sector projects will add 1389 MW of electricity by the terminal year of the Plan.

15.18.3 In the Fifth Plan, 627 km of 230 kv line and 847 km of 132 kv transmission line including 166 km second circuit stringing have been proposed. The Plan aims at expansion of 230 kv and 132 kv transmission lines and substations to remove bottlenecks in the transmission system. Transmission projects included in the programme have been tested by computer simulation for load flow, voltage drop and stability. The programme includes 3 on-going projects and 9 new projects. All on-going projects and 9 new projects are scheduled to be completed during the Plan period. A list of the Transmission Projects to be implemented during the Fifth Plan is shown in Table 15.6.

Table 15.6
Power Transmission Projects to be Implemented During Fifth Plan

Sl. No.	Name of the Project	Line Length (km)	Expected Year of Completion
1.	Rehabilitation, Renovation & Augmentation of Grid System incl. Ashuganj-Jamalpur 132 kv Second Circuit.	166	1999
2.	Comilla-Chittagong 230 kv Transmission Line Project.	150	1999
3.	Comilla-Meghnaghat-Rampura & Meghnaghat-Haripur 230 kv Transmission Line & National Load Despatch Centre.	110	2000
4.	Khulna-Ishurdi-Bogra-Barapukuria 230 kv trans. line & 132 kv line from Barapukuria to Saidpur & Rangpur.	367	2001
5.	Three Transmission Lines	95	
(a)	Thakurgaon-Panchagarh 132 kv single ckt line.	45	2000
(b)	Naogaon-Joypurhat 132 kv single ckt line.	40	2000
(c)	Chuadanga-Jhenaidha-Magura 132 kv single ckt line	73	2000
6.	Tangail-Madhupur-Jamalpur 132 kv single ckt line.	100	2001
7.	Dohazari-Cox's Bazar 132 kv second ckt stringing.	88	2001
8.	Chandpur-Comilla 132 kv second ckt stringing.	70	2000
9.	Kabirpur-Tangail-Shirajgonj 132 kv tr. line	85	2000
10.	Comilla-Bara Aulia 132 kv transmission line	140	1999
11.	Barisal-Bagerhat-Khulna 132 kv transmission line	110	2000
12.	Bhandaria-Mothbaria-Patharghata 132 kv transmission line	55	2000

15.18.4 Like the transmission sub-sector, thrust has been given to the distribution sub-sector in the Fifth Plan. Importance has been given to town distribution projects as well as the rural electrification projects. The secondary town distribution projects aim at meeting the fast growing demand in the urban areas, improving reliability and quality of supply and reducing system loss. In the distribution programme 7 on-going projects and 3 new projects of BPDB, 11 on-going and 7 new projects of REB, and 5 on-going and 2 new projects of DESA have been included in the Plan period.

15.18.5 The physical programme for the Fifth Plan aims at achieving a transmission line of 1408 km under BPDB and 66 km under DESA, and distribution line of 5,377 km under BPDB, 50,000 km under REB and 3714 km under DESA. The details of physical projections are shown in Table 15.7.

Table 15.7
Summary of Physical Projections for Power Sector During Fifth Plan Period

Agency	Particulars	Bench Mark Position (1996/97)	Projection (Additional)	(1998-2002) Cumulative Position
BPDB	Capability (MW)	2,148	3,319	5,739 *
	Transmission line (km)			
	230 kv	419	627	1,046
	132 kv	2,506	781	3,287
	Substation capacity (MVA)	6,505	1,940	8,445
	Distribution line (kv) 33 kv and below	37,059	5,377	42,436
	Consumer connection (No.)	1,250,000	3,00,000	1,550,000
REB	Distribution line (km)	85,111	50,000	135,111
	Electrified village (No.)	20,520	12,000	32,520
	Consumer connection (No.)	1,712,439	1,000,000	2,712,439
DESA	Transmission line (km)	511	66	577
	Distribution line (km) 33 kv & below	6781	3,714	10,495

* 2,148+3,319 (new) - 531 (net increase through maintenance & rehabilitation.) - 259(rtd.) = 5,739 MW.

15.19 Financial Programme

15.19.1 An investment outlay of Tk. 88,361 million including project aid of Tk. 58,275 million both at 1996/97 prices has been made in the public sector during the Fifth Plan for the implementation of the physical programme for the power sector. Agency wise break up of this allocation is shown in Table 15.8.

Table 15.8
Agency-wise Public Sector Financial Outlay For Power Development
(at 1996/97 prices)

(in million Taka)

	Name of Agency	Local Currency	Project Aid	Total
A:	Spill over projects			
	BPDB	7290	17648	24938
	REB	2891	6505	9396
	DESA	3466	5080	8546
	Sub-total	13647	29233	42880
B:	New projects			
	BPDB	7555	17683	25238
	REB	6731	8410	15141
	DESA	2153	2949	5102
	Sub-total	16439	29042	45481
	Total (A+B)	30086	58275	88361

15.19.2 In addition to ADP financing, resources will be raised through bonds to finance implementation of projects by PDB, DESA and REB.

15.19.3 The private sector is also expected to make substantial investment (to the tune of Tk. 29,000.00 million) both in generation and distribution of power during the Fifth Plan period. Of this amount, about 80 per cent is expected to be in generation and 20 per cent in transmission and distribution.

CHAPTER XVI

OIL GAS AND NATURAL RESOURCES

16.1 Introduction

16.1.1 Indigenous energy resources consist of known reserves of natural gas, limited hydro-electric power and traditional fuels coming from fuelwood, crop residuals and animal dung. About 55 per cent of the country's overall energy supply is in the form of traditional fuels with the balance being met by natural gas (24 per cent), imported oil and coal (19 per cent) and hydro-electricity (2 per cent).

16.1.2 The present per-capita consumption of non-renewable energy resources in Bangladesh is about 64 Kilogram of Oil Equivalent (KGOE) which is one of the lowest in the world. Per-capita energy use in KGOE is 123 in Sri Lanka, 236 in India and 267 in Pakistan. Of the total non-renewable energy consumption, about 60 per cent is derived at present from indigenous resources and the rest is met from imported petroleum and coal. Moreover, the entire reserves of exploitable indigenous primary energy resources are located in the east zone, thereby resulting in a gap in energy supply between the east and west zones. Mining of newly found coal in the west zone is expected to start by the turn of the century which will help reduce the gap partially. Of the various natural resources available, natural gas in particular :

- a. supplies primary commercial energy for electricity generation to accelerate the pace of agricultural and industrial development and reduces the kitchen drudgery at the level of individual households;
- b. helps in narrowing the deficit in the balance of payments by reducing import bill for oil, coal, etc.;
- c. mobilises resources for the national exchequer; and
- d. provides raw materials for the production of urea fertiliser and fuel for electricity generation.

16.1.3 The development of the oil and gas sector is vital for further strengthening of the national economy. Expansion of the energy sector since the 1980's is mainly attributed to increased natural gas production. Currently, natural gas accounts for about 70 per cent of the commercial energy consumption compared to about 35 per cent in 1980. The development of Bangladesh's natural gas resources has also contributed to the reduction in deforestation and to an increase in tax revenue for the government through the levies on gas sales. During 1985-1992, gas production increased at an average annual rate of about 10 per cent. It is estimated that minimum growth rate of about 10 per cent per annum in gas production will be required to meet the average GDP growth target of 7 per cent per annum during the Fifth Plan period. However, the existing gas infrastructure has limited capacity and needs to be expanded as per requirement. Additional investment is, therefore, required to enable Bangladesh to utilise its available gas reserves and to increase exploration activities for new gas and oil fields. For further long-term gas supply commitments, particularly for the planned power plants, the government is encouraging private sector participation in the oil and gas exploration activities through the Production Sharing Contract (PSC) with the International Oil Companies.

16.2 Potentials of Natural Resources

16.2.1. Natural Gas: Natural gas is currently the only indigenous non-renewable energy resource of the country which is being produced and consumed in significant quantities. Gas, the main source of commercial energy, plays an active role towards the growth of the economy. Currently, about 90 per cent of power generation is based on natural gas and the whole of the urea fertiliser requirements of the agricultural sector is met by using gas as feed stock. Natural gas output now accounts for about 70 per cent of the country's commercial energy supply. Current gas reserve (proven) has been estimated at about 22.90 TCF of which 13.60 TCF is considered as recoverable. So far 2.72 TCF has already been consumed and as of September 1996, the recoverable reserve was 10.87 TCF. New discovery in Sangu (offshore), Shahbazpur, Shaldanadi and other blocks may augment the gas reserve to several times the present reserve. This will enable generation of more electricity and setting up of new urea plants against the Bangladesh's share of the PSC's already signed. A brief description of the newly discovered gas fields is given below :

16.2.2 Saldanadi Gas Field : Saldanadi gas field is situated along the India-Bangladesh border under Kashba Thana of Brahmanbaria district. The structure was selected for exploratory/appraisal drilling after evaluation of seismic data collected during 1991/92 field season by BAPEX. Accordingly, drilling was undertaken in 1996 and a prospective gas reserve was discovered at a depth of 2,511 metres. After reviewing the data, a preliminary estimate of gas reserve was given at 0.202 TCF.

16.2.3 Shahbazpur Gas Field : Shahbazpur field is located in the central part of Shahbazpur island of Bhola district. The location was selected for exploratory drilling after evaluation of seismic data collected during 1986/87 field season. Shahbazpur well was spudded in December, 1993 and in 4 months, a depth of 3,631 metres was reached. Due to encountering of over pressure, the well had to be abandoned after flowing gas through coil tubing from interval 3,201-3,210 metres. Subsequently, it was decided to drill a side-track hole. After drilling of side-tracking hole down to 3,342 metres, commercial gas flow was ensured. Analysis of results obtained from vertical and side-track drillings indicated an in-place reserve of 0.5138 TCF.

16.2.4 Shangu Gas Field : In 1994, Bangladesh Government signed a Production Sharing Contract (PSC) with Cairn Energy and Holland Sea Search for oil and gas exploration in Chittagong and its adjacent coastal areas. The international company conducted a comprehensive seismic survey in the Bay of Bengal in 1995 and identified a prospective area of hydrocarbon reserve located 40 km away from Shangu estuary. The first well was drilled down to the depth of 3,500 metres and four gas zones were reached. Examination of two zones indicated the presence of significant amount of gas and Shangu was declared a gas field. Then the second well was drilled to estimate the gas reserve and a reserve of 0.848 TCF was determined and to exploit the gas reserve, development of the field was planned. To make it commercial, plan was prepared to drill additional production wells, construct platform and install pipelines and processing plants. After successful completion of all these activities, it is expected that the production of natural gas from this field will be possible from April, 1998.

16.2.5 Patharia Oil and Gas Exploration Well : Patharia area is located in the north-eastern part of Bangladesh under Baralekha Thana of Moulvibazar district. After evaluation of seismic data and gravity survey, the location was selected for exploratory drilling. Drilling of one exploratory well with Saudi assistance was planned during the Third Plan period.

Patharia well was spudded in 1989. The well was designed to be drilled down to a depth of 5,000 metres. However, due to several changes in casing points and hole deviation, it could reach only down to 3,438 metres. Then the drilling was terminated for deterioration of casing due to frequent reaming, slow drilling rate and risk factor in continuation of drilling.

16.2.6 Oil : Exploration activities carried out so far could not discover any significant oil deposit. The only oil deposit so far discovered in the country is in Haripur which produced a total of about 0.65 million barrels of crude oil till 1994. The oil production has since ceased because of reduction of pressure and influx of water in the oil zone. Comprehensive exploration efforts need to be mounted in this field.

16.2.7 Coal : Discovery of coal dates back to late fifties, when an exploratory oil well was drilled through coal beds in Bogra. Subsequent explorations resulted in the discovery of the Jamalgonj coal deposit at a depth of about 1,000 metres from the ground level and having an estimated reserve of more than 1,000 million tons of coal. Feasibility studies have indicated that the development of this deposit is not yet feasible under the prevailing international market price. However, with the increase in gas price, these deposits may become competitive. After evaluation of a detailed geological and geophysical survey, Geological Survey of Bangladesh (GSB) identified 13 locations in the region of greater Rangpur and Dinajpur districts as the prospective basins for coal exploration. Exploratory wells were drilled in 5 basins out of which high quality bituminous coal deposits were found in 3 basins. In addition, BHP, a foreign company, also discovered a coal reserve in one basin. In 1984/85, Geological Survey of Bangladesh located another coal deposit at Khalashpir (Pirgonj) of Rangpur district at a shallower depth (150 metres), with an estimated reserve of 450 million tons of coal. This deposit requires to be appraised in respect of its potential.

16.2.8 Besides, minable coal deposit was also discovered in Barapukuria area of Parbatipur, Dinajpur at a reasonably shallow depth (240 metres) with an estimated reserve of about 300 million tons. Based on this, a project for construction of an underground mine has been undertaken at an estimated investment of Tk. 8,873.60 million to produce an annual output of 1 million tons commencing from 2000/01. Recently, another coal deposit has been discovered by Geological Survey of Bangladesh in Dighirpara area of Dinajpur district covering an area of about 15 sq. km. As only one well has been drilled, the actual deposit of coal could not yet be determined.

16.2.9 The GSB has planned to conduct comprehensive exploration activities by the year 2000 in the following seven basins :

- a. Badargonj-II (Rangpur)
- b. Basudevpur (Rangpur)
- c. Barapukuria-I (Dinajpur)
- d. Barapukuria-II (Dinajpur)
- e. Daudpur (Dinajpur)
- f. Dongapara (Dinajpur)
- g. Shamnagar (Dinajpur).

16.2.10 Peat : Deposits of peat occur at shallow depths in different low lying areas of Bangladesh. According to the Geological Survey of Bangladesh, the reserve of dry peat is about 170 million tons. The major deposits are in greater districts of Faridpur (150 million tons), Khulna (8 million tons) and Sylhet (13 million tons). Peat requires drying before making briquettes for use as fuel. A pilot project for extraction of peat and making briquettes

was implemented by Petrobangla, but the results were not encouraging and extraction was assessed as economically not viable. However, in future, this resource may be viable as and when prices of other fuels rise.

16.2.11 Hardrock and Limestone : Hardrock was discovered by GSB in Madhyapara area of Dinajpur District in 1964 at a depth of 285 metres from surface. An agreement was signed with North Korea in 1993 for the opening of an underground hardrock mine with a target production of 1.6 million tons per annum. The hardrock mine is expected to come into operation by the year 2000/01. Madhyapara hardrock will be used for river training , heavy construction work, railway ballast, highway, etc. The granite slabs excavated from this mine can also be used as polished tiles and pavings. Presently these are imported. Considerable import substitution and increased revenue earning may, therefore, be expected from this rock. Limestone has been found at Joypurhat and some other places of Sylhet district. The production of sub-surface limestone of Joypurhat is yet to materialise.

16.3 Review of Past Performance (1973-1997)

First Five Year Plan and Two Year Plan (1973-1980)

16.3.1 The need for development of natural gas as a source of energy was recognised in the First Plan (1973-78). In this Plan, priority was given on the gas transmission and distribution related works with a view to accelerating the use of natural gas as fuel and industrial raw material. One of the objectives of the Two Year Plan (1978-80) was to accelerate the pace of exploration activities and encourage expanded use of gas, particularly as a substitute of imported petroleum. An allocation of Tk. 2,360.00 million was made during the First Plan and Two Year Plan periods for development of the sector. However, actual expenditure during the period stood at Tk. 2,870 million.

16.3.2 An intensive effort was made during this period to find new hydro-carbon sources, particularly in the off-shore areas, but with limited success. Gas deposits were found in two wells out of eleven exploratory wells drilled, of which 9 were off-shore wells drilled by the international oil companies (IOCs). Nine production wells drilled in 4 fields with an estimated production capacity of 210 MMCFD, produced only 122 MMCFD of natural gas in 1979/80. Total transmission line extended up to 224 km in 1979/80. During this period, the main physical achievement was the connection of Habigonj gas field with the Titas field by the 12" transmission line over a stretch of 56 km and initiation of gas transmission line from the Bakhrabad field to Chittagong. Total distribution line of 1,608 km was constructed and 119,400 gas connections were given upto 1979/80. Crude oil storage tanks with a capacity of 80,000 tons and refined petroleum storage tanks with a capacity of 25,000 tons were installed during 1973-80.

Second Five Year Plan (1980-1985)

16.3.3 Implementation of the Second Plan started with the objective of maximising the utilisation of indigenous natural gas and saving foreign exchange through substitution of imported fuel. The Plan envisaged to raise the supply of gas to 128 BCF in 1984/85 from 44.5 BCF in 1979/80 in order to enhance the share of natural gas in commercial energy consumption from 37 per cent in 1979/80 to 68 per cent in 1984/85. At the same time, exploration activities were geared up in search of oil and gas.

16.3.4 During the Plan period, drilling of 6 exploration wells were completed against the planned target of 9 wells. Out of these, 4 wells were found to have gas reserves. The

important developments during the period were the activation of Bakhrabad gas field to supply gas to Chittagong area and connection of this field with the Titas system by a new transmission line near Dhaka. Transmission system was expanded by 307 km altogether which enabled gas supply to rise from 44.5 BCF in 1979/80 to 94.6 BCF in 1984/85. The share of gas in commercial energy rose from 37 per cent in 1979/80 to 56 per cent in 1984/85. At the end of the Plan period, 240,000 customers were given gas connection against the target of 258,000 customers which raised the total gas connection to 359,400 customers in the year 1984/85.

16.3.5 The country continued to be entirely dependent on imported POL. The total quantum of POL product consumed during the Second Plan was 6.8 million tons at an average rate of about 1.4 million tons per year. Of this, about 70 per cent was derived from imported crude oil refined at the Eastern Refinery Ltd. (ERL) and the rest, the middle distillates like diesel and kerosene were imported. ERL also set up an LPG recovery plant with a designed capacity of 17,000 tons per annum. Production of LPG was 7,000 tons in the year 1984/85. At the end of the period, the economics of ERL were upset by the fall in world oil price. As spot purchases of POL products became cheaper, refining of crude through ERL was reduced to below 1 million tons against its capacity of 1.5 million tons. Moreover, naphtha was exported at a cheap price when some middle distillates were being imported at a higher cost. So a study was undertaken for ascertaining the feasibility of secondary conversion of some of the ERL products into more needed middle distillates. The drop in world prices, however, helped BPC to improve its financial position as the domestic prices of POL products remained unchanged and BPC was able to make up its past losses.

16.3.6 During this period, about 1,025 sq. km of geological mapping, 2,560 sq. km of geological surveys, 1,520 km of drilling and 3,000 geochemical analyses were completed. A new shallow depth coal deposit at Dinajpur was discovered as a result of geological survey during this period.

16.3.7 An amount of Tk.6,150 million (at 1979/80 prices) was allocated to the sector in the Plan while the actual expenditure amounted to Tk. 9,550 million. The excess expenditure was met from Petrobangla's own resources.

Third Five Year Plan (1985-90)

16.3.8 The Third Plan envisaged to maximise the use of natural gas to reduce pressure from fuel import bill, explore the major gas fields to assess the proven reserves, conduct exploration for oil and gas, construct transmission and distribution lines to provide additional gas to various customers, improve product-mix of Eastern Refinery and conduct survey for mineral discoveries. In order to achieve these objectives, the Plan set a target to drill 18 development/appraisal wells and 5 exploration wells for hydrocarbon and construct 3,760 km of transmission and distribution lines. It was planned that the oil consumption would be contained within 1.6 million tons in 1989/90. GSB envisaged to continue extensive geological mapping and survey works including drilling of 6 more boreholes to delineate the Barapukuria coal deposit during the Plan period .

16.3.9 During the Third Plan, 16 out of 18 planned development/appraisal wells were drilled, 2,700 km transmission and distribution lines out of planned 3,760 kms were constructed and only 2 out of 5 exploration wells were completed. During the Plan period, additional gas connections were given to 165,600 customers as against the target of 160,000. Gas supply was raised from 94.6 BCF in 1984/85 to 165 BCF in 1989/90. Oil consumption and hence the

import bill could not be contained on account of underestimation in demand projections and lagging behind of the expected substitution of diesel and kerosene through rural electrification and other programmes. The addition of a secondary conversion plant to Eastern Refinery could not even be initiated. Physical activities of GSB were almost completed which included drilling of 6 boreholes for coal exploration. Training courses to 500 professionals and technicians of BOGMC, GSB etc. were provided by Bangladesh Petroleum Institute under the Plan. The discovery of oil in sylhet gas field in December, 1986 and the discovery of a large coal field at Khalashpir, Rangpur at a depth of 250 meters in April, 1989 were two remarkable achievements during the Plan period.

16.3.10 Out of the total allocation of Tk. 13,150 million, the amount utilised was about Tk. 12,000 million during the Plan period in the public sector. Besides the public sector, Tk. 1,250 million was spent for hydrocarbon exploration by two IOCs.

Fourth Five Year Plan (1990-95)

16.3.11 The Fourth Plan was launched with the objectives of ensuring the supply of increased quantum of commercial energy mainly from indigenous resources and optimising its utilisation. The agency-wise physical targets and actual achievements were as follows :

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16.3.12 Exploration Survey and Drilling for Hydrocarbons : Intensive geophysical and geological survey were to be undertaken over discovered as well as new areas. The target was 7,500 lkm. of survey during the Fourth Plan. In effect, actual seismic survey amounted to only 1,712 lkm. with an additional 1,000 lkm of geological survey.

16.3.13 Drilling of 5 exploration wells was planned to be executed by BAPEX. In practice, no exploration drilling was completed during the Fourth Plan. The main reasons were financial constraint, non-availability of project equipment and lack of expert personnel in BAPEX. PSC partners were expected to drill at least 10 exploration wells during the Plan period. No PSC was actually made operational and no drilling took place .

16.3.14 During FFYP, 45 new production wells were targeted (net no. of wells was to be 41 as four wells were expected to be shut-off). By the end of the Fourth Plan, 42 wells were completed (net 39 wells, 3 wells were shut off). The Plan target was to have 35 wells in operation. Against this target, 33 wells were put into operation upto June, 1995, while two others came on stream shortly thereafter. Peak demand for gas was estimated to increase by 300 MMCFD to 950 MMCFD by 1994/95; in reality, peak demand was registered at 850 MMCFD by 1994/95. Annual production of gas was planned to increase from 165 BCF to 275 BCF by the end of Fourth Plan. Actual production of gas reached to 247 BCF.

16.3.15 Transmission and Distribution Line and Customer Connections : During the Plan period, some major transmission pipe lines were completed and commissioned. These included North-South Pipe Line, Brahmaputra Basin Pipeline and Pipeline to Raozan power plant. In addition, a condensate pipeline of 190 km length was completed. However, the Ashugonj-Bakhrabad pipeline suffered due to delay in financing and other complications. The target was to add 700 km transmission line by the end of the Plan period.

16.3.16 To reach the consumers, the distribution network was planned to be expanded with the addition of 2,500 km pipeline. This would bring the total distribution network to 7,500 km. In effect, distribution network under the three franchise areas increased by 2,950 km so

that the total figured at 7,950 km. Concomitant with the growth of the network, customer connections also grew rapidly. The Plan envisaged an addition of 195,000 new connections to bring the total to 600,000. Actual number of connection to customers reached 631,710 by the end of the Plan period.

16.3.17 Development Projects : During the Plan period, a total of 16 projects were completed, of which 10 were investment projects and 6 were technical assistance projects. These projects together created employment opportunity for about 800 persons during implementation and about 650 persons during operation. The oil and gas sub-sector contributed Tk. 36,000 million to the government in the form of CD/VAT, corporate tax, dividend, etc. during the Plan period.

16.3.18 Plan Allocation : Against a Plan allocation of Tk.23,980 million the actual utilisation was Tk. 15,320 million which was about 64 per cent of the Plan allocation and 80 per cent of RADP allocation.

16.3.19 Bangladesh Petroleum Corporation : BPC undertook five development projects (4 spill-over and 1 new) during the Fourth Plan involving a total investment of Tk. 5,339.90 million with a foreign exchange component of Tk. 3,121.50 million to attain improved operational flexibility and also to ensure easy availability of petroleum products at the door step of the people. During the years under review, RADP allocation was Tk. 3,381.50 million out of which an amount of Tk. 3,056.90 million was utilised. Among the five projects, three were completed as scheduled at a cost of Tk 3,609 million.

16.3.20 With the completion of BMRE of ERL, the refinery attained its original processing capacity of 1.5 million tons of crude oil per annum. Besides, a three MW steam turbine generator, a cooling tower, dolphin type oil jetty and modern fire fighting facilities were also installed to improve power generation and cooling system of the refinery and to facilitate crude reception and naphtha export. After completion of the secondary conversion plant at ERL, excess furnace oil (FO) produced in the Refinery was upgraded to High Speed Diesel (HSD) which saved foreign currency by way of import substitution of HSD.

16.3.21 Geological Survey of Bangladesh : GSB is entrusted with the responsibility of carrying out basic geological studies including geological, geotechnical and geophysical drilling, etc. in the country for the exploration of mineral resources except oil and gas.

16.3.22 The organisation already completed 3,289 sq.km mapping works including geological, geotechnical, photogeological and geochemical mapping. About 5 km of seismic, 3,312 lkm. of geophysical logging, 50 sq.km. of resistivity and 440 sq.km. of gravity magnetic survey have also been completed within this period. Two drill holes have been drilled in the Dighipara of Dinajpur and Badarganj of Rangpur district respectively and a coal field has been discovered with a good quality bituminous coal at a depth of 1,076 metres below the surface. During the Fourth Plan, GSB spent only Tk. 2.15 million against an allocation of Tk. 2.25 million for implementation of the project - Detailed Geological Exploration in Selected Areas of Bangladesh.

16.3.23 Bangladesh Petroleum Institute : BPI was established in January 1981 as a development project under the Ministry of Energy and Mineral Resources. BPI was mainly assigned to train 250 professionals annually in the petroleum sector. It imparted training over the years to professionals and technicians engaged in the petroleum sector. During the Fourth Plan period, a total of 550 persons were trained through 21 courses, seminars and workshops

on various aspects of exploration, production and development of oil and gas fields, safety and management. BPI also sent abroad 7 of its professionals on short courses and on the job training (4 to 8 weeks) and 3 of its professionals on long term courses including post graduation. It also procured books, a number of training aides and class room tools to facilitate its training activities. BPI was allocated Tk. 154.60 million out of which Tk. 113.90 million (73.69 per cent) was utilised.

16.3.24 Sectoral Allocation and Utilisation During Fourth Plan : A total of Tk. 30,250.00 million at current prices was allocated to the oil, gas and mineral resources sector, out of which Tk. 22,800 million was released through RADP. The actual utilisation was Tk. 18,936.30 million during the Plan period which was 62.6 per cent of the Plan allocation and 83 per cent of RADP allocation.

16.4 Performance During 1995/96 and 1996/97

16.4.1 The OGNR sector is highly important in determining the growth prospect of the economy. Over the two year period, the major objectives in this sector were to ensure a reliable and uninterrupted supply of commercial energy, mostly natural gas. During this period, emphasis was given on the development of the private sector in the oil and gas exploration activities mainly through Production Sharing Contract (PSC). Activities undertaken during this period related to the seismic survey, exploration, expansion of gas transmission and distribution network, development of coal and hardrock mine, etc. During this period, 564 Lkm of seismic survey was conducted and 2 exploration wells were drilled by BAPEX. Both exploration wells (Shahbazpur and Saldanadi) led to discovery of gas. During 1995/96, 15 km transmission pipelines and 575 km distribution and other pipelines were constructed. During 1996/97 fiscal year, 326 km distribution and other pipelines were laid until December, 1996. The Ashugonj-Bakhrabad pipeline (30" dia 59 km) connecting Surma basin production area and Bakhrabad franchise area was completed. Gas production during 1995/96 reached 265 BCF increasing from 247 BCF in 1994/95. Production of the same was 261 BCF in 1996/97. Remarkable achievement of these two years were the discovery of three new gas fields among which two were on-shore and one off-shore. The off-shore field was discovered by one international oil company under PSC and two on-shore fields were discovered by BAPEX.

16.4.2 An allocation of Tk. 4,534.90 million was provided through ADP for 43 projects of the sector in 1995/96. Actual expenditure during the year was Tk.4,080 million. In 1996/97 Tk.4,858.20 million was allocated to 37 development projects of the sector.

16.5 An Overview (1973-1996)

Oil and Gas Exploration

16.5.1 During the period 1973-96, drilling of 24 exploratory wells including 7 off-shore wells was completed. Individual depth of wells varied from 1,560 metre to 4,977 metre. The number of wells drilled by national organisations were 14, while ten wells were drilled by the foreign companies. National organisations discovered 7 gas fields, and one oil field. Foreign companies discovered 2 gas fields including one in the off-shore area. It may be stated that oil and gas exploration activities had been very limited. Only one well per year, on an average, was drilled in the last 23 years.

16.5.2 As far as gas fields are concerned, the exploration/discovery ratio in Bangladesh till now is 3:1 i. e. 17 gas fields were discovered out of 54 exploration wells since 1910, which is

one of the highest in the world. Reserves were estimated at 22.90 TCF of which 13.60 TCF are recoverable. Out of 17 discovered gas fields, 8 were brought into production. It is important to note that almost all the exploration activities were undertaken in the shelf area in the north eastern part of Bangladesh .

16.5.3 To expedite petroleum exploration, a new Model Production Sharing Contract (PSC) was formulated in 1988. In 1989, the area of the country was divided into 23 blocks of which 17 blocks including 6 off-shore blocks were offered to the international oil companies (IOCs) for competitive bidding. In 1993, the government announced a new petroleum policy to seek participation of IOCs in hydrocarbon exploration and production through PSC.

Production of Natural Gas Condensate and Crude Oil

16.5.4 At present gas is being produced from 8 fields, namely, Titas, Bakhrabad, Habiganj, Rashidpur, Kailashtilla, Sylhet, Narsingdi and Feni. Production from two fields, namely, Chatak and Kamta has been suspended owing to various technical reasons. Gas production increased from 23.58 BCF in 1972/73 to 292 BCF in 1996/97, while sales went up from 20 BCF in 1972/73 to 285 BCF in 1996/97. Of the total volume of sales, 46.74 per cent was consumed by the power sector, 35.57 per cent by fertiliser, 9.65 per cent by other industries including tea estates, and the rest 8.04 per cent by commercial and domestic users. Total revenue from sales of gas and gas associated fuel amounted to Tk. 11,618 million in 1993/94.

16.5.5 In 1993/94, production of crude oil from only one oil field at Haripur was 5,395 metric tons. But it decreased steadily during the last few years and was suspended in July, 1994. Current production of gas associated condensate amounts to about 1,000 barrels a day which is expected to rise to about 3,500 barrels a day when the wet gas fields of Kailashtilla and Beanibazar, Jalalabad are commissioned.

16.5.6 The present demand for petroleum products of the country is about 2 million tons of which 50 per cent is for diesel, 25 per cent for kerosene, 8 per cent for motor spirit, 10 per cent for fuel oil and the rest 7 per cent is for other minor products, whereas 1.4 million tons of refined petroleum products are produced by the only refinery of the country of which 20 per cent is diesel, 30 per cent kerosene, 15 per cent LPG and gasoline (motor spirit and naphtha) and 35 per cent fuel oil. This shows that the country has excess gasoline and fuel oil while there is a shortage of diesel and kerosene. The consumption rate of petroleum products is growing slowly but steadily at the rate of 2.5 per cent to 3 per cent per annum. Import of refined petroleum products, therefore, remains, quite essential. To meet the present and future demand for petroleum products of the country, addition to the present refinery capacity will be needed.

Transmission and Distribution of Gas

16.5.7 During the last few years, the operational networks of the transmission and distribution companies have been considerably expanded through the construction of gas pipeline and associated DRS and MRS installations. About 9,600 km of pipelines have been constructed upto June 1996 of which about 1,600 km are high pressure transmission lines.

16.6 Institutional Development

16.6.1 Petrobangla : The gas sector in Bangladesh is dominated by the Petrobangla Group consisting of eight state-owned companies responsible for the exploration, production and delivery of natural gas as well as exploration and development of oil and solid minerals including coal. The Petrobangla Group consists of the holding corporation (Petrobangla), one

exploration and drilling company, two production companies, three distribution companies and one liquid natural gas company. In 1993, the government approved the establishment of the Gas Transmission Company Ltd. (GTCL) to operate the national gas grid.

16.6.2 Bangladesh Petroleum Corporation : BPC was set up in 1976 with the objective of importing, refining and marketing of petroleum oil and lubricant products. It operates through seven subsidiary companies.

16.6.3 Geological Survey of Bangladesh : GSB, the national geoscientific organisation, established in 1962, is responsible for geological, geophysical, geochemical mapping and drilling activities related to finding out solid mineral resources in the country. It evaluates the known mineral resources, conducts studies, renders advisory services and supplies relevant information regarding hydrogeology, engineering geology, urban and environmental geology, etc.

16.6.4 Bangladesh Petroleum Institute : BPI was established in 1992 as a research and training institute with the objective of imparting training to professionals and technicians in the oil and gas sector and carrying out research works.

16.6.5 Hydrocarbon Unit : A hydrocarbon unit was established in 1994 in the Ministry of Energy and Mineral Resources to perform the activities relating to state control over government owned corporations and companies, monitoring exploration/production licences, approval of PSCs, monitoring crude oil refining, petroleum products distribution policy, fixing of price of petroleum products, preparation of budgets, all administrative matters and control of financial matters.

16.7 Major Constraints

16.7.1 The gas sector in Bangladesh is wholly dominated by Petrobangla. The sector has a large potential for increased contribution to the country's economic growth. However, a number of constraints restrict the appropriate development of the sector. The country is dependent on foreign aid. Lack of necessary capital is limiting the development of the sector. Exploration, gas field development, transmission and distribution activities are highly technical and capital intensive activities. The problem of the sector is accentuated by the dependence on expatriate consultants. In spite of providing a large number of short and long-term training, both local and foreign, to a number of technical, professional and administrative personnel in different fields of gas sector activities in the last one decade, substitution of foreign consultants by the local consultants has not been effective in sectoral planning, designing and implementation of programmes/projects. Also, there has been inadequate transfer of technology through technical assistance projects. The deficiency in the development of manpower has also been caused by inappropriate selection of trainee clientele. These have to be overcome through appropriate sectoral manpower planning.

Considerable delays in project implementation occur due to the following :

- a. too many stages of approval at different levels for appointment of consultants/contractors and procuring machinery/equipment/materials both within the government and the development partners;
- b. imposition of too many conditionalities by the donors at different stages of credit negotiation, signing of agreement and effectiveness of credit; and
- c. change in the scope of works and linking the implementation of priority projects with the conditionalities of low priority projects.

16.8 Fifth Five Year Plan (1997-2002)

16.8.1 Objectives : The main objectives for the development of oil, gas and natural resources sector during the Fifth Plan will be to :

- a. substitute imported oil by indigenous fuel, mainly natural gas, to the extent possible and feasible;
- b. meet most of increased demand for commercial energy through the development of indigenous gas;
- c. intensify exploration and appraisal activities for augmenting the hydrocarbon resources base;
- d. make a balanced development of different components of gas activities, namely, exploration, production, transmission and distribution in sync with downstream uses, etc.;
- e. involve private sector in oil and gas development activities particularly in exploration under production sharing contract (PSC), transportation and sale of gas based liquids, LPG, condensate (diesel/motor spirit/kerosene, etc.);
- f. gradually adjust gas price to its economic cost of supply in the interest of its optimal use;
- g. build a national gas grid for equitable regional distribution;
- h. conserve energy resources and help maintain the ecological balance;
- i. extract coal, hardrock and other solid mineral resources;
- j. conduct geological and geophysical surveys in order to explore and discover new sources of indigenous energy resources;
- k. strengthen research and development in the energy sector;
- l. provide cylindered liquid natural gas for the rural people; and
- m. use surplus gas for downstream activities.

16.8.2 Policies and Strategies : The following policies and strategies will be adopted for realisation of the above objectives :

- a. in order to accelerate development activities, efforts will be made to gradually involve the private sector in exploration, production, transportation and sale of oil and gas;
- b. a shift towards better mix will be made so that dependence on a single energy source like natural gas is minimised, and other energy resources are exploited;
- c. natural gas fields rich in condensate and propane/butane will be developed to reduce the import bill for oil; emphasis will be given to supply liquid natural gas to the indigenous rural people by cylinder;
- d. gas pipeline in the west zone through the Bangabandhu Bridge for effective regional balance in energy supply will be laid in;
- e. measures will be taken to use coal discovered in the west zone for electricity generation;
- f. efforts will be made to expand the gas and condensate transmission and distribution networks to the extent possible/feasible;
- g. gas supply to industrial estates will be ensured;
- h. timely maintenance of the gas production wells to avoid supply dislocation caused by sanding/water intrusion as happened in the Bakhrabad well will be ensured;
- i. conservation and economic use of natural gas will be promoted through adoption of appropriate technology and tariff measures; price of natural gas will be rationalised into economic price considering the heating value parity;

- j. extraction of hardrock and other solid minerals including thorium, uranium and beach sand minerals will be geared up;
- k. special incentive package for oil and gas exploration in the west zone will be given;
- l. efforts will be made to encourage establishment of privately owned and managed distribution companies for marketing of natural gas available from transmission pipelines to unserved urban centres;
- m. measures will be taken to establish a regulatory authority which will be manned by competent persons for licensing energy utilities, setting prices and consideration of related issues;
- n. environmental impact assessment will be made mandatory for energy development projects;
- o. dependence on external assistance will be reduced gradually by internal financing to the extent possible;
- p. a comprehensive programme of training linked with career development of professionals will be implemented;
- q. research and development activities will be increased for productivity and cost-effective advances in the energy sector;
- r. geological and geophysical activities will be geared up;
- s. measures will be taken to provide tax incentives to those entrepreneurs who will come forward to set up natural gas based industries; and
- t. international oil companies with whom PSCs have been signed for exploration of oil and gas will be encouraged to invest downstream in power generation activities, fertiliser factories, petro-chemical complex, etc.

16.9 National Programmes

16.9.1 The demand for primary commercial energy is expected to increase from 10 million ton oil equivalent (MTOE) in 1997 to 15 MTOE by 2002 showing an average growth rate of 8.57 per cent. At this growth rate, per capita primary commercial energy consumption will rise from 81 KGOE in 1996/97 to 109 KGOE in 2001/02. This increased demand will mostly be met by indigenous natural gas raising its share to 70 per cent of the total primary commercial energy consumption. The peak demand of natural gas is expected to increase from 1,100 MMCFD in 1996/97 to about 1,700 MMCFD in 2001/02 and average demand from 900 MMCFD in 1996/97 to about 1,360 MMCFD in 2001/02 giving an annual average growth rate of about 10 per cent. Endeavours will be made to put coal to use so that partial energy demand can be met from this alternate indigenous resource. To augment gas supply, both intensive and extensive exploration for hydrocarbon will be carried out aiming at adding new reserves during the period 1997-2002 in both public and private sectors and under PSCs.

16.9.2 To contain the import of oil more or less at the present level, all efforts will be made to substitute this with indigenous natural gas and coal to the extent possible and extract LPG from natural gas to reduce the import of kerosene. The import of diesel and kerosene will be further reduced by expanding rural electrification programme for irrigation and lighting. In spite of all these efforts, the import of POL is estimated to grow at an average rate of 9 per cent annually. It is expected that the consumption of POL in 2001/02 will be about 3.49 million tons compared with the consumption of 2.38 million tons in 1996/97.

16.10 Programmes in Public Sector

16.10.1 Survey/Exploration for Hydrocarbon : The geological and geophysical surveys will be intensified to discover and delineate new hydrocarbon bearing structures and to

determine the extent and potential of existing gas fields. It is expected that a total of 3,000 lkm of seismic survey and about 1,200 lkm of geological survey will be undertaken during this period. At the same time, programme of drilling 7 exploration wells will be implemented during the Plan period in the public sector. For exploration of hydrocarbon, in the private sector, particularly the multinational companies will be encouraged to invest under PSCs.

16.10.2 Production/appraisal wells : Drilling of production wells in Rashidpur/Habiganj gas fields and drilling of appraisal-cum development and workover wells in Titas fields have been planned for 1997-2002. The major work in this respect will include the drilling of appraisal and production wells in Saldanadi and Shahbajpur (2+2=4), Rashidpur (4 wells), Habiganj (4 wells), Titas (3 wells), and workover of about 10 wells together with the drilling and establishment of 480 MMCFD process plant.

16.10.3 Transmission and distribution line : A number of on-going lines will be completed and new ones taken up during 1997-2002. The major ones will include Monohardi-Narshingdi-Shiddhirgonj pipeline (59 km), Rashidpur-Ashugonj loop line (82 km), Beanibazar-Kailashtilla pipeline (23 km) and pipeline over Bangabandhu Bridge and on the west bank (80 km). In total, more than 350 km of transmission line is expected to be completed. Besides, about 2,000 lkm distribution line will be constructed in three franchise areas to supply gas to users.

16.10.4 Coal : At the present rate of growth in energy demand, partial energy demand mostly for thermal power plants beyond 2000 will be met by coal. Development of the Barapukuria coal mine is under implementation projecting a production of 1 million tons of coal per year from 2000 for 65 years. In addition, Khalashpir (Rangpur) coal deposit is being studied for possible extraction. Studies will also be undertaken to extract coal bed methane from the Jamalgonj coal deposit.

16.10.5 Hardrock : The present annual demand of hardrock is 1.5 million tons. The hardrock project is projected to yield of 1.65 million tons per annum.

16.10.6 Development of LPG / NGL : Necessary arrangements will be made for production of LPG/NGL from the wet gas fields of Sylhet region. It is expected that about 125,000 tons of additional LPG/NGL/ condensate will be produced annually by the end of the Plan period.

16.10.7 Major programmes of petrobangla : The following will be the major programmes of Petrobangla in the Fifth Plan period :

Oil and Gas Exploration Drilling	7 wells
Geological and Geophysical Survey	3,000 km
Appraisal/Development Drilling	13-15 wells
Gas Transmission Lines	375 km
Gas Distribution Lines	2,000 km

In addition to these, contingent on negotiations with the relevant oil exploration companies, additional exploration may be undertaken.

16.10.8 Bangladesh petroleum corporation : BPC's main activities will be concentrated on the completion of BMRE of the existing refinery, construction of lighterage and dolphin jetties, second crude oil distribution unit at ERL, Mongla Oil Installation and LPG import, storage, receiving, bottling and distribution facilities. In addition, a second refinery will be set up during the Plan period to meet the rising demand for POL products.

16.10.9 Geological Survey of Bangladesh : Extensive and intensive geological and geophysical surveys supported by drilling for mineral discovery, engineering, water resources and tectonic studies will be undertaken by GSB. It will also conduct research for identifying rocks and minerals and establishing rock sequence in the country. GSB will take up activities relating to the delineation of Khalashpir coal and completing its early feasibility study. A few important proposals of GSB are as follows :

Major Programmes	1997-2002
Detailed geological mapping for minerals	7,000 lkm
Research or stratigraphy	10 sections
Research and exploration for metallic deposits	200 samples
Gravity and magnetic survey	1,000 sq. km
Seismic/Resistivity survey	200 sq. km.
Drilling of exploration wells (15 Nos.)	7,000 metres

16.10.10 Gas Demand Forecast and Other Proposals : Gas demand forecast and other proposals for 1997-2002 period are given in Tables 16.1, 16.2 and 16.3 . Gas demand forecast for power generation and fertiliser production has been made on the basis of already committed projects and future demand estimated from power sector master plan (PSMP). Demand forecast for other sectors has been estimated considering historical trend of consumption (around 10 per cent per annum) by the sectors over the last ten years.

Table 16.1
Gas Demand Forecast During 1997-2002

Items	1996/97 (Benchmark)	1997/98	1998/99	1999/2000	2000/2001	2001/2002
Peak demand (MMCFD)	1100	1240	1380	1470	1550	1700
Average demand (MMCFD)	900	1000	1120	1200	1250	1360
Annual production capacity (BCF)	292	350	495	506	500	500
Annual gas supply (BCF)	285	350	410	438	455	495

Source : Petrobangla.

16.10.11 As stipulated in the energy policy, gas supply will be required to be limited to a maximum of 1,000 MMCFD or 365 BCF/Year provided significant increase in the natural gas reserve does not take place. If remarkable addition to reserve occurs, the situation may significantly improve in the coming years and the production capacity shown above may well be attainable. It is expected that from 1998/99 there will be no supply constraint and gas supply will be based on available demand.

Table 16.2
Customer-wise Average Gas Demand During 1997-2002

Sector	(in MMCFD)				
	1997/98	1998/99	1999/2000	2000/01	2001/02
Power *	540	638	680	712	766
Fertiliser	280	285	305	305	305
Domestic	70	79	84	92	102
Commercial	17	17	18	21	24
Industrial + B.F+ T.E*	95	101	113	120	163
Total	1002 (365 BCF)	1120 (410 BCF)	1200 (438 BCF)	1250 (455 BCF)	1360 (495 BCF)

Source : PSMP/GSMP * Brick Fields + Tea Estates

Table 16.3
Field-wise Appraisal/Production Wells During 1997-2002

Locations	1996/97 (Benchmark)		2001/2002	
	Production wells	Wells under operation	Production Wells	Wells under operation
1. Titas	11	11	14	14
2. Bakhrabad	8	8	8	8
3. Habiganj	6	6	10	10
4. Feni	2	2	2	1
5. Belabo	1	1	1	1
6. Meghna	-	-	1	1
7. Sylhet	1	1	2	2
8. Kailashtilla	4	3	4	4
9. Rashidpur	4	4	8	8
10. Bianibazar	-	-	2	2
11. Fenchugonj	-	-	2	2
12. Jalalabad #	-	-	2	2
13. Semutang #	-	-	1	1
14. Sangu #	-	-	4	4
15. Saldanadi	-	-	2	2
16. Shahbazpur	-	-	2	2

Source : Petrobangla, # Under PSC Investors

16.10.12 Financial Outlay (1997-2002) : A total of Tk 26,039.60 million at 1996/97 prices has been projected under the Plan for development of oil, gas and natural resources in the public sector. In addition, Tk. 8,726.07 million is expected to be invested by the private sector. Agency- wise break-up of the financial outlay is as follows:

Table 16.4
Public Sector Outlay for Development of Oil Gas and Natural Resources in Fifth Plan
(in million Taka)

Agency	Allocation
Petrobangla	19,990.60
BPC	5,978.70
GSB	70.30
Total	26,039.60

Table 16.5
Projected Physical Attainments in Oil Gas and Natural Resources in Fifth Plan

Sl. No.	Description	Base Year 1996/97	Proposed 2001/02	Addition	Remark
1.	Peak Demand for Gas (mmcf/d)	1,100	1,700	--	
2.	Annual Supply of Natural Gas (bcf)	285	365/400	115	Subject to gas reserve
3.	Customer (Nos)	650,000	790,000	140,000	--
4.	Exploration wells for Hydrocarbon	55	77-82	22-27	Subject to new PSC operations
5.	Production wells (Operation)	36	64	28	Both Public & PSC
6.	Transmission lines (km)	1,600	1,975	375	--
7.	Distribution lines (km)	8,000	10,000	2,000	--
8.	Geological & seismic survey (lkm)		7,000	7,000	3000 public sector, 4000 in PSC
9.	Production of Cond/NGL (tons/yr)	50,000	175,000	125,000	Jalalabad, Beanibazar & Kailashtila fields to be commissioned
10.	Production of Coal (100,000 tons)	nil	10	10	--
11.	Production of LPG (tons/yr)	nil	15,000	15,000	NGL plant needed to be commissioned

16.11 Participation of Private Sector

16.11.1 One of the policies of the government is to involve the private sector in the development of hydrocarbon resources of the country through participation of international oil companies (IOC) under production sharing contract. This policy will continue during the Fifth Plan. With the known recoverable reserve of gas, it will not be possible to give additional gas connections beyond 2000 without constraining the supply to the already connected consumers. With the projected demand and known recoverable resources of gas, the country will start facing gas shortage after 2010 if no gas fields are discovered. In order to accelerate exploration efforts, international oil companies will be encouraged to participate in hydrocarbon development. During the last forty years, IOCs/private companies discovered 10 gas fields in the country. On the other hand, the state owned organisation discovered 9 gas fields through implementation of different projects. For exploration of hydrocarbon the whole country has been divided into 23 blocks of which 17 are offered for IOCs for competitive bidding. Three production sharing contracts have been signed for development of discovered gas fields and further exploration and development of new fields. It is envisaged that the supply of gas under PSCs may be available from end- 1998.

16.11.2 In order to regulate the operation of private and public sector entities in the sector, the government is in the process of creating a Gas Regulatory Authority. In line with the policies of privatisation and commercialisation of the sector, the entire gas industry is being segregated into production, transmission and distribution lines. Each operation is entrusted with separate companies to be operated on profit and loss basis. Instead of regulating the price of natural gas, the government is considering to align the domestic price of gas to its international price/long run marginal cost of gas. To this end a committee has already submitted a report on gas pricing, decision on which is awaited.

16.12 Environmental Aspects

16.12.1 Following the decision taken in the Earth Summit held in Rio-de-Janeiro, Brazil in 1992 and in line with the environmental policy of Bangladesh, measures will be taken to assess the environmental impact of the development projects, especially of the new ones. The

Government of Bangladesh has developed an environmental policy which requires assessment of environmental impact of all new industrial projects. In fulfilment of the policy to conduct environmental impact assessment, the government has initiated appropriate action programmes. Over the past decades, the gas sector practically caused no environmental problem since gas produces no hazardous smoke detrimental to environment. Rather, it has been protecting the environment by replacing traditional fuel wood and kerosene.

16.12.2 Recently the government has planned to extract coal and use it in producing electricity in the energy-deficit west zone of the country. Though coal pollutes the environment to some extent, it will also help save the environment by reducing the deforestation process in the west zone. Besides, as this coal is of high quality with low sulphur content, it will cause comparatively low environmental damage. However, to contain possible adverse environmental effects, the government has established an Environment and Safety Division in Petrobangla to assess and monitor the environmental effect of the development projects and suggest mitigation measures. The newly created division will also develop environment and safety management system.

16.12.3 As regards pollution effect of oil refinery, consideration of environment was not taken much into account at the time of construction of oil installations and oil refinery. As a result, the installation does not have adequate environment protection measures and the amount of oily water/sludge going into the surrounding canals, ponds and river and the off-gas pollute the environment around the refinery flare. In order to release minimum carbon-dioxide gas in the atmosphere and to meet the requirement of refinery, adequate measures will be undertaken during the Plan period.

16.13 Linkage With Other Sectors

16.13.1 Since the demand for gas is a derived demand, gas sector development issues, policies and strategies are closely related to and ultimately dependent on the end-user's sectoral objectives and policies, particularly those of power generation and industries (including fertiliser) sub-sectors. In fact demand estimate and investment programme of oil, gas and mineral sector are made on the basis of existing demand and drawn up development plan of the major consuming sectors. Efficient use of gas and commercial energy depend on the operational efficiency of power and fertiliser units, which vary widely from plant to plant due to technological obsolescence and age of the installed plants. Generally keeping this in consideration, the challenge will be to ensure development of downstream production units so as to completely avoid any mismatch of supply and use.

16.14 Internationalisation of Gas Trade

16.14.1 Bangladesh has an estimated gas reserve of 22.90 t.c.f of which 13.6 t.c.f is considered recoverable. With the intensification of oil and gas exploration under the PSCs, this reserve is going to increase significantly in the years to come. With a success ratio of 3:1, it will not be a surprise if we experience a doubling or tripling of the existing reserve very shortly. On the other hand with the current demand scenario and its growth, intensive oil and gas exploration requires a sharp expansion of the gas market even beyond borders. It may be mentioned that due to asymmetric gas reserve vis-à-vis the internal demand in our neighbouring countries, cross border gas trade is a highly promising option for Bangladesh. According to an estimate, by the year 2005, gas demand-supply gap will be 20.8 BCMY in India, 16.1 BCMY in China, 10.6 BCMY in Thailand and 7.5 BCMY in Pakistan. Surrounded by such energy deficit economies, Bangladesh has a great potential for export of gas. The corner stone of a medium to long run strategy of the government may be an internationalisation of gas trade to make the sector economically viable and harness the resources needed for its development. Care will be taken to export gas if so required within the framework of a pragmatic policy of ensuring national interest.

CHAPTER XI

IMPLEMENTATION AND MONITORING

11.1 Introduction

11.1.1 Like any other Plan, the success of the Fifth Five Year Plan will depend on the proper implementation of its programmes and projects, implementation monitoring and post-implementation evaluation. This is particularly important in view of the fact that it is a flexible plan and plan projections will be revised based on evaluation of actual performance. Annual Development Programme (ADP) is the operational document of a Five Year Plan in respect of the public sector. It is basically a list of all public sector development projects undertaken during a fiscal year. While ideally, it should be a list of approved projects duly appraised by appropriate authorities, the list in reality consists of projects at different stages of approval including unapproved ones. The implementation of the public sector part of a plan involves the implementation of these projects in ADPs and policies supporting them. While for all practical purposes, plan implementation was essentially viewed as the implementation of the public sector projects, monitoring and evaluation of the projects, policy planning and policy implementation have received less attention. But with the reorientation of the economy towards a free market, the private sector will assume greater role and public policies, greater significance. So monitoring of their impact on the private sector and on the economy as a whole will demand greater attention.

11.2 Implementation of Plan/Projects

11.2.1 In the project cycle, project implementation is the most critical phase as it is determined by realities and contingencies. It is further determined by the initial conditions such as project approval status and timely commitment of fund. As mentioned above, ADP is traditionally composed of many unapproved schemes which affect project implementation. Project implementation consists of the following main stages which may overlap with one another:

- a. Feasibility study;
- b. Appraisal of project and acceptance by development partner (for aided project);
- c. Approval of projects and assigning responsibility of implementation to an agency;
- d. Appointment of project director (PD) and project staff;
- e. Setting up of project office (where applicable);
- f. Appointment of consultants (where applicable);
- g. Allocation and release of fund;
- h. Land acquisition (where applicable);
- i. Procurement of goods and services;
- j. Execution of projects;
- k. Evaluation of completed projects; and
- l. Impact evaluation.

11.2.2 Project approval : Strictly speaking, approval of projects should pre-date its implementation. However, due to delays in processing of projects or exigencies, sometimes implementation of a project begins even prior to its formal approval. In the recent past, there has been a marked improvement in the process of approval of projects. The government is also seriously considering delegating more power of approval to administrative ministries in

order to expedite implementation. This will, however, require further strengthening of the planning wings of some of the ministries for ensuring quality of project formulation and evolving an alternative institutional procedure for co-ordination.

11.2.3 Assigning responsibility of implementation to an agency : While there is no bar against ministries directly implementing projects, this is generally left to their subordinate agencies like autonomous bodies (e.g. Water Development Board for irrigation projects), directorates and departments. Usually, project formulation and preparation are also the responsibility of the implementing agencies in so much as they conceptualise most of the projects in line with the policy parameters given by the relevant ministries.

11.2.4 Appointment of project director and project staff : Once a project is approved, the relevant agency appoints a Project Director with the concurrence of the administrative ministry. The PD then has to appoint the project staff some of whom may be seconded from the ministry and/or the agency. The selection of a suitable PD is crucial to the project's success. Project implementation suffers frequently due to the selection of a wrong type of PD. Project implementation also suffers from frequent transfer of PDs and absence of PDs at project sites during implementation. Forward planning to complete the preparatory works of a project may help in partly resolving this problem. This issue needs serious attention of implementing agencies.

11.2.5 Allocation/Release of fund : The procedure for release of fund has become simpler than before. Yet it still remains one of the major causes of slow utilisation of financial resources for project implementation. Every year a new circular detailing procedures for fund release is issued by the Finance Division. The delay in its circulation along with occasional changes in the provisions make it difficult to get early release of funds. Release procedures for approved and unapproved projects are different and are more stringent in case of the latter. Financial powers delegated at different levels need to be re-examined and where necessary, may be enhanced. Standard procedures of fund release will also be put in place.

11.2.6 Land acquisition : Land acquisition, particularly in case of infrastructure projects has remained a sore point in project implementation. The legal procedures are cumbersome and delay the implementation of projects. The social cost due to displacement of people from the project land is sometimes high. Recently, however, large development projects like the Bangabandhu Bridge Project has put in operation the resettlement/rehabilitation of people affected by land acquisition. The government is also considering a set of guidelines for land acquisition and resettlement for private sector infrastructure development. All these procedures need to be made uniform and a clear legal and institutional framework will be introduced during the Fifth Five Year Plan. An important way to minimise social cost of land acquisition is to involve the beneficiaries of a project at the project formulation stage through formation of advisory committee. Quantum of land will be determined judiciously so that no land is acquired which will remain unutilised.

11.2.7 Procurement of goods and services : Delay in procurement of equipment and hiring of consultancy services are major problems affecting project implementation. The problem is particularly intractable in case of aided projects because the multi-lateral and bi-lateral development partners tend to pursue their own standards for procurement of goods and services. Such diversities compound the problems of procurement at the users end. The problem may be further confusing in case of co-financing (from more than one sources). To overcome these problems, after a careful study in the late 1980s, new procurement guidelines were issued by the Economic Relations Division (ERD) in 1992. Project directors and agency

officials need to be trained in the use of these guidelines. The effectiveness of the new system should also be reviewed and problems which may still persist should be resolved.

11.2.8 Construction management : Most investment projects entail construction of physical facilities like buildings, roads and embankments. But weather condition of Bangladesh tends to limit the construction season and so the pace of physical work varies over seasons. This together with the programme of mobilising financial and physical resources need to be spelt out in a time-bound critical path. Some components may be time-specific while others may float. A critical path analysis must identify both, while some flexible work may be delayed. In the sphere of physical works building codes are needed in order to speed up implementation. More importantly, in construction of public buildings, the role of the Public Works Department should be one of providing technical support to the project authorities in respect of design, tender evaluation and verification of work quality and the project authority should get the work done through private contractors. When a Ministry has a large number of building works like the Ministry of Education it may contract out designing works in a time-bound frame.

11.2.9 Execution of projects : Project implementation means strict adherence to design specification, approved cost, time-schedule and quality. Project authority should prepare a work plan for project implementation including a bar chart, critical path analysis, synchronisation/programming of various activities, identify milestone decisions, implementation procedures and techniques, review and monitoring mechanism. A project launching workshop, particularly in big and complex projects, should be held before the project starts and all rules, procedures and systems for implementation and monitoring should be discussed and agreed upon.

11.2.10 Evaluation of completed projects : In a real sense project implementation cannot be deemed to have been completed without its evaluation. The executing agencies are required to furnish to Implementation Monitoring and Evaluation Division (IMED) in a given proforma certain information. On the basis of such information and also field verification, project completion reports are prepared and submitted to NEC. At present a very limited number of projects are taken up by IMED for ex-post evaluation. Some ministries/agencies carry out impact evaluation of some of their activities through consulting firms. Efforts should be mounted to get an increased number of programmes/projects evaluated about their impact on the society at large.

11.3 Monitoring of Projects

11.3.1 Monitoring implementation of development projects is a relatively new idea. Many developing countries undertook large number of projects under their development programmes since the middle of the century. But no institution was created to monitor the implementation and evaluate the results of those development projects until recent years. Bangladesh experienced monitoring problems after independence and new institutions had to be built up. The primary responsibility of monitoring of projects rests with the sponsoring ministry/agency itself. Along with the officials of the executing agencies officers of the ministry, particularly in the development and/or planning wing, should undertake regular field visits to keep abreast of the progress of work and to help resolve bottlenecks of implementation. Monitoring by Implementation Monitoring and Evaluation Division in its present form cannot be all-embracing. This Division has neither the resources, nor the time to look into the details of some 1200 projects being implemented annually. In fact IMED was initially conceived to monitor critical projects in order to expedite their execution, not to obviate sectoral responsibilities.

11.3.2 For the purpose of effectively carrying out monitoring and evaluation activities several institutions and practices have developed in Bangladesh. From the government side these have emerged both at the central level as well as at the levels of corporations and departments. The development partners in Bangladesh also introduced their own monitoring and evaluation system. Although both of these systems operate fairly independently in the country, institutional linkages are often set up and used.

11.3.3 Besides, IMED and the planning wings of the administrative ministries, monitoring cells of some executing agencies, project implementation units (PIU) of some large projects, etc. Planning Commission, Statistics Division, Economic Relations Division, etc. also undertake some sectoral reviews of performance.

11.3.4 Monitoring arrangements

- a. Planning wings in administrative ministries :** Planning wings of the administrative ministries were created to strengthen their project planning and monitoring capabilities. Except for the planning wings of the Ministry of Agriculture, Fisheries and Livestock, Irrigation and Flood Control and Education, most of the other planning wings in other ministries are understaffed and ill-equipped to carry out the planning, monitoring and evaluation functions effectively. Monitoring is carried out mainly through obtaining progress reports from the project management, field inspections and monthly review meetings in the ministries. Representatives from Ministry of Finance, Ministry of Establishment, Planning Commission, ERD and IMED attend these meetings.
- b. Economic Relations Division of Finance Ministry :** ERD is responsible for aid mobilisation and also for programming of external resources for projects. They undertake quarterly and annual reviews of fund utilisation, especially foreign aid. Development partners also maintain constant liaison with ERD and inform them of disbursement situations from time to time. A cell to keep track of the issues related to aid line-up and utilisation is functioning in the ERD. The information collected and collated by this cell provide important inputs for the policy makers.
- c. Finance Division :** With the assistance from UNDP, the System for Autonomous Bodies Reporting and Evaluation (SABRE), as a computerised database is in operation at the Autonomous Bodies Wing of the Finance Division. The objective of the system is to provide standardised financial information on autonomous and semi-autonomous bodies which are regularly required for budgetary and financial control, economic planning and performance evaluation. SABRE envisages to cover all autonomous and semi-autonomous bodies as well as their units or enterprises falling under the budgetary control of the Finance Ministry. The Development Wing monitors progress of claims and disbursement of Reimbursable Project Aid (RPA).
- d. Development Partners :** Most of the development partners have developed their own system of progress monitoring, namely Tri-partite Review Meetings (TRM mainly by UNDP), Review Meetings, Review Mission Reports, Consultants' Progress Reports and Local Mission Reports, etc. Except for UNDP, the World Bank and the Asian Development Bank who pursue intensive monitoring techniques, the other development partners rely more on consultant's progress reports and review meetings with the government.

11.3.5 Monitoring by IMED : IMED is involved in the entire life cycle of a project - pre-project appraisal, monitoring during implementation and reporting on completion of projects as well as ex-post evaluation as discussed below.

- a. Pre-project stage :** Identification, formulation and appraisal of projects are undertaken at this stage. During pre-project stage IMED contributes as under:
- i. Undertakes cost rationalisation prior to submission of the PCP for approval (This has been discontinued from February 1997);
 - ii. Involves in the preparatory stage of ADP;
 - iii. Represents in the NEC/ECNEC/SPEC/DPEC/DSPEC;
 - iv. Checks rationale of estimate of costs;
 - v. Checks reliability of implementation schedules;
 - vi. Checks duplication, overlaps, if any, with other projects;
 - vii. Compares with experience of similar project(s) implemented before; and
 - viii. Checks manpower size, reliability and also the suitability of institutional framework planned for implementation of the project.
- b. Monitoring during implementation:** IMED monitors progress during implementation of projects through :
- i. Periodic Reports>Returns;
 - ii. Field inspection; and
 - iii. Co-ordination/Review meetings.
- i. Periodic reports/returns:** IMED has introduced a system of progress reporting for collection of various information on project implementation. The system attempts in translating the work schedule of projects into quantifiable work components and to relate the physical performance with the financial expenditure. In fact, the system follows 'PERT' (Program Evaluation and Review Technique) management system which the government desires to introduce in case of all development projects in the country. IMED presently uses different proforma for the purpose of collection of information about physical and financial progress of projects/programmes for their evaluation. The reports on the progress of implementation are examined by IMED and consolidated into Ministry/Agency-wise reports on physical and financial achievements vis-a-vis targets. Various implementation problems are identified on the basis of these reports and information collected by the officers of IMED during their inspection. These reports are then placed before the National Economic Council (NEC), Executive Committee of the National Economic Council (ECNEC) quarterly/periodically along with the recommendations of IMED for removal of bottlenecks in order to speed up the implementation of slow-moving projects. The NEC/ECNEC takes decisions on major issues which become binding on all concerned.
- ii. Field inspection :** On-site inspection of progress of implementation of projects is one of the basic responsibilities of the IMED. All the officers of IMED visit projects to identify problems/bottlenecks of the projects. In fact every month each sector officer is to inspect at least three projects grouped as follows :
- Project targeted for completion;
 - High priority projects;
 - Sick projects; and
 - Other aided projects.
- Projects targeted for completion during a financial year are generally inspected every quarter, high priority projects twice a year and other aided/sick projects once a year. Bottlenecks identified during inspection are conveyed through

inspection reports to the concerned Project Director/Agency/Ministry for corrective action.

- iii. **Co-ordination/review meetings:** IMED officials hold Co-ordination /Review meetings with the ministries/ divisions/agencies at appropriate levels and attempt to resolve problems/bottlenecks standing on the way of smooth implementation of projects. The unresolved problems are taken up by the Secretary/DGs with the concerned heads of ministries/ divisions/agencies. Some problems are required to be attended to at the level of the Ministers. Problems of more intricate nature which cannot otherwise be resolved are placed before the ECNEC/NEC for their decisions which are followed up by IMED until those are implemented.
- c. **Reporting on completed projects :** A project management is required to submit certain information through the administrative ministry to IMED as soon as a project is completed. Generally this takes place at the end of a financial year. IMED completes reporting on the projects completed in the preceding year in about 3/4 months of the following year. The findings form a part of the annual report presented to the NEC about overall implementation of development projects in the country.
- d. **Ex-post evaluation :** IMED also carries out ex-post evaluation of a few selected projects on a limited scale. The Population Development and Evaluation Unit (PDEU) of the Planning Commission was transferred to IMED. The personnel of this Unit are being used to gear up ex-post activities of IMED.

11.3.6 Monitoring of post-implementation operation (Sustainability monitoring)

- a. Sustainability monitoring is a recent concept. In Bangladesh, institutional arrangements for sustainability monitoring has not yet developed in most of the agencies. Some agencies undertake this function in a very limited way. These are Bangladesh Water Development Board, Bangladesh Rural Development Board, Bangladesh Academy for Rural Development, Bangladesh Institute of Development Studies, etc. The Ministry of Finance through SABRE made efforts to install performance evaluation of public sector agencies with limited success. IMED undertakes sustainability monitoring function on an *ad hoc* basis on assignments from the ECNEC, the Planning Commission and upon request from the ministries/agencies.
- b. Sustainability monitoring, though a very necessary tool in the development process, has not yet taken its desired shape in Bangladesh. The government is aware of this fact and this is emphasised in the Fifth Five Year Plan.
- c. The Environmental Impact Assessment that needs to be carried out during formulation of projects should be observed by all the concerned agencies and truthfully followed up during and after implementation. It is high time that adequate attention is focused on the issue of environment in the formulation and implementation of all development activities.

11.4 Project Evaluation

11.4.1 Formative or on-going evaluation : Formative or on-going evaluation or diagnostic study is undertaken both by the executing agencies as well as IMED. This type of evaluation is done during the implementation of large projects which are of programme nature and implemented over many years on a continuous basis. The projects are selected from major

sectors facing implementation problems. ECNEC and the Planning Commission sometimes ask IMED for undertaking on-going evaluation. In addition, agencies also request IMED for undertaking such evaluation. Data collection is done through field visits, discussions with project implementation authorities and study of the project document, previous reports, inspection reports, review papers, etc. These data are compiled and analysed and the evaluation report is prepared. A simple format for such evaluation is used. It contains information on objective of the project, approval status, date of actual commencement, expected date of completion, original and latest implementation period, original and latest estimated/approved cost, cumulative and component-wise latest physical and financial target and progress, existing implementation problems, general observations with suggested solutions/recommendations etc. These reports are published as a part of the Annual Report prepared for review by the National Economic Council. The NEC directs all concerned to implement the recommendations made in these evaluation reports. IMED follows up the implementation of the recommendations. Some agencies also undertake on-going evaluation of their respective projects, e.g., Population Control & Family Planning Department, Rural Electrification Board, Bangladesh Rural Development Board, etc.

11.4.2 Summative or terminal evaluation : Since 1983/84 IMED started evaluation of completed projects on a limited basis immediately after its implementation is declared complete by the executing agency. Subsequently, from 1986/87, all the projects declared complete during a particular FY are being evaluated. Evaluation of projects immediately after its implementation is complete, is termed as "terminal evaluation". Data collection procedure for terminal evaluation is similar to that of on-going evaluation. Collected data are collated, compiled and analysed for preparation of the evaluation reports. A simple format for terminal evaluation is used which contains mainly information on project's latest approved estimated cost and implementation period, actual expenditure and implementation period, cost and time over-run analysis, component-wise planned physical target and actual achievement, planned objective and actual achievement, etc. Measurement of "outputs" as against the PP targets is mainly emphasised in these evaluation reports including the reasons for non-completion or partial completion, if any, of any component as per project document. Problems faced during implementation of the projects are analysed and possible measures for avoiding such problems during planning and implementation of similar future projects are identified and incorporated in these evaluation reports. These reports are also prepared as a part of the Annual Report for review by the National Economic Council. Ministries/ divisions/ agencies prepare a project completion report (PCR), designed by IMED, for each of the projects declared complete by them. These reports contain information on seven major areas : (a) Project Description; (b) Implementation Position; (c) Financial and Physical Program (d) Achievement of Objectives of the Project; (e) Benefit Analysis; (f) Monitoring and Auditing; and (g) Descriptive Report.

11.4.3 Ex-Post or impact evaluation :

- a. Impact evaluation studies are comparatively a new activity in Bangladesh. As per the current monitoring and evaluation practices, the lead agency in this area is IMED though the basic responsibility of such evaluation lies with the respective administrative agency of projects.
- b. The IMED could not take the function of ex-post/impact evaluation on a systematic and regular basis owing to lack of well-trained manpower in the techniques of ex-post evaluation and other logistic support. However, since 1983/84, IMED started ex-post evaluation of selected projects and incorporated them in the Annual Reports. In the recent past IMED also implemented a pilot project with the

assistance of ADB, to strengthen evaluation capabilities of the division. More comprehensive technical assistance projects for enhancing evaluation capability of IMED and the relevant ministries are required to be developed during the Fifth Five Year Plan period. It is hoped that IMED will be in a position to undertake the function of ex-post evaluation in a more systematic manner on regular basis after the evaluation capability of IMED is increased through extensive training of the existing manpower, increasing the existing manpower strength and other logistic support. It may be mentioned that intensive impact evaluation has been carried out in the population sector since 1992. However, in a limited scale within the existing manpower of IMED, ex-post evaluation work has been taken in hand for all sectors.

- c. Some agencies also undertake impact evaluation. Among them Bangladesh Institute of Development Studies (BIDS), Bangladesh Rural Development Board (BRDB), Bangladesh Academy for Rural Development (BARD), etc. may be mentioned. Some of the development partners also undertake independent impact evaluation of their aided projects.

11.5 Monitoring and Evaluation Experiences

11.5.1 Pre-project appraisal

- a. IMED was assigned from FY 93 the function of rationalisation of cost estimates of development projects before the Project Concept Papers (PCPs) are finalised for submission to the Planning Commission for processing the PCPs for approval. The exercise was being carried out through discussion meetings. Cost rationalisation by IMED was recently discontinued. IMED, however, strongly feels that cost rationalisation is a very useful tool in project appraisal and must be carried out diligently by whatever agency entrusted with the task.
- b. IMED is represented in the different levels of project appraisal before investment decisions are taken. Officers at the minimum of Director level are to attend such meetings. But officers of appropriate level can not always represent IMED in these meetings owing to a limited set-up. Other organisations also are not always represented appropriately. This tells on efficient decisions.

11.5.2 Monitoring during implementation

- a. **Project inspection** : On-the-spot inspection of physical progress of a project is the most effective tool for monitoring its implementation. It has been observed that higher physical progress was achieved in the years with greater field-level inspections. With a view to achieving higher achievement of physical target, IMED inspection program needs to be intensified. The IMED inspection reports are sent to all concerned with foreseen identified problems and suggested solutions thereof. Recommendations made in the inspection reports do not always get proper attention of concerned quarters. Many senior officials including the Finance and Planning Ministers observed on various occasions that if IMED recommendations were implemented, there would be no obstacle to achieve desired progress in development programmes. Inspection of projects by the concerned administrative ministries and the executing agencies is also reported to be inadequate.
- b. **Review meetings** : Review of progress of implementation of development projects/programmes at the Ministers'/Secretaries' level has established to some extent a system of management accountability and closer interactions and mutual

appreciation of problems between the decision makers and project implementers facilitating actions and on-the spot decisions. It has been experienced that review meetings at higher levels contributes greatly to the progress of implementation. It is important to mention here that some ministries lack proper administration of monthly review meetings. They take long time to record and communicate decisions which jeopardise the subsequent corrective actions.

- c. **Special monitoring** : In order to improve the progress of implementation, initially 40 projects were identified as high priority projects and are being intensively monitored since January '92. To utilise the project aid allocation to the maximum, some 16 ministries/ divisions having large share of ADP allocation of budget (around 80%) have been identified and their projects are also being monitored very intensively since July '92. IMED also monitors progress of large procurements under development projects (above Tk. 20 million for goods & works and above Tk. 5 million for consultancy services). These measures of special monitoring are showing improvement in the case of high priority projects and the selected large aid utilising ministries/ divisions thereby showing improved overall performance under ADP.
- d. **On-going evaluation** : IMED undertakes on-going evaluation as diagnostic studies in a very limited way. This is mainly due to (i) inadequate knowledge of such evaluation techniques on the part of the IMED officials and (ii) want of adequate manpower. This aspect of monitoring during implementation needs more attention. It is hoped that IMED will try to have improved on-going evaluation of development projects.
- e. **Overall absorption capability of ADP** : ADP implementation capability has improved significantly from 56 percent of total ADP allocation in 1972/73 to 96 percent in 1995/96. But it is also observed that except for 4 years (FY'78, FY'81, FY'89 and FY'90), during the remaining 19 years ADP allocations could not be utilised fully. In case of PA, the allocation was utilised fully only in FY 1988/89. It may be mentioned here that, during the recent years, ADPs have been reduced in revised budgets. This situation of under-utilisation of even reduced ADP allocations may be attributed to over or un-realistic programming. In pursuance of an NEC decision a separate list of projects where foreign aid could not be lined up is inserted in the ADP.
- f. **Identification of implementation problems** : Identification of implementation problems and recommendation of measures for their solutions are very important aspects of monitoring of projects during implementation. It has helped reduce the number of implementation problems as well as the number of projects affected by those problems. As against 33 different implementation problems in FY'82, the IMED's 1995/96 annual report identified only 10 major problems as follows :
 - i. Delay in approval of project/revised project;
 - ii. Delay in release of fund;
 - iii. Delay in land acquisition and handover;
 - iv. Delay in lining up of project assistance;
 - v. Delay in calling tender and observing formalities;
 - vi. Delay in appointment of consultant;
 - vii. Delay in executing agreement with donor country/agency;
 - viii. Delay in completion of civil works on deposit fund;
 - ix. Delay in appointment of project personnel; and

- x. Delay in fulfilment of conditions precedent for loan effectiveness and disbursement.

Effective steps and decisions will be taken by the government to resolve these problems during the Fifth Five Year Plan.

11.5.3 Ex-post evaluation : The function of ex-post evaluation is very limited in Bangladesh as has already been discussed earlier. However, IMED undertakes evaluation of all completed projects immediately after those are declared complete. But impact evaluation function is still insignificant both in volume and in quality. This is attributed to the fact that there are very few officials in the IMED with necessary skill and experience to undertake impact evaluation. This area needs immediate attention in the interest of sustainability of development projects. IMED has recently taken up an expansion program for its organisation and hopes to undertake this function more systematically and effectively in future.

11.6 Monitoring of Private Sector Projects

11.6.1 Private Sector is visualised to be the engine of growth during the Fifth Plan. The government policy is to pave the way for rapid expansion of the private sector for transformation of the economy into a more effective market economy. The government will play "promotional" rather than "regulatory" role for the private sector and act as a catalyst through the sponsoring agencies, i.e. BSCIC for small and cottage industries, BEPZA for industries located in export processing zones and Board of Investment for all other cases. To facilitate the process, a Privatisation Board has been set up in order to review the performances of the public sector enterprises and to privatise them in order to sustain efficiency in operation. There is an Industrial Development Council under the chairmanship of the Minister for Industries. The concerned sponsoring agencies collect information and data on quarterly and yearly basis and furnish them to all sanctioning/registering authorities.

11.6.2 The Fifth Five Year Plan envisages 56 per cent of the Plan outlay to be in the private sector. It is, therefore, imperative that monitoring of the private sector projects be given proper importance. The Development Financing Institutions (DFIs) have their own system of monitoring the progress of their own financed projects. But so far, the national monitoring agency, IMED, has not covered private sector projects in its monitoring system. Considering the importance of the private sector, IMED should devise a system to monitor the implementation of the private sector projects also. In the process, Bangladesh Bureau of Statistics, Board of Investment, Privatisation Board, Export Promotion Bureau, Bangladesh Bank, BIDS, etc., may be involved.

11.7 Strengths and Weaknesses of Monitoring and Evaluation System

11.7.1 Strengths

- a. Through IMED a system has been institutionalised and integrated for project monitoring, information gathering and dissemination, problem solving, etc.
- b. IMED's linkages with the planning processes of the country provides it with the necessary planning-implementation feedback which is very vital for proper monitoring of projects.
- c. IMED's assessment of inherent weaknesses of the project managers in planning and implementation techniques finally culminated in the creation of the Academy for Planning and Development imparting regular training to managers in the techniques of project preparation, implementation and management.
- d. The system of field inspection and holding of review meetings at the minister/secretary level has established to some extent management accountability and

closer interactions and mutual appreciation of problems between the decision-makers and project implementers facilitating actions and on-the-spot decisions.

- e. In sum, the benefits of the central monitoring system have been manifold such as establishment of some management accountability, improvement in implementation and identifying institutional linkages between planning and implementation.

11.7..2 Weaknesses : In spite of the aforementioned contributions of the present monitoring system, the following weaknesses may be recognised which affect its operational efficiency :

- a. The need and importance of efficient monitoring and evaluation(M&E) activities is yet to be fully understood by the rank and file in the system;
- b. The lack of proper and prompt response from top managers on monitoring reports often frustrates the reporting authorities and agencies who then neglect the importance of quality reports. This results in inconsistent reports, which in turn, affects accurate decision-making;
- c. Implementing officers often consider the problems as personal failures, and thus instead of seeking help in solving these, try to hide them. They only report achievements and sometimes put the deviations and delays in the dark. Top management's lack of sensitivity and failure to appreciate problems and difficulties faced by the lower functionaries have to a great extent, contributed to this situation;
- d. Quality control of progress reports is absent or neglected at the project, agency and ministry/division levels;
- e. There are too few people in the central monitoring organisation to manage the monitoring of large number of projects efficiently;
- f. There is a lack of updated knowledge and techniques for efficient monitoring and evaluation both at the centre as well as in the ministry/agency levels;
- g. IMED's own lack of authority and at times inability to initiate problem-solving actions seriously demoralise the project managers who in turn lose interest in reporting problems. This also contributes to low quality and lack of accuracy of the reports.
- h. Monthly project review meetings in some ministries are not held regularly and others lack proper administration. It takes a long time to distribute decisions thus jeopardising the subsequent corrective actions.
- i. Submission of project completion reports after a project is declared complete by the ministries/divisions has not yet been developed as a regular practice.
- j. Physical units of measurement are sometimes not mentioned in the project documents as also in the progress reports from projects, thus rendering any meaningful interpretation of progress monitoring a difficult task.
- k. Even large projects do not always have full-time PDs.
- l. Sustainability monitoring lacks proper attention at all levels making investment ineffective.
- m. Monitoring and evaluation of private sector development activities have not been developed.

11.8 Policy Measures for Implementation of Fifth Five Year Plan

11.8.1 In order to achieve a successful implementation of the Fifth Five Year Plan, weaknesses mentioned in the previous sections will be removed. The following are some of the steps which will improve the situation:

a. Capacity building

- i. There must be increased capacity building in executing agencies, planning wings of ministries and IMED on project preparation, cost analysis and implementation techniques.
- ii. Monitoring and evaluation capability at agency/ministry level as well as at IMED will be strengthened by providing specialised training to the relevant officers both at home and abroad. Training institutions like the Planning and Development Academy, Bangladesh Institute of Administration and Management, Bangladesh Institute of Management, etc., may be conveniently used for this purpose.
- iii. Planning wings in the ministries/divisions will be strengthened with appropriate officers from the economic cadre so as to make them well equipped to handle monitoring and in-house evaluation of projects.
- iv. The administrative ministries/executing agencies will carry out close monitoring of projects under their jurisdiction so that IMED can concentrate more on selected priority projects.

b. Project preparation

- i. Project preparation with correct identification of components, appropriate design and specification, cost analysis, site selection, implementing agency, implementation strategy/mechanism including review, monitoring and evaluation procedure will be ensured.
- ii. Donor and the government requirements for project preparation need to be synchronised.
- iii. Strategic objectives will guide development planning.
- iv. Manpower requirement after completion of a project will be standardised and incorporated in the P.P. In cases where fresh decision is required as to the actual number of manpower to be retained it will be resolved jointly by Ministry of Establishment and Ministry of Finance within 3 months of project completion.

c. Approval of projects/Revised projects

- i. All unapproved projects in the ADP will be approved by September every year.
- ii. ECNEC decisions will be communicated immediately and preferably within a week after the ECNEC meeting for their speedy implementation.
- iii. Approval of revised projects : More authority will be delegated to the implementing Ministries to approve revised projects involving :
 - cost increase up to 25 per cent without exceeding sectoral/sub-sectoral allocation;
 - In case of approved projects, inter-project reallocation (upto 25%) without exceeding sectoral allocation;
 - however, project revision involving additional sectoral allocation, change of site, change of objectives, impact on environment, large-scale displacement of people will need Planning Commission's/ ENCEC's approval irrespective of cost involved; and
 - In case of aided investment projects decision on implementation issues arrived at tri-partite meetings will be considered as the basis for future project revision, if necessary.
- iv. A maximum time-limit of 3 months for approval of revised projects by competent authority will be adhered to.

d. Execution of projects

- i. Manual for procurement of goods, works and services for non-aided projects will be prepared by the Cabinet Division.

- ii. Building codes will be updated and administered properly.
- iii. Strict adherence to existing specified time limit in case of procurement of goods, works and consultancy services will be ensured.
- iv. Following time limit will be observed against respective activities :
 - Appointment of PD's and project personnel during appraisal/ preparatory stage;
 - Setting up project office within 3 months of approval of the project;
 - Fulfilment of conditions precedent for loan effectiveness and disbursement as specified in PRODOC/Credit Agreements;
 - Land acquisition/purchase: 3-6 months;
 - Examination of bills : 7-10 days;
 - Decision on payment of bills: maximum 2 weeks from the date of receipt; and
 - Submission of claims for RPA : maximum 2 weeks from the date of receipt.
- v. Project director/evaluation committee must strictly follow evaluation criteria/ procurement guideline of the government and donors for bid evaluation. Any irregularity or deviation on the part of PD/evaluation committee will be penalised. Likewise, any bidder trying to influence the decision of the project director/evaluation committee or any other authority will be summarily disqualified.
- vi. Any complaint or allegation against bid evaluation or procurement decision will be disposed of within 2 weeks at the maximum.
- vii. Existing Secretaries' Committee on Finance and Development will be used where necessary to resolve serious inter-ministerial issues.
- viii. Immediate hand-over of completed projects for operation and maintenance will be ensured.

e. Project Director

- i. All large projects will have full-time PDs and their continuity in office will be ensured even in promotion cases by upgrading their existing positions, if necessary.
- ii. Irrespective of their belonging to government or an autonomous organisation, all PD's will be delegated the same financial and administrative power.
- iii. Experienced persons will be appointed on contract as project directors in accordance with the ECNEC decision.
- iv. PD must promptly bring to the notice of his administrative ministry/higher authority any shortcoming/problems in project implementation which he himself cannot solve and the administrative ministry must promptly resolve the issue either on its own or through the appropriate Secretaries' Committee depending on the scope and nature of the subject.
- v. Training of PDs and project staff is a critical input in efficient project implementation. Appropriate measures will be initiated to promote institution building, hold regular courses on project implementation procedures and techniques, as well as refresher courses for PDs and to prepare handbook on project implementation.
- vi. A system for reward for good performance and punishment for unsatisfactory performance will be introduced. Risk-taking and initiative will be encouraged.

f. Monitoring

- i. Monthly project implementation review meetings in all the ministries/division will be held regularly and chaired by Minister/Secretary. Regular stock-taking of assets and level of utilisation will also be carried out.
- ii. Recommendations made in the IMED inspection/evaluation reports will be regularly reviewed in the monthly meetings of the ministry/division concerned and corrective actions taken.
- iii. Head of executing agency and PD when not resident at site will regularly visit project site and thoroughly supervise the work of consultants and contractors to ensure adherence to design/specification, cost, time-schedule and quality of work.
- iv. Joint field visits by the Planning Commission, IMED, concerned Ministry and PD will be undertaken from time to time, particularly in respect of important projects/programmes.
- v. Planning wing officers will inspect projects as per government decision regularly.
- vi. There will be frequent interaction with donors as soon as problems are identified. Donors' review missions may coincide with the quarterly co-ordination meetings of concerned ministries/division.
- vii. Micro-management of projects/programmes by any second agency other than the relevant one should be avoided. Donors also will be discouraged from micro-management of individual projects/programmes.
- viii. General Economic Division of the Planning Commission and Bangladesh Bank and BOI will develop a working mechanism for monitoring implementation of private sector projects : a Private Enterprise Council of the Prime Minister composed of businessmen may be appointed to this end.
- ix. There will be a standing liaison committee between the government and private sector to resolve problems encountered by the private sector investors as practised in the Ministry of Agriculture; BOI will be revamped and strengthened to this end.
- x. An effective system for penalisation of consultants/contractors for bad performance will be reviewed for either continuation or cancellation.
- xi. Small projects, within Tk. 100 million, if not started within 3 months of approval will be reviewed for either continuation or cancellation.
- xii. Seminars on monitoring and evaluation for senior managers and decision-makers will be arranged for effective functioning of the system.

11.8.2 Other measures : The Planning Commission will continue to oversee the implementation process and to co-ordinate with the relevant ministries and agencies to solve any problem that may arise. Special attention in this context will be given for delegation of implementation responsibility to local government bodies and to devise an institutional procedure to co-ordinate implementation in relevant administrative units of the country.

11.8.3 Operations and maintenance : Following implementation adequate attention will be given to operate and maintain the project. Needless to say, ICVR of the project will suffer if operation and maintenance are not proper. Involvement of beneficiaries and local government institutions will be the cornerstone of measures directed to this end. Besides, adequate funds will be made available and contracts to the private enterprise given in suitable cases for operation and maintenance.

CHAPTER XII

RESOLUTION OF CONFLICTS

12.1 Introduction

12.1.1 Development or growth implies change in the relevant field. Any such change affects the status quo in terms of position, entitlement, benefit or loss and expectation of the relevant people. The relevance is connotive of their roles or ambits of work as producers, consumers, change-agents or interested citizenry. In addition, change initiates, carries and at times completes transformation of the environment and the eco-system. Control of river flow, use of ground water, mining of hard rock and coal, building roads through hills and forests, use of insecticides and pesticides, and other manifestations and ramifications of the development drive transform the natural backdrop and the environment hitherto untouched, unexploited, unmoulded out of quiet serenity and stately tranquillity acquired over years of motivational and technological stasis and so much adored by the naturalists.

12.2 Need For Resolution of Conflicts

12.2.1 The resulting change in the status quo, the environment and the eco-system has to be accepted and supported by those who are affected or benefited, touched or hurt. As the theory has it, a change is justifiable when benefits emanating out of it are socially assessed to be more than costs or hurts it imposes. In the process those who benefit may do well by carrying with them those who may be adversely affected or are indifferent. Non-acceptance of, and opposition to changes yield conflict, which may, at times and on occasions, lead to rebellion. The process of acceptance and gaining support is a process of resolution of conflicts. If conflicts are not resolved yielding acceptance of, and support for the change, the scope of the latter does not widen desirably, and its rate immerses back into the status quo, the unchanged environment and the undisturbed nature or even worse. On the other hand, if conflicts are resolved institutionally and without disruptive societal abrasions, stability in socio-economic management is attained and sustained, the role players in all relevant fields of production and consumption are provided with an enabling environment and motivation to contribute their best and the desired change takes place to the end of socio-economic development of the society. All these contribute to increase of capital accumulation or creation of productive capacity and increase in efficiency of resource use. In the context of participatory planning, resolution of conflicts, around the planned change in the status quo, the environment and the nature is important in as much it defines, lays out, widens and sustains the conduit of change or development. Indeed, resolution of conflicts is the spirit of participatory planning.

12.3 Existing Elements of Conflict

12.3.1 In the situational context of Bangladesh, a number of elements contributing to the process of resolution of conflicts exists: contiguous location (excepting a few small enclaves) of the country, linguistic unity (excepting some areas in the hill districts), constitutionally accepted democratic ideals and commitment to prosper in freedom and rapid improvement in roads and tele-links throughout the country in recent years and demonstrated public support for them have brought the constituents of our society closer and made it more cohesive. To the end of sustaining and strengthening solidarity these positive elements ought to be further applied and used. Opening up of remote areas in hilly districts by roads and telelinks, signing of peace treaty

with the insurgent tribals in hill tracts, connecting the offshore islands with regular water transports, and out reaching tribal communities in Mymensingh and Rajshahi regions through spread of education and communication facilities will have definite contributions in removing conflicts latent in some regional differences and disparities. The opening of the Bangabandhu Multipurpose Bridge in June '98 will serve as the single most unifying bond between the southern and the northern regions of the country. Despite these well identified positive elements, in a number of areas, especially in the process of formulating and implementing planned socio- economic change, possibilities of conflict need to be recognised and steps delineated to resolve them over time.

12.4 Conflicts in Objectives and Mechanics

12.4.1 To start with, by way of enumeration, there may be conflicts while determining the Plan objectives. Conflicts on this count may arise in terms of both vision and mechanics. The vision of the society 15 or 20 years hence is likely to be different to different persons or groups. The enterprising and the rich may like to work for a society different from the one aspired by the labour or the poor. The expectations of the landless are likely to be different from that of the land-rich. The consumer's views of societal interest may be different from that of the producer's seeking protection. The difference in mechanics may centre round relative emphasis to be given on relevant indicators as well as variables of growth: this may demand answers to questions like those pertaining to, for example, employment creation or productivity generation, protection or liberalisation, generation of surplus in agriculture for financing investment in industrial development and others.

12.5 Constitutional Guidelines

12.5.1 The basic objectives of planned growth is constitutionally defined in Bangladesh. In Article 15 of the Constitution, provision of basic needs in terms of food, clothing, shelter, education, health service, gainful employment, reasonable recreation and social security to the citizenry through planned economic growth is accepted as a fundamental responsibility of the state. In this process, the state is to pursue (a) emancipation of the toiling masses, the peasants and the labour, and the backward communities from all exploitations (Article 14), (b) gradual removal of disparity in standard of living of the rural and urban areas through promotion of an agricultural revolution, provision of rural electrification, development of cottage and other industries and improvement of public health (Article-16),(c) adoption of free and compulsory education and removal of illiteracy (Article-17), (d) equality of opportunity and removal of social and economic inequality between man and man, equitable distribution of wealth and uniform level of economic development in all areas (Article-19), and (e) creation of conditions in which unearned income cannot be enjoyed (Article-20).

12.6 Promoting Consensus

12.6.1 Determined constitutionally as aforesaid, the objectives of planned growth have to be taken as given by all role players. In other words, the vision that we all have is the vision of a society meeting the basic needs of the people in an exploitation-free informed environment encompassing social, economic and opportunistic equality. Within their broad frame, discourses and deliberations in the parliament, political parties, professional associations, local government bodies and research institutions are likely to build up consensus on components of these objectives and relative emphasis to be given to them in changing contexts. In this process the

parliament may serve as the apex deliberative body taking into account deliberations and discourses in other bodies. Deliberations in the parliament will yield legislative decisions on policies, projects and programmes and manifest as contributions of the relevant political parties to the national strive at planned economic growth for meeting the basic needs of the people as mandated by the constitution.

12.7 Mechanics of Growth

12.7.1 There are two main components of mechanics for attaining the set objectives of planned development. In the first place, the constitution has laid down a set of premises. These are: (a) affirmation of the national will to prosper in freedom (preamble); (b) recognition of the people as the source of all powers of the Republic (article-7) and owners and controllers of all instruments and means of production and distribution (article-3); (c) meeting basic needs of the citizenry through attaining a constant increase of productive forces' (article-15); (d) return to individuals on the principle of 'from each according to his abilities to each according to his work'; and (e) taxation and authorisation of expenditures under the authority of the parliament (articles-83 and 90). Secondly, subject to the conditions set by the constitution, causative process of change in one sector because of changes in the inter-related ones is to be taken into account. Elsewhere, aggregatively these intersectoral relations have been spelt out in their composition and effects, changes and ramifications. In the present context, these, in turn, are implicative of gains or losses for individuals and groups and thus need to be understood, evaluated and accepted. The question centring round distributive justice vis-a-vis incentives for productive investment, or increase in defence expenditure vis-a-vis investment in education, for example, will have to be answered in this context.

12.8 Parliamentary Conduit

12.8.1 For continuous resolution of conflicts and differences in the process of attaining these objectives, subject to the constitutional mandates, the most effective conduit again is the parliament. Exogeneously, free, fair and regular elections to the parliament coupled with the freedom of information media will strengthen the parliamentary process. The other important contributing element in this process will be freedom of speech, conscience, movement, association and assembly for all citizens as guaranteed by the constitution. Endogeneously, from the functional point of view, for an in-depth analysis of issues and realistic delineation of the paths to be taken, strengthening of the relevant standing committees in the parliament seem to be in order. Open hearings and deliberations in these committees working throughout the year will contribute to transparent, accountable and responsive policy directions and decisions in this regard. Dialogues and deliberations instead of boycott and confrontation are likely to facilitate and converge at answers to issues at hand.

12.9 Role of Public and Private Sectors

12.9.1 Pertaining to this process, the parliament at the present time is expected to decide on two major issues. These centre around the choice of the public sector in complementation or supplementation of the instrumentality of the private sector as the major vehicle of growth. In recent years, there has been a relative relegation of the public sector as the constituent of 'commanding heights' usable by the state to regulate and to promote the economy. All sectors of the economy have been opened up for investment, production and operation by the private sector. Despite such an opening, the role of the public sector in development of infrastructure is acknowledged. Even in such an area, given the constitutional mandate to meet the basic needs

of the people through planned economic growth based on 'a constant increase in productive forces', choice between public and private sectors as a conduit for attaining productivity should centre around considerations of relative capability and efficiency in production and equity in distribution. If for building infrastructure facilities in certain areas or sectors, private enterprise lacks in capacity, the public sector may be deployed. If following setting up a public utility by the public sector, inefficiency in operation creeps in, a case for privatisation is built-up. For directly productive investment in agriculture, industry and in services, if the private sector has built-up capacity, generally public sector has no reason for deployment of additional resources or for interference unless social circumstances warrant it in the interest of both producers like small farmers and poor consumers. A consensus built on these principles will definitely contribute to constrain as well as to rationalise roles of public and private sectors to the societal benefit. Such a consensus will facilitate expeditious privatisation of the bloated and unprofitable state owned enterprises. The process, in its all constituent parts will contribute to shape up ethos involving market-orientation of the economy in support of democratisation of the political system.

12.10 Market Failures and Government Failures

12.10.1 Related to the choice between public and private sectors, general questions centring round market as well as government failures in the economic realm need to be answered. As the recent theory has it, the market may fail in cases of (a) externalities, (b) public goods, (c) poor information and (d) monopoly. Failure in this context in all these cases is connotive of inability or incapacity to attain the desired allocative efficiency. Each case of market failure provides a potential opportunity for government action garnering benefits in excess of costs. Consequences of market failure in case of poor information and monopoly are well understood; inherent conflict of interests that remain to be resolved through reformative measures in these two cases are also well-articulated, though each requires public interventions of its own kind more involved when information on market of future goods are non-existent. Such resolution may not, however, call for supplementation of the market mechanism. Externalities, in terms of costs, manifests in harmful effects of an individual's or a group's action on the welfare of non-involved secondary persons. In such an event, social costs exceeds private costs. In terms of benefits, externalities manifest in beneficial effects of group or individual action on the welfare of non-paying secondary parties. In such a case private return is less than the social return resulting in lower investment in the relevant ambit of production and consequent missed opportunities if left to the private enterprise alone. In the situation involving externalities the policy makers may carefully consider (a) the magnitude of external costs/benefits relative to the cost of government action; (b) the ability of the market to devise means of dealing with the problem without government intervention; and (c) the possibility that the political majority may take the intervention too far if the external costs imposed on the minority are not fully considered. Consumption of public goods result in spill-over benefits to secondary parties. It is costly or impossible to withhold such a good (e.g. national defence) from persons who do not pay for it. In such a case the market system breaks down as everyone gets an incentive to become a free rider. And when everyone tries to get a free ride, production of public good dwindles calling at times for intervention by the government. Private sector philanthropic and entrepreneurial solutions to certain public goods problems show us that the government action is not the only corrective way. In resolution of conflicts in such a field this limitation has to be considered.

12.11 Weaknesses in Public Sector Intervention

12.11.1 At least four factors weakening the case for public sector intervention or operation may be identified. First, possibility of voter ignorance and inability to recognise costs and benefits of public sector operation fully is quite high. In a representative democratic system, voters are the originators of public sector intervention and operation. The applicable self-interest postulate of free enterprise based democracy assumes propensity of voters to elect representatives offering greatest personal gains relative to personal costs. The group decision - making delinks outcome of an issue to the choice of the individual. Voters, as a result, are likely to remain uninformed on many such issues. They may make their evaluation of representatives on the basis of subset of issues that are of greatest importance at personal levels. In such a situation, legislative decisions are not always expected to pass the economic tests of productivity or efficiency. Second, working in the aforesaid backdrop, the politicians find it profitable to support special interests reflective of rent seeking and individual or group advantage at the expense of others. This follows from a postulate of public choice theory that pursuit of votes is the primary stimulus shaping the behaviour of politicians. More often than not, interests of bureaucrats may complement those of the interest groups in such cases. Bureaus may have propensities to expand their programmes to deliver benefits to special interest groups who in turn may work with the politicians to expand their bureau budgets and ambits and career prospects and pursuits. Constitutional provisions in respect of equal treatment of all under law, removal of exploitation and regional disparity, ensuring religious, racial and gender equality and their strict adherence is one definite way to limit the power of special interests in using the political process at the expense of others. Third, in the public sector, where decision-makers do not have private property rights over the resources they control, the short-sightedness is another source of conflict between good politics and sound economics. In the public sector, voters, politicians and bureaucrats may support projects and programmes that promise eye-catching short-run benefits at the expense of not easily-identifiable future costs. In such a situation, there is always a bias against legislation that involves projects with immediate and easily identifiable costs and high future returns. Finally, economic incentive for operational efficiency in public sector enterprises is small. This does not indicate that employees in the public sector are necessarily incapable. It means that in public sector operation there is no direct relation between work and creativity on the one hand and public compensation on the other. No individual or group of individuals can capture relatively small profits yielded by improved operational efficiency in the public sector. Research over the last several years have shown that private enterprise, compared to public ones, has provided goods and services in the same field more economically or efficiently.

12.12 Need For Developing Institutions

12.12.1 Public choice theory, in recent years, shows that political action or government intervention can and, at times, does reduce economic inefficiency emanating from market failure. At the same time it also indicates that unconstrained intervention may result in programmes that waste resources. Understanding the shortcomings of both the market and the public sectors is important if we want to improve our present economic organisations. In delineating reform of the system, the challenge before us is to develop political, social and economic institutions, capable of bringing, to the fullest extent possible, the interests of producers, politicians, bureaucrats and voters into harmony with the general welfare of the society. And this challenge can be taken up by the parliament functioning in a milieu of democratic environment and partnership within and around. Likewise the challenge can be met

better by the political parties and various interest groups through adequate awareness and dialogues across the relevant income classes and voters.

12.13 Supporting Private Enterprise By Public Sector

12.13.1 Taking all these into consideration, as of now, the public sector will do well if it is geared up and pressed into supporting the private enterprise in all productive sectors of the economy. To this end, building up infrastructures, especially for flood control and large scale irrigation and generation and transmission of power, will be important steps. Given the preponderance of small and marginal farms throughout the country, large investment and multisectoral approach are needed, and the riparian dimension of water management, flood control and large scale irrigation are likely to remain as areas of selective and major intervention by the public sector. Small scale and minor irrigation involving utilisation of ground and surface water by individual or group of farms will be better accounted by the private owners and operators. The other important area of intervention by the government seems to be the financial sector in its parts meeting the needs for long term investment in capacity creation in the private sector and targeted lending aimed at poverty alleviation. The structure of deposits as is prevalent now may not allow the system to meet the need for long-term credit for industrial development. Besides, there are requirements for sponsoring, if not setting up, venture capital institutions and investment companies for deepening the finance. Credit for the poor, like wise, in the current situational context of widespread assetlessness and pauperisation, needs innovative credit support for amelioration and guarding against large scale social discontent. Added to these will be provision for facilities for health care and human resource development. Private sector enterprises are not likely to provide these in most and remote areas. All these will be taken up as definite items in the agenda of action of the government. And finally, there remains quite a large room for public investment in adaptive research and development in both industry and agriculture. In this context governmental sponsorship and intervention may be well suited in such fields as development and export of computer softwares, CAD and CAP, biotechnology, genetic engineering, survey and exploration of natural resources, etc.

12.14 Organisational Reforms in Public Sector

12.14.1 Related to the governmental intervention in these and other areas in support and supplementation of the private enterprise, is the issue of making organisational reform of the public sector agencies. As experience has it, most of the public sector agencies (BADC, WDB, PDB, BFIDC, etc.) were set up to attain objectives laid down at the time of their setting up. Due to changes in circumstances and generations of demand for services or products in newer ambits or areas, the objectives as well as the size and the nature of the relevant organisations warranted change or modifications. As has been observed, such changes were not brought about in most cases. This has made some parastatals somewhat aimless and ineffective in public estimation. The recent decision to abolish or down-size BADC is a case in point. In order to sustain the government's capacity to make the right kind of intervention in changing circumstances, such organisational changes and modifications should be slated for. The process may create discomfort or generate protests on occasions and at times. But despite that, a charted course is likely to be cost-effective in the relevant field of service, regulation or promotion and consequently, eliminative of avoidable conflicts.

12.15 Fast Track in Public Sector

12.15.1 The other important area of reform in this field will comprise creating scope for fast tracks in careers of employees serving the government and the parastatals. As of now, the track is the same for all irrespective of merit and performance. As a result service and product emanating out of the public sector as a whole are almost always inept and sluggish and often unsatisfying. Really meritorious and ambitious people are not attracted into the government and the parastatals these days. To attract the best and the brightest into public service and to obtain the most out of them in their creative years, setting up a different and fast track for the best performers and the standard setters will have to be evolved on the basis of logical analysis and through consensus of the relevant role players. Service rivalry, postponement of reforms, politicised and indisciplined conduct as have manifested out of the malaise thus far, testify to both the extent of inherent conflicts and the urgency to resolve them expeditiously.

12.16 Relation Between Central and Local Governments

12.16.1 In Bangladesh context elements of conflict are existent in the relationship between the central and the local governments. Despite a clear constitutional mandate to promote local government institutions with special representation of peasants, workers and women (article -9), no consistent programme has thus far been undertaken to this end. As of now, zilla parishads at district level are without elected heads; union parishads so far formally delinked from political affiliations at national levels are still not adequately heard and attended to; co-ordinating roles of elected representatives at thana level are yet to be defined in legal and functional terms; and local government bodies in three hill districts need to be organised to give shape and meaning to the recently concluded peace treaty with the insurgent tribals. The local government as a system have inadequate sources of locally raisable resources. As a result, responsibility, responsiveness and accountability to the local people cannot be cherished very much as uniform principles of administration and management at various levels and throughout the country. This inadequacy has placed a limitation on the process of participatory development as is envisaged now.

12.17 Needed Reforms of Local Government

12.17.1 Promotion of local government institutions, in the present context, may call for reform in at least four areas. The process of reform in these areas, in turn, will require resolution of conflicts, explicit and implicit, amongst the relevant role players. In the first place, appropriate organisations headed by elected public representatives capable of management as well as development at thana and district levels have to be set up. These bodies along with union parishads and pourashavas should be given more functions (e.g. in fields of primary health care and education and local irrigation infrastructure) and adequate co-ordinative and cohesive authorities. Action along these lines may be conflictive with the current situation wherein local MPs and officers of the central government tend to interfere and dominate. Secondly, all local bodies should be made responsible to the local people. To this end, the relevant law should provide for recall or removal of chairmen or members following passing of no-confidence motions against them by the local constituents or other members of the local bodies. As of now, even if a no- confidence motion is passed, chairman of a local body is removable only by or under the authority of the central government. In such a situation, the representatives elected to the local bodies tend to forge allegiance to the power that be at the central government vitiating the principles of responsibility, responsiveness and accountability to the local constituents.

Reform along these lines may not be implicative of erosion of the authority of the central government; on the contrary, such reforms will yield desired societal gains for the local people and in the process reinforce the central government in the mechanics of development. Thirdly, all these bodies excluding city corporations and pourashavas may be given wider fields of taxation or alternatively keeping their current fields of taxation unchanged, a pre-determined percentage share, say 12% of all revenues raised by the central government. If decision to share the revenues of the central government with the local bodies is taken, a principle for their equitable distribution on the basis of, inter-alia, (a) population, (b) development needs, and (c) level of local resource raising may be adopted to stave off exogenous considerations in distributing the pie. Also, periodic finance commission may be set up and used in a continuously changing context for determining the over all share of the local bodies in the central government's revenue and its distribution amongst the relevant local bodies in accordance with appropriate principles. This may imply a transient erosion of power and authority at various levels of the central government. This is likely to be more than made up through strengthening realistically the local government bodies for providing more and better civic services and higher utilisation of physical and social capital in their respective areas. An overriding adherence to the constitutional mandate by the legislators together with a strong commitment of the executive organ of the state for obtaining the maximum yield out of a given investment in physical infrastructure and social investment is likely to result in actions in right directions and resolution of conflicts in this regard. The recently completed report of the Local Government Commission has delineated actions and steps to these ends, which needs expeditious consideration by the government and the parliament.

12.18 Functional Delegation

12.18.1 Finally, following the tradition built up in Japan, the central government may do well by delegating responsibility for implementing selected local projects planned and funded by it to the local government bodies. Primary schools within an union, health centres or bridges within a district, for example, may be given to the relevant union parishad or zilla parishad for implementing out of project specific grants made by the central government. This way the technical capability of the local bodies may be enhanced as well as local participation and more efficient use of resources ensured. In some cases, established facilities in fields of health care, education, relief or welfare funded and implemented by the central government may be given to the relevant local bodies for operation and maintenance. This way the delivery mode of services may be desirably improved.

12.19 Local Government and NGOs

12.19.1 In recent years, quite a number of NGOs -private voluntary development organisations- based largely on grants and assistances from external sources - have come up to cover almost the entire country. Management of all these NGOs, excepting a few set-up by religious orders, is in the hands of Bangladeshi nationals. They have come to cover disaster relief, education, health, children's welfare, care of the old and infirm, afforestation, environment improvement, conscientisation and even election monitoring and voter's education. Most of them are registered under the Society's Act; a few have been incorporated as non-profit making companies under the Company Act as well. In all cases responsibility for management and accounting are well defined and laid out under the relevant laws and by-laws as conditions for receipt of external support. Given the traditionally weak functioning of the local government bodies vis-a-vis rather resourceful operation of NGOs and their relative success in the fields of

education, health care and conscientisation in a few local areas, some seem like having an idea that NGOs may over years make the need for local government bodies minimal or even unfelt. In some local areas, seething conflicts as between the relevant local government body and operating NGO apparatus have also been noticed.

12.20 Supplemental Role

12.20.1 In the future course of development such perception of conflict may not have a room for serious consideration. NGOs in their resourceful and innovative operation in local areas may supplement efforts of the central and the local government in the relevant fields; they cannot, however, be projected or prepared for supplanting or substituting the formal bodies of the central and the local governments. In fields of health care and education, innovative processes and procedures developed by some NGOs may as well call for emulation and replication by the relevant bodies of both central and local governments. Consensus, based on assessment of needs, performance and resources need to be built up on canalising the efforts of NGOs and vamping up the roles of local government bodies in this backdrop. Discussions and deliberations across various fora and relevant organisations for example, in the recently formed government-NGO Consultative Committee will be called for to fine tune the calling from time to time in this regard.

12.21 Private Property Contractual Rights and Obligations

12.21.1 Use of the private enterprise as the main vehicle for development demands delineation and enforcement of (a) private property rights and (b) contractual rights and obligations expeditiously, firmly and at minimum costs to the parties or the disputants. As experience has it, scope and span of economic transactions amongst multitudes of private producers, suppliers and consumers cannot widen smoothly till these demands are met institutionally. The institutional components in this field are: (a) the laws defining property rights and contractual obligations and prescribing penal measures for their violations and (b) the administrative-judicial system enforcing these rights and obligations and awarding penalties for their violations. Knowledgeable observers in this field opine that the set of laws enacted till date and in force now, despite their need for some marginal modifications, is adequate. The major problem, however, lies in their enforcement. The administrative - judicial system seems to have wide scope to improve upon its present level of performance in this regard. The procedure followed and the pace maintained in enforcing this set of laws adjudicating disputes that arise in relation to them are cumbersome, time consuming and costly. Shortfall in enforcement is perceived as a weakness of the system and erodes public confidence on the system. This perception limits the span of *suo moto* acceptance of legal rights and obligations by a large number of economic transactors. It will remain yet another challenge for the leadership to reform the system and to account for speedier, firmer and economic enforcement and adjudication to limit if not, to remove, conflicts in the transaction process pursued by multitude of producers, suppliers and consumers. Commitment at highest levels of the executive and judicial organs of the state together with close monitoring and periodic target-oriented training of the relevant personnel seem to be in order to this end. For supporting newer and smaller producers, suppliers and users in this regard, setting up of small causes courts in selected urban centres is likely to be helpful also. Adjudication of small disputes among small but budding entrepreneurs expeditiously and economically makes the business environment beautiful for spurring small activists into larger ambits of innovation and production. Obviously, the magnitude of the problem of enforcement as a whole may appear somewhat awesome at the start. Initial success in this field, however,

will make the relevant role players to take their rights as granted and obligations invariably dischargable by the society. Following initial steps in a time-bound frame this realisation by the majority is likely to lessen down conflicts and extend the scope and the span of economic transactions in the free and primarily private enterprise system.

12.22 Modifications of Laws on Property Rights

12.22.1 The laws on property rights that need modifications, in order to meet the changed circumstances, call for an in-depth examination and delineation. This will be undertaken by the recently constituted law commission composed of legal experts and practitioners in the field. The work of the commission and implementative actions on its recommendations will be a continuous process.. In the interim period, a number of areas, however, may be identified for immediate attention and correction for exuding confidence all around and spurring economic activities across various classes of producers and entrepreneurs spearheading the free enterprise. These areas are:

- a. land tenancy and tenure, particularly in respect of definition of family/household, agricultural use and agriculturist, subsoil or subterranean rights of 'maliks' (owners), cognisance of offences and penal provision for violation;
- b. vested lands and properties in the plains and common land in hill districts and tribal areas;
- c. copy rights, particularly in relation to the Berne Convention 1954, patent rights vis-a-vis the Agreement on Trade Related Aspects of Intellectual Properties (TRIPs), administered by the WTO and penal provisions for violations;
- d. insolvency and liquidation of business firms and industries, particularly, in relation to jurisdiction, cognisance, and expeditious processing and disposal;
- e. execution of decrees in relation to money suits;
- f. protection of minority shareholders of public limited companies and employer-employee relations in formal or organised sectors;
- g. strikes and lockouts and civil commotions; and
- h. unfair or inequitable access to or treatment by public utilities.

12.23 Marketisation and Control of Private Property

12.23.1 Earlier, in the heat of the drive at development based primarily on collective efforts and the public sector, the emphasis, clearly unexpressed though, was on the control of private properties. Recognition of the people as owners and controllers of the instruments and means of production as in the constitution, in the current context of marketisation should be understood as an enabling provision for using private property rights as an effective spurrer of production and commerce i.e. promoter of `constant increase of productive forces' throughout the country for the benefit of people as mandated by the constitution. This understanding seems to have already converged out of deliberation within major political parties. The labour in the organised sector, however, still seems to remain largely outside this understanding.

12.24 Administration of Criminal Justice

12.24.1 Apart from the laws relating to property rights and contracts, administration of criminal justice is another conduit for resolution of conflicts amongst individuals. In recent years as a litany of the neglect and partisan administration in the past crimes did not decline. The crime combating machinery of the government has definite scope for improving upon their present

level of performance. Socio-economic development cannot be accelerated in a situation pegged by frequent and widespread crimes and criminality. Observers point out that the current crime situation is yielded by (a) eroded values; (b) inadequate and inequitable opportunities for livelihood and social mobility; (c) anticipation of criminals based on past experience that criminality is condoned for political partisans; and (d) loss of confidence in the establishment. Erosion of values is partly the resultant of emphasis on individual effort or private enterprise propelled by forces of greed and profit. There is no denying that greed and profit are the very forces that propel private enterprise. In a value system conducive to private enterprise, greed is satisfied and profit earned by savings, hardwork, and creativity, and not by peddling of patronages centring around influence over, and access to the power that be at various levels of the society or the government. In this context, greed and profit-centred values need to change emulating of virtues of austerity, hard work and creativity. Seeming erosion in current values may thus be corrected by including, sustaining and cherishing these positive elements of the free enterprise system. Such an acquisition may come over time through the educational system and, following cues and examples given by leaderships in respective ambits of production and management, may enter into the cultural norm of the society as an important constituent.

12.25 Ad-interim Steps

12.25.1 In the interim period, however, a number of steps seem to be in order for attaining and sustaining equal opportunity and social mobility. These are :

- a. quickest possible spread of primary education and health care;
- b. relatively more emphasis on scientific and technological education and training;
- c. merit-based and need-blind admission into higher educational and training institutions followed by need-based extensive and full financial support by central and local governments and private bodies and endowments;
- d. depoliticised merit-based affirmative recruitment, and performance-based promotion and deployment in government and parastatals and other organisations receiving public financial support or lawful recognition;
- e. equitable access to public utilities and credit institutions; and
- f. enactments enjoining, promoting, and compelling non-discrimination on grounds of gender, religion, race or political affiliation in all public and private organisations.

12.26 Role of Political Leadership

12.26.1 Confidence in the establishment may be sustained and cherished by the administrative-judicial system. The process is likely to be accelerated through provision of positive cues by the political leadership both within and outside the government. Within the government, the political leadership should always encourage dispensation and decision-making within the formal structure and following the formal procedure of the government. Informal structures and procedures may be used to supplement the formal ones - not to supplant them as has been the case in the past. All concerned may note, loudly and clearly that if in the process of governance informal structures and procedures supplant the formal ones, the state as an organisation, as the theory has it, ceases to exist. Likewise, the political leaderships outside the government has to be conscious of the societal requirement to correct the process of governance as constructive critics, and not to supplant it in their drive towards political ascent and power.

12.27 Impartial and Fair Dispensation

12.27.1 Impartial and fair dispensation by the administrative and judicial systems without fear or favour is a major building-block of public confidence. An apprehension of partial or unfair dispensation may make an accused, even if he is innocent, flee off as a fugitive or drive him out of the society as a rebel. Similar apprehension will encourage people at various levels or local areas to dispense out immediate justice as perceived by them without taking resort to the institutional course. The other important building-block is expeditious dispensation. Inexpeditious and cumbersome dispensation tantamounts to denial of decision or service desired by the people from the establishment. This makes them avoid and ignore the establishment and, at times, to take law in their own hands, thus undermining the establishment. Making dispensations and decisions expeditiously at all levels need, therefore, be aimed at as a conflict-preventive measure.

12.27.2 Three Needed Steps: At least three steps seem to be in order in transforming the administrative-judicial system in the right direction. First, as mandated by the constitution (article-77), the office of ombudsman should be set up. With powers to investigate any action taken by executive organs of the state, this will provide an important input to make the decision-making in the government appropriately transparent and create ethos cherishing accountability and responsibility in public service by all public servants and authorities. Second, parliament may expeditiously enact laws regulating service conditions of persons in the service of the republic as mandated by the constitution (article-133). Till such time an appropriate legislation follows, the constitutional recognition of the traditional government servants as persons in the service of the republic, dispensation of services and decisions by them may not be as impartial and fair as desired. Needless to mention, partiality and unfairness in this process are likely to generate discontents, protests and other manifestations of social conflict. Third, the most important conduit for resolving inter-personal and inter-body conflicts is an independent judicial system. At levels where adjudication by the judicial system touches, affects and benefits the multitudes, constituents of its independence, at times and on occasions may be lacking. To obviate discontents and conflicts arising as such, the founding fathers enjoined in the constitution separation of the judiciary from the executive organs of the state (article-22). Despite rhetorics over years, this has not been done in relation to the lower judiciary. The task of separating the judiciary from the executive organs of the state warrants completion for sustaining amity and consequent stability of the societal frame.

12.28 Corruption

12.28.1 The administrative and judicial systems are usually perceived as responsible for combating corruption. Corruption is a crime committing of which results through collusive arrangement between committing persons and persons legally and morally responsible for combating such crimes. When persons legally responsible for combating the relevant crime abets such committing they also commit the same or similar crime. Viewed as such, prevalence of corruption is indicative of not only scale commission of crimes but also erosion of the state apparatus legally and morally responsible for combating crimes and punishing the criminals. Corruption, as of now, is generally believed to be quite widespread. It is perceived as a societal disease impairing the vitals of the society. This, in turn, is ramifiable in obfuscating and limiting the process of socio-economic development of the country. Such an impairment and obfuscation make people lose confidence in the system and breed conflicts as between those

who are parties to and gainers from corruption and those who are not and as such stand to suffer or lose from corruption.

12.28.2 Categories of corruption: Analytically, corruption may be grouped into four categories. First, corruption may creep into the formal decision-making process of the state at high levels. The constitution, the laws in force under the constitution, the state organs and the authorities set up under the constitution or laws under the same, delineate the formal structure and the procedure for decision making in the state. If in this process informal structures and procedures supplant the formal ones, vital state decisions may not be taken in public interest. Decisions in such cases are either reflective of abuse of formal power or extension of authority not required or warranted under the relevant law. In such cases state decisions are the resultants of access, influence and patronage and serve vested interests of groups or quarters of the decision-makers. As theory has it, these are the cases of state corruption or corruption at high levels. Second, corruption creeps in administering regulations and providing services in non-economic fields of state activities or operations. This may be categorised as departmental corruption in non-economic fields or transactions. Undue and underhand payments for correcting land records, servicing or avoiding warrants and summons issued by lower courts and quasi-judicial authorities, issuing passports, admitting patients into hospitals or students into better schools or colleges and getting driving licenses or fitness certificates for vehicles are examples of corruption of this category. More often than not, such payments are made to expedite the process of certification in respect of conformity with the relevant regulation or receiving the needed administrative service. These do not result in giving benefits or services which the underhand payers are not entitled to; these merely expedite or smooth out the arcane or otherwise ineffective administrative process. The resulting transaction costs in such cases of corruption is relatively lower. Third, there are cases of under-hand payments to departmental decision-makers for economic transactions benefiting the payers at the cost of their competitors or peers. These may be categorised as departmental corruption in economic fields or transactions. Making specifications of a set of work or a plant in conformity with advantage to a chosen contractor, supplier or manufacturer in preference to others, award of contracts for or work orders to those having under-the-counter connections, false certification of works done or materials received are examples of corruption of this category. In most cases such payments yield direct pecuniary benefits to the payers to which otherwise they may not be entitled. The transaction cost involved in such cases is relatively high. As observers perceive, such cost usually accounts for a portion of pecuniary benefits accruable to the first party to the collusive arrangement. Finally, corruption manifests in avoidance of lawful pecuniary obligations and liabilities in collusion with those entrusted to enforce or adjudicate these. Evasion of tax payment, over-invoicing of imports and under-invoicing of exports, usurpation of other's properties, concealment and use of public properties for personal use, etc., are examples of corruption of this kind. In one way or other, these are cases of misappropriation of public resources or funds.

12.28.3 Corruption at High Levels: Of all these, corruption of the first category i.e. state corruption seems to be the most destructive. Corruption of this type, as already indicated, manifests in taking basic or vital decisions of the state on considerations other than public interest. Constitutionally, all powers of the republic belong to the people and their exercise on behalf of the people has to be effected only under and by the authority of the constitution (article-7). Exercise of these powers has to be thus in, and in furtherance of public interest by constitutionally defined authorities following constitutionally laid down procedures. Considerations other than public interest in decision making in such cases or levels may centre

round personal or group interest. Serving personal interest may yield pecuniary benefits to the decision-maker; serving group interest may strengthen the position of the decision-maker in the group to the detriment of others outside the group. The basic decisions emanate out of the well-defined organs of the state: the executive, the legislature and the judiciary. In case of Bangladesh, a sudden announcement of an erstwhile Minister for Foreign Affairs recognising the government of an intermittent rebel group in Cyprus or appointment of a junior officer as the head of our permanent mission in New York on the basis of his relationship with the head of the government in the 1980s or giving away unaccounted amounts to MPs of the ruling party out of the Prime Minister's Relief Fund as was done in the past may be cited as examples of state corruption originating from the executive organ; legislation providing for tax-exempt import of automobiles for the law makers themselves borders on being an example of not a very good law originating from the law makers themselves. Formation of a special tribunal outside the normal courts for trying persons allegedly committing offences under the ordinary law of the land as was done for the so-called Agartala conspiracy case and willing association of judges at the highest level of the judiciary in such a kangaroo court in the late 1960s may be cited as the other example of state corruption pertaining to or involving a few members of the judiciary. If basic decisions of the state by the executive, the judiciary or the legislature are taken on personal or group considerations, or sold to the highest bidders, then the very social contracts underlying the formation of the state are violated and the public trust reposed on state authorities or organs, betrayed and eroded. Entrenched behind the power of the state and its resources, corruption of this category is the most difficult to combat and contain. Despite the difficulty, given its serious destructibility, this type of corruption calls for utmost attention of all concerned.

12.28.4 Corruption in Non-economic Fields: Corruption involving administering regulations and providing services in noneconomic fields may be considered from the view points of both the collusive parties. From the side of those administering the relevant regulations and services, (a) low remuneration package (b) ineffective hierarchical supervision and (c) inadequate public vigilance are the propelling inputs into this collusive arrangement. From the side of those gaining or benefiting from administration of the relevant regulation or provision of the needed service (a) scarcity and consequent large size of the perceived or the realised value accruing from affirmative administration of the relevant regulation or expeditious receipt of services needed, (b) mad rush for competing out other potential receivers of benefits or services, (c) absence of group unity or action against unethical conduct of the relevant administrators, regulators, service providers and peers and (d) inadequate public vigilance are the originating elements. To combat corruption of this category, these propelling and originating elements need to be controlled or eliminated. Of these one important step will be to increase the remuneration package of the administrators of regulations and providers of services. In case of corruption in such a field, social cost (legal fees payable to the state + payments made to the collusive functionary for obtaining a service or a regulatory benefit) is more than the prima facie legal cost. A part of this divergence may be captured for increasing the formal remuneration package of the relevant regulators and service providers while giving the relevant benefits or service in a corruption-free way. This may be supplemented by decreasing the bloated size of the relevant organisation. The other important step will be in terms of reducing the scarcity value. This may be done by dismantling the unneeded regulation and increasing supply of the needed services. Opening of a clinic in the capital city for instance, may be made to require registration by one authority instead of permission from as many as 3 as is reportedly the case now. All citizens except insolvents and fugitives from the law may be made entitled to passports as a matter of right. Likewise, more schools, hospital beds and street lights may be set up in areas of scarcity

under well publicised programmes. Admission into publicly supported better colleges may be made contingent on merit alone encouraging the gifted students to converge to centres of excellence as a matter of course as is the case in Singapore.

12.28.5 Corruption in Economic Fields: Similarly, corruption involving economic transactions may be considered from the sides of both supply and demand. Underhand payments or gratifications may be demanded by a departmental decision maker only when he has sizeable control over pecuniary benefits of the potential gratification provider. By pursuing (a) vigorous deregulation, (b) expeditious privatisation, and (c) promotion of competition in all sectors of production and consumption in appropriate cases or areas such a position of control can be sized down to canalise departmental operations into promotion of economic activities. Likewise illegal gratification may be supplied or provided by a producing or consuming person or unit outside the government when such a supply is likely to (a) yield high pecuniary benefit, (b) goes unprotested by competitors and (c) is not noticed by the relevant supervisors of the gratification receiver. Promotion of competition in the relevant ambits of production and consumption coupled with internal and external vigilance on transparency or otherwise in decision-making obviously are the steps that are in order in this respect.

12.28.6 Other Corruptions: Corruption involving avoidance of lawful obligations and liabilities is indicative of inadequate adherence to the rule of law and prevalence of elements of a weak state or a banana republic. In such cases, avoiders reach collusive arrangements with the administrators and adjudicators of the relevant laws defining and executing pecuniary obligations and liabilities. Here again, from the side of demand (a) poor remuneration package, (b) lack of professional pride, and (c) inadequate internal and external vigilance are the collusive elements. From the side of supply, (a) ability to influence the enforcing agencies, (b) non-imposition of tax on unhonoured pecuniary liabilities and restrictions on further asset acquisition before meeting lawful pecuniary obligations and (c) inexpeditious adjudication by the relevant courts contribute to the miasma. To make the matter worse, the malaise has its lopsidedness: mostly the rich avoid meeting lawful obligations and liabilities while the poor face stiff enforcement. The widespread loan default in development financing institutions and nationalised commercial banks relative to default of small agricultural borrowers of the 2 agricultural development banks and almost no default in the Grameen Bank is indicative of this. The recent infusion of additional capital in the nationalised commercial banks through bonds guaranteed by the government has shown acquiescence of the state apparatus to absorb the loan default of comparatively big borrowers through permanent transfer of the burden on the shoulders of common tax payers. The legislation debarring candidacies of the loan defaulters for election to the local government bodies and non-imposition of similar restrictions on candidacies for election to the parliament is indicative of a not-very-well-appreciated discrimination breeding discontent in the society. To combat corruption of this category, the contributing factors both from the sides of supply and demand, need to be corrected. Commitment of the government in particular and the society in general will be the basic propellers to account for the needed corrections of the norm and associated circumstances.

12.28.7 Syndication of Corruption: As ardent observers in the field have it, corruptions in all these areas tend to acquire elements of syndication. Syndication in collusive crime committing yields benefits, pecuniary or otherwise, across hierarchies of relevant organisations responsible for providing services or enforcing cleansing in accordance with law. Needless to say when syndication covers the relevant segments of such an organisation, corruption becomes an inseparable procedural element in it in-as-much as it is supported and encouraged across the

relevant hierarchies. This makes it very difficult to combat. In such a situation, the sincere and honest in their minuscule minority fades out as nonconforming and inefficient. This means, in other words, corruption needs to be confronted at the beginning and, in the inherited situational context, right now.

12.28.8 Public Awareness and Vigilance Against Corruption: Ultimately, public awareness and vigilance turn out to be the price of a clean and corruption-free state. While building up public awareness and vigilance as components of a tradition sustaining and promoting democratic governance may take time beyond a life time, freedom of information and media and independent judiciary have much to contribute in the interim span of time. Fortunately for Bangladesh, the supreme court seems to have come up with effective guardianship in this respect. The recent justifiability of judicial proceedings against a former president and a number of ministers on charges of corruption irrespective of their future outcome in terms of innocence or guilt, as upheld by the higher judiciary of the country has set up a tradition of adjudicable public accountability at highest levels. Freedom of press, following recent amendments of laws relating to press and publications and special powers of the government and setting in of an environment of tolerance for views have also come as important bases of vigilance against such corruption. These need to be followed up by an enactment for and in favour of freedom of information entitling and enabling the citizenry to obtain information on matters relating to personal or public interest. Additionally, in the light of experience of other countries, full verbatim recording of deliberations and decisions of meetings of the cabinet, its subcommittees including the purchase committee and taking these outside the cover of secrecy or confidentiality (except in case of security matters) will be helpful. Such procedural reform will impart justifiability of executive decisions following the principle of open adjudication pursued by the judiciary. Formation and operation of an ethics committee in the parliament along with continuous functioning of standing and adhoc committees and open public hearings and deliberations in them will provide restraining elements against possible corrupt conduct at all levels. In addition to the public accounts and public undertakings committees, there should be a standing committee on finance and budget in the parliament. Arrangement should be made for holding more frequent sessions of the public accounts committee and providing adequate staff support for investigation and analysis. All budgetary measures comprising revisions in budget passed and supplementary appropriation should be processed through the committee on finance and budget deliberating and deciding through hearings open to the public. Needless to say, the legislative control over the budgetary expenditures of the executive may become meaningless in functional terms if statements of such expenditures are placed before the parliament after these have already been incurred as has been the inherited practice. To an extent these measures will desirably limit perceived interference of the legislators into executive actions and decisions at national, regional, and local levels vitiating the lawful procedure based on the principle of separation of powers for discharge of executive responsibilities at various levels of the government.

12.28.9 Two Other Steps: In addition to the measures specific to the type, at least two other steps of general nature and to an extent, overlapping with others already mentioned, need to be delineated to combat corruption. First, the political leaderships at various levels may provide cues to the bureaucracy and the society for discharging duties and responsibilities honestly and legally. Such cues should also encourage the political activists and the people to adopt the desired values sustaining and cherishing legal and moral incorruptibility. In this context one may cite examples of political leaderships in Singapore and Malaysia. It needs to be noted, corruption in its various categories will be impossible to combat successfully unless the political

leaderships at various levels of the government can and actually give cues in the right directions. Second, following provision of conducive cues from the political leaderships, the risk of the parties involved in corruption has to be demonstratively made higher than the pecuniary or other benefits accruing to them from the collusive arrangement. This is largely the responsibility of the administrative and judicial systems of the country-having a large scope to improve upon the current level of performance.

12.29 Gender Question

12.29.1 In recent years, questions centring round gender equality have become important and demand to be answered expeditiously. Women comprise 48 percent of the population of the country. Of this, 86 percent live in rural areas. The average age of women at marriage is less than 18 years; on average a woman produces four children in her life time. Social norm against remarriage of widows coupled with an average age gap of 10 years between men and women in wedlock result in 90 percent of widowed population being females. Likewise, women comprise 94 percent of the divorced population of which 54 percent are below 24 years of age. As of now, participation of females in labour force amounts to over 12 percent; in the manufacturing, female participation is over 34 percent; and over 20 percent of all households of the country are functionally female headed. Constitutionally, women in Bangladesh have equal rights with men in all spheres of the state and of public life; they cannot be discriminated against or subjected to any disability or restriction with regard to access to any place of public entertainment or resort or admission to any educational institution on grounds of being women; they are entitled to special provisions in their favour to be made by the state (article 28); they cannot be discriminated against in respect of any employment or office of the state (article-29). In addition to these fundamental rights, prevention of prostitution (article-18) and ensuring participation of women in national life (article-10) are constitutionally accepted as two fundamental principles of state policy. Further, guaranteeing of fundamental human rights and freedom and respect for the dignity and worth of the human person is adopted as a principle fundamental to the governance of the country (article-11).

12.29.2 Situational Considerations: Despite these constitutional rights and entitlements, women across both classes and religions, have quite a scope to improve upon their status and condition in terms of equality with men. If progress in this respect is not made or slowed down, conflict breeding out of gender inequality as already observed, will increase in intensity with fuelling from the borderless information media and fast changing economic circumstances. Specific to the conduits for making progress are the following considerations:

- a. Women's lives are organised, (particularly in rural areas) within a framework of biological, labour and social reproduction of a society in which management of female sexuality is central to the dominant male interest; in this frame high value is attributed to female sexuality; this makes females acutely insecure, requiring a cultural norm of isolation and protection to avoid possible female violation; in this cultural norm, a violated female irrespective of causes or manner of violation, is treated as a female fallen from virtue and left to earn her livelihood in any way she can; in this process, resort to the oldest profession or prostitution by her is acceptable without its being much stigmatic on male customers and patrons.
- b. Under changing economic conditions, the aforesaid cultural norm breaks down, a continuous deviancy from the acquired cultural norm about womanhood starts to win over degradation of women as human persons; to accentuate such a break-down, dynamics of those who break the norm, those who tolerate the breaking and those who

uphold the norm need to be assessed and understood; as is perceived such a breaking down has its class dimension; for the poor material or economic circumstances may make men encourage women to break the norm and come out of chains of isolation and protection.

- c. As women come out of isolation, veils and chains into a working and pulsating lives, they are likely to confront the 'double day' and consequently even 'double exploitation' through the interplay of gender and class relations; the prevailing gender relations do not usually release them from the primary responsibility for homestead chores even when and after they enter the formal work place or the job market. Thus an extension of female participation in male dominated work-world needs to be accompanied by changes in traditional codes of household duties enjoining amongst others, cooking of meals and rearing of children on females alone.
- d. Evidently, there is male bias in the set of family laws in force; women across both classes and religions have to struggle over their (i) inheritance rights in natal family; (ii) rights to choose husbands; (iii) sexuality and pregnancies in marriage; (iv) rights to the dowry which usually accompanies her at marriage; (v) property rights in the event of husbands' death; (vi) rights over property and to subsistence in the event of divorce or desertion; (vii) custody rights over children, their subsistence and education; and (viii) procedure of separation and divorce. The laws relating to nationality in marriage, equality of pay, maternity leave, protection against sexual harassment at work places, etc., are either absent or unenforced.
- e. Equality apart, research across countries in recent years shows that female education has marked negative relation with fertility and infant mortality and strong positive relation with life expectancy; likewise schooling is found to have important influence on choice of number and quality of children; these are effects that influence long term growth of a society. Specific to Bangladesh, equality of women with men is likely to have positive effects on poverty alleviation. The female headed households constituting over 20 percent of all rural households are about the poorest reflecting widowhood, divorce and abandonment, all virtually uncared for by the society.

12.29.3 Policy Measures: These five considerations point out as many mutually reinforcing policy measures fraught with elements of social and economic conflicts:

- a. Breaking the cultural norm centred round high valuation and consequent protection of female sexuality: this is likely to create and even intensify conflict with the fundamentalists and uneducated male chauvinists; widespread liberal arts education, female literacy and collective effort by conscious and educated women to break the traditional gender codes are likely to limit such conflict down to its ultimate winning over by the forces favouring gender equality;
- b. Providing women access to power through access to material resources: to this end some definite ways are: (i) credit support following the principles developed by the Grameen Bank and some NGOs working in the field; (ii) adopting a system or norm for joint registration of properties by married couples during marriage; (iii) reform towards equitable inheritance law; (iv) affirmative female employment policy; and (v) election of women members of the parliament and local government bodies (against seats reserved for women) by universal adult franchise of the relevant constituencies;
- c. Changing the traditional gender code of division of duties of males and females: this can be done through education, orientation and conscientisation; NGOs working in the field have already shown ways following which an initial and widespread break-through can be made; public debates, open dialogues and affirmative actions by women

organisations are likely to have positive effects; opening up all modes of employment in the government and parastatals to women is likely to provide the needed pilotage in this regard;

- d. Making appropriate reforms in laws relating to family, inheritance, parental responsibility, work place equality and nationality in marriage; these have to be taken up by the parliament in conformity with the constitutional provisions and mandates; and
- e. Extending education and health facilities with an effective and affirmative bias towards women: to this end, the recently adopted subventions and supports to female education in secondary schools and physically extended health care and family planning facilities are steps in the right direction; these steps need to be strengthened through curricular reform and improvement of the health and related service delivery system.

12.30 Structural Adjustment

12.30.1 In the economic realm, Bangladesh has already set its course on structural adjustment. The starting point on this course - macro-economic disequilibrium - has largely been corrected and already been almost passed. At this time, restructuring calls for (a) expeditious deregulation and privatisation in keeping pace with trade liberalisation and reform in the financial sector; (b) increasing savings and investments by linking them to high returns and profits; (c) decreasing the bloated size of government and parastatals and state owned enterprises and (d) increasing exports through more efficient use of labour. These are fully consistent with broad based growth sharable across all income groups and capable of reducing poverty over time. In the short run, programmes aiming at these objectives have elements of conflict; existing distortions and privileges are likely to be defended by politically powerful groups, e.g. protected industries and organised and politicised labour; domestic demand-reducing measures like withdrawal of subventions and subsidies are likely to hurt the poor; cuts in public spending at least in the short run may limit down social services, transfer payments and safety nets. Given the commitment for adjustment, these elements of conflicts may be sized down in terms of adverse effects, by carefully designing the adjustment programmes in the light of poverty profile and its short term indicators. These profile and indicators may be used to establish a base line for monitoring poverty so as to associate the structural adjustment programmes with the socially corrective measures aimed at target groups directly and by widening access to the relevant public services.

12.31 Areas of Attention

12.31.1 Specifically, three major areas call for attention in this context. First, reduction in the size of the government will call for shaking off redundant employees, mostly at lower levels and freezing the size of organisations in areas where marginal productivity is low or zero (e.g., defence and regulatory areas after some points). The pains in the process may be turned into gains by encouraging and attracting the throwouts and fresh employment seekers into directly productive self-employment through opening up access to technology and credit and cherishing higher productivity through increasing the size of return envelope for the remaining productive ones. This can be facilitated through reaching an understanding among major political parties and labour groups accepting structural adjustment as an economic *sine qua non* in the present situational context. Second, the problem of landlessness and assetlessness has to be addressed in the short and medium terms. The long term growth potential may not be justification enough to postpone ameliorative measures at the initial stages. At these stages, extensive investment in flood control and irrigation is likely to increase the labour component of agricultural production. In the process, intensity of land utilisation coupled with the spread of water-seed-fertilizer

technology will increase farm employment. Added to that will be required firmer enforcement of the provisions of Land Reform Act, 1984, prescribing the shares of the landlord and the sharecropper. At the same time, opening up opportunities for off-farm employment and providing access to credit and technology to this end will have to be targeted in order to obviate discontinuity in the social frame in the country side. And third, investment in social sectors will have to be increased. To an extent this will be possible through reduction in or freezing of unproductive expenditures in the government and parastatals. But even then, it needs to be noted, investment in social sectors can be increased sizeably only on the basis of deep political commitment of, and firm consensus amongst major political parties and interest groups.

12.32 Dictates of Comparative Advantage

12.32.1 In an opened-up competitive economy, following the postulates of structural adjustment, production for consumption within and export abroad can continue and expand on the strength of comparative advantage. Potentially, we have 3 elements of such advantage: (a) gas-based cheap power; (b) abundant and cheap labour; and (c) efficient and economic management. For keeping unit price of power lower in comparison with that charged, say, in Myanmar, India, Nepal or Srilanka, enormous system loss that pervades power distribution in this country has to be arrested. This will bring the policy makers in serious conflict with the robbers and suckers of the system-unscrupulous users of power and predatory workers. Given the importance of power and its required cheap availability, an iron-fisted action is called for to eradicate the malaise. Any softening down in this regard will pose a threat to the nation's survival in the current globalised context. Likewise, despite rhetorics and platitudes poured out or used in the realm of labour relations, economic necessity will require us to keep labour cost in relation to a unit of production comparatively lower than that in other competitor countries. Given this starting point, wages of labour should be monitored and promoted so as to allow increase in them only in sync with increase in labour productivity. To attain and sustain societal success on this front, consensus will have to be built up among the major political parties and labour groups around the aforesaid postulates or principles. To this end, segmented collective bargaining within the bounds of the relevant laws instead of politicised control or manipulation at national levels as is the practice now, should be encouraged. This will yield higher wages in sub-sectors as will be permitted by increase in productivity without disrupting cost of production elsewhere. Considered currently, unquestionably management in private as well public sectors has wide scope to improve upon. This can be done over time through revamping the education system in terms of directions as well as quality of management. The newer and needed directions may include extensive facilities for turning out more MBAs and BBAs and lesser MAs and BAs in literature and culture, for example, emphasising newer fields like process engineering, construction management, quality assurance, technological development, informatics and even educational and health administrations. Besides a management culture based on hard work, sincerity, creativity, innovative attitude and hands-on approach to problems at hand need to be created, sustained and cherished. Various professional bodies may be encouraged as catalysts in the process. The advantage that a manager in Bangladesh equally productive on the floor as one in a developed country, for example, can be hired and retained at one-fifth of the modal cost in the latter has to be secured and turned into a continuous process of making profit and expanding production within and without.

12.33 Caveat in Population Control

12.33.1 Nutrition and Education: The country has already attained marked success in population control measures. This success is not, as observers in relation to experiences in other developing countries point out, without caveats. First, birth rate accounted by affluent families has gone quite down in relation to that accounted by the poor. One result of this is manifested in malnutrition of the majority of the nation's children. As an estimate has it, out of every 4 children born this minute in Bangladesh, given the continuance of the current nutrition pattern, only 1 will be physically and mentally healthy person in 15-18 years from now; the remaining 3, for want of nourishment and continuance of wastage will be physically and mentally handicapped or retarded. The possibility of the nation's becoming a collection of retarded lesser beings in its majority looms rather large. This needs to be attended through delineating long term general programmes as well as short-term target-oriented measures. Second, more children produced and reared by the poor seems to have put up a social demand on continuance and extension of the public education system. As experience has it, cost-based education in a private system mostly meets the needs of children of the relatively affluent. In this context, while encouraging setting up and operation of private schools and institutions for higher education, extension of education by the central and local governments and increasing their utilisation for overall human resource development will have to be provided for.

12.34 Promotion of Social Tolerance

12.34.1 Conflict in the process of socio-economic development is generated out of social intolerance as well. As tradition of tolerance needs to be created, sustained and cherished to accelerate and stabilise the process and as experience has it in other countries, educational system perhaps provides the most significant input for creating ethos sustaining and cherishing tolerance, freedom of thought and non-conforming attitude required to break through the frontiers of knowledge and technology. The inherited emphasis on madrasa education, in relation to religious education otherwise pursuable by other religious communities on their own and consequently, at the expense of scientific and technological pursuits in general, may be latent with elements of discomfort in this context. The education system on this ground needs moulding and reforming. In the absence of liberal arts based education and science-centred pursuit of knowledge, the system in its parts may degenerate into springboards of fundamentalism, intolerance and consequent conflicts. All relevant role players - politicians, educators, social opinion leaders and intelligentsia will do better by debating these issues for arriving at a consensus.

CHAPTER XIII

AGRICULTURE WATER RESOURCES AND RURAL DEVELOPMENT

Agriculture

13.1 Introduction

13.1.1 Agriculture plays a vital role in the growth and stability of the country's economy as is indicated by its share in GDP, employment and export earnings. At present, it accounts for about one-third of GDP and employs about two-thirds of the labour force. Exports of agricultural primary products accounted for about 12 per cent of total exports in 1996/97 and if exports of agriculture based intermediate and industrial products (leather, jute) are taken into account, its contribution comes to nearly 24 per cent. If the newly emerged ready-made garments which contribute as much as 51 per cent of export earnings is viewed in domestic value added terms, agriculture is the main source of export earnings of the country. Apart from these, the role of agriculture is unique for food security and nutritional status of people. However, as industrialisation proceeds, the output of agriculture will represent a declining share of the gross output of the economy while the share of manufacturing and services sectors will increase. Although the contribution of agriculture to the economy is likely to decline, it will continue to be the single largest contributor to income and employment of the rural population in the foreseeable future.

13.1.2 Crop agriculture represented a share of about 24 per cent in total GDP and about 73 per cent in agricultural GDP during 1996/97. Within crop sub-sector, foodgrain, particularly the rice crop dominated the country's agricultural scenario in respect of both cropped area and production claiming a share of 74 per cent and 54 per cent respectively in 1996/97. Thus, development of rice crop has substantial impact on the sector's performance. There has, however, been shift in the composition of agriculture over the past few years as indicated by gradual decline in the share of crop agriculture and increase in the share of non-crop agriculture (NCA) which consists of livestock, fisheries and forestry. The NCA, particularly the livestock and fisheries, have, of late, taken off largely through private sector initiatives showing robust growth of 7.98 per cent and 8.60 per cent respectively in 1996/97. Hence, it is envisaged in the Plan to develop an integrated agriculture including crops, along with food management, livestock, fisheries, forestry and environment through more efficient utilisation of available land and water resources for sustainable agricultural growth.

A. Crops

13.2 Review of Past Performance

13.2.1 Bangladesh made steady progress in crop agriculture in the post-Independence period. The cropping intensity increased from 148 to 179 per cent and foodgrain production almost doubled during the period from 1969/70 to 1992/93. Contributing about 75 per cent of the value added, crops form the largest sub-sector of agriculture. Rice is the dominant crop and largely determines the rate of progress in the agriculture sector and to a significant extent, that of the non-agricultural sectors. It covers about 75 per cent of the cropped area and accounts for about 70 per cent of the value of crop output. In fact, the entire growth in crop production is due to the growth in foodgrain production, particularly rice. Yield of other non-cereal crops such as pulses, oilseeds and vegetables almost stagnated, while that of wheat did not increase markedly.

13.2.2 In 1993/94 and 1994/95, foodgrain production declined as a result of depressed prices and natural disasters, particularly floods and droughts in the north-west, which is the country's surplus grain production region. The average foodgrain production during these two years dropped to 18.71 million metric ton (mt) from the average of 19.31 million mt during the preceding three years from 1990/91 to 1992/93. While drought conditions prevailed during these years, the decline in rice production in 1993/94 also was due to both damages by floods and the farmers' response to the fall in the price of rice in the preceding year as evidenced by more than 4 per cent decline in fertiliser consumption, more than 2 per cent reduction in area sown and similar decline in irrigation command area. In 1994/95, total foodgrain production was only 18.17 million mt as against the expected production of 20 million mt. This trend started improving from 1995/96 with a foodgrain production of 19.14 million mt. The year 1996/97 witnessed an all time high foodgrain production of about 20.43 million mt. Foodgrain production, though continues to depend on the vagaries of nature, increased substantially over the years, following the introduction of high yielding varieties (HYV) and application of modern inputs like fertilisers and pesticides; but its dependence on weather continues resulting in fluctuations in production. Wide fluctuations in production leads to large instability in foodgrain prices having serious implications for household food security and also for the welfare of the people.

13.2.3 Production of jute fibre reached as high as 8.66 million bales in 1985/86. The production level declined to 4.92 million bales in 1992/93 and hovered around this level since then. Sugarcane production has remained more or less around 7.50 million mt since 1987/88. Production of potatoes has shown a steady increase. It increased from 0.89 million mt in 1975/76 to 1.47 million mt in 1994/95. Other crops like pulses and oil seeds have shown only marginal improvement nationwide. However, implementation of a crop diversification programme (CDP) during 1990-95 in 125 thanas gave promising results in terms of yield per hectare of maize, pulses, oilseeds, potatoes, vegetables, etc.

13.2.4 As regards performance of modern inputs, the irrigated area increased to about 4.00 million hectares in 1996/97 from the level of 2.65 million hectares in 1990/91. Ground water irrigation covered 68.5 per cent of the total irrigated area while the surface water irrigation was only 31.5 per cent in 1996/97. The ground water irrigation witnessed significant expansion during the last two decades. Use of chemical fertilisers increased from 2 million mt in 1990/91 to 3.02 million mt in 1995/96. Public sector seed distribution (mainly rice and wheat) occupies only about 5 per cent of the total requirements. The large part of the seed requirement is met by the private sector.

13.2.5 The reforms of the agriculture sector have been quite pronounced and visible. For over a decade, a wide range of policy reforms have been implemented in the agricultural sector. Few of these are privatisation of input distribution, withdrawal of input and food subsidy, import liberalisation and a broadening of the scope of private investment in agriculture. In recent years, the coverage of policy reforms in the agriculture sector has substantially expanded to include minor irrigation equipment, agricultural machinery, seeds and agricultural trade.

13.3 Fifth Five Year Plan

13.3.1 Sustainability of high yield and environmental protection remain the principal concern in recent years. Loss of soil fertility followed by unbalanced use of chemical fertilisers, lack of adequate quantity of water in some areas as well as their appropriate conservation and management are the major factors causing divergence between potential and actual output of

major agricultural commodities. Various studies indicate that the yield potential of the existing HYVs of rice is more than 4 mt/ha, whereas the average yield of most of the other varieties of rice is around 2 mt/ha. Major tasks during the Fifth Five Year Plan will be to address these issues. The specific objectives of the Plan will be to:

- a. increase productivity and real income of farming families in rural areas on a sustainable basis;
- b. attain self-sufficiency in foodgrain production along with increased production of other nutritional crops;
- c. encourage export of agricultural commodities, particularly vegetables and fruits keeping in view domestic production and need;
- d. promote adoption of modern agricultural practices in dry land, wetland and coastal areas;
- e. ensure sustained agricultural growth through more efficient and balanced utilisation of land, water and other resources; and
- f. encourage comparatively large farm to graduate into commercial farming.

13.3.2 Policies and Strategies : In order to achieve the objectives, the strategies/policies will be evolved and adopted to bring about necessary technical change. The following will be the specific policies and strategies:

- a. improvement of the quality of seeds, particularly HYV and hybrid seeds and increasing their quantity;
- b. development of modern, irrigated and least-risk agriculture with greater reliance on competitive markets through supply of agricultural inputs at low cost; making public investment more effective and keeping it limited to key areas as required to supplement private initiatives;
- c. strengthening of the agricultural research and extension systems in order to develop new technologies relating to crop varieties, integrated farming system, organic farming, improved agronomic and agro-processing technologies, and for diffusion of the proven technologies;
- d. development and dissemination of ecologically sound and sustainable technologies such as integrated pest management (IPM) techniques, and organic and bio-fertiliser use;
- e. increasing profitable production of minor crops and thereby maintaining a balanced crop production and improving the nutritional status of the people;
- f. development of suitable technologies in rain-fed, dry land and wetland farming system to enhance the productivity;
- g. restoration/improvement of soil fertility through better management of the organic matter of soil to improve yields of crops; towards this end, production and use of bio-manure will be encouraged;
- h. assistance to small and marginal farmers in forming groups and associations which can (i) enhance production and productivity, (ii) sustain agro-business enterprises on their own, (iii) absorb more credit fund and (iv) adopt/disseminate technologies;
- i. participation of NGOs in the agricultural development process;
- j. improvement and conservation of plant and genetic resources through collection and conservation of germ plasm;
- k. facilitation of access to markets and the promotion of efficient marketing system;
- l. formulation of integrated land use policy conducive to optimum use of agricultural resources;

- m. implementation of measures to cushion and minimise the damage to agriculture and rural economy brought about by natural calamities;
- n. development of the capabilities of rural women and the youth to contribute more to agricultural and rural development;
- o. restructuring of the existing institutional set-up to cope with the changed need;
- p. development of human resources through education, training and motivation;
- q. development and dissemination of appropriate location-specific and cost-reducing production and post-harvest technologies for reduction of post-harvest losses and the removal of transport bottlenecks; and
- r. adoption of policies and regulations that will ensure sustainable agricultural development;

13.3.3 Major areas of public sector promotional activities : The crop production strategy of Bangladesh will be based on the following central thrusts: (a) increased distribution of high quality HYV seeds by the public sector; (b) accelerated transformation into irrigated agriculture to increase and stabilise crop yields; (c) intensification of the cropping systems; (d) decreased dependence on draft power through mechanisation and bridging of the yield gaps in irrigated areas; (e) improvement of productivity and minimisation of production risks in the rainfed, wetland, high land and coastal farming system; (f) diversification of farming systems to take advantage of favourable agro-ecological conditions; (g) responding to changing consumer demands and developing a more sustainable agricultural system; (h) vertical co-ordination of the production, harvesting and marketing chain; and (i) strengthening of extension, research and other support services.

13.4 Crop Production

13.4.1 Projection of crop production during the Plan has been worked out keeping in view the production possibilities, agronomic consideration, availability of production inputs and farmers' accessibility to resources and willingness to increase production within the prevailing agro-economic condition. Emphasis will be put on increasing yield per hectare rather than increasing cropped area and shifting from local variety to the HYVs. The purpose of foodgrain production, in addition to attaining self-sufficiency, will be to provide nutritious food for the entire population.

13.4.2 Bangladesh is endowed with favourable climate and soils for the production of a variety of crops throughout the year. The winter crops are greater in number than the summer monsoon crops. The production of major and minor crops lost balance in recent years due to greater emphasis given on cereals, especially rice and wheat. The situation needs to be improved for balanced diet of the people.

13.4.3 The production of minor crops such as pulses, oilseeds, vegetables, fruits, spices, etc., is currently inadequate to provide required nutrition in the daily diet of the people. Such situation will not be allowed to continue. Accelerated production of minor crops, complementary but not competitive with major food crops production as per requirement for reducing pressure on cereals, will be pursued during the Fifth Plan period. This will improve the daily diet of the people, generate rural employment by intensive cropping with improved technologies, increase farm income and thereby increase the purchasing power of rural masses. It will also improve the balance of payments by promoting import substitution and export oriented crops.

13.4.4 Fruits and vegetables are important sources of minerals and vitamins and provide a part of calorie requirement in the daily diet of the people. They also provide most of the food roughage which contributes to prevention of disorder of digestive system. Besides, vegetables protein appear to be superior to animal protein. The nutrition status of the Bangladeshi diet is on a declining trend due to low intake of vegetables, fruits and spices. The increased production and intake of vegetables by the people will help compensate for debilitating nutritional deficiencies.

13.4.5 The foodgrain production in the terminal year of the Fifth Plan has been projected to be 25.12 million mt. Out of this, rice production is expected to be 23.40 million mt as against the production of 18.88 million mt in 1996/97. The estimates of wheat and other coarse grain production have been made at 1.60 million mt and 0.12 million mt respectively in the terminal year of the Plan. The projected production of important crops have been shown in Table 13.1

Table 13.1
Projection of Important Crop Production During Fifth Plan

(area in million hectare
and production in million m. tons unless otherwise noted)

Crops	1996/97 (Benchmark)		2001/2002 (Projection)	
	Area	Production	Area	Production
1	2	3	4	5
Rice	10.40	18.88	10.11	23.40
Wheat	0.71	1.45	0.70	1.60
Sub-Total	11.11	20.33	10.81	25.00
Other coarse grain	0.10	0.10	0.12	0.12
Total Foodgrain	11.21	20.43	10.93	25.12
Potato	0.15	1.85	0.16	2.43
Sweet Potato	0.05	0.50	0.05	0.66
Oilseeds	0.50	0.37	0.70	0.76
Pulses	0.65	0.53	0.78	0.85
Spices	0.15	0.33	0.22	0.50
Vegetables	0.25	1.45	0.30	1.82
Fruits	0.19	2.14	0.26	3.54
Jute (million bales)	0.51	4.87	0.57	7.24
Cotton (million bales)	0.04	0.10	0.11	0.26
Sugarcane	0.18	8.10	0.18	12.37
Tea (million kg)	0.05	54.00	0.05	60.00
Tobacco	0.03	0.04	0.03	0.04

13.4.6 Maize and other coarse grains: Maize is now considered as a substitute for both rice and wheat since it can be grown in all seasons. From maize one may get food, oil, fuel, and fodder and feed. The present yield potential is too low. It can be increased to the level of HYV wheat provided adequate demand is created and fair prices to the growers can be ensured. The genetic yield potential of maize is very high. Bangladesh Agricultural Research Institute (BARI) has already developed five high yielding medium duration maize varieties with grain yield potential of 5-7 mt/hectare, suitable for flood prone areas. The maize production is planned to increase by 250 per cent to 12,500 mt in 2001/2002 from the benchmark production of about 5,000 mt. Besides maize, other coarse grains consisting of barley, sorghum, bajra, and millets have considerable importance from the point of use of water resource and development of agro-industries. Considering the increased importance of these minor crops as supplementary food, cattle feed and industrial raw materials, increased production programme for these crops will be taken up during the Fifth Plan period.

13.4.7 Fruits vegetables and horticultural products: Environment in Bangladesh is quite rich for production of a large variety of fruits and vegetables. Some fruits such as mango, banana, pineapple, jackfruit, etc., have world demand. The main problem of fruit production is its seasonal nature. Year-round production variety is yet to be evolved. Special efforts will be made during the Fifth Plan to produce at least major fruits and vegetables on a year-round basis and commercialisation of their production through appropriate research and development programmes. At the same time, emphasis will be given on the qualitative and quantitative improvement of various fruits and vegetables production, including production of mushrooms, flowers, orchids and shrubs, etc., Production of fruits and vegetables has been projected to be 3.54 million mt and 1.82 million mt respectively by the end of the Plan period.

13.4.8 Potato : Potato is suitable as a security crop in times of rice shortages due to its high carbohydrate content contributing to improved food security. This is also used as a vegetable by various income groups of the country. Since it is a short duration crop, its increased use can reduce the pressure on rice and wheat. Considering the production potential of the crop, potato production is projected to grow to 2.43 million mt in 2001/2002. The increased production is expected to come from expansion in cropped area and increase in yield per hectare. To this end, true potato seed technology will be encouraged and adopted.

13.4.9 Sweet potato : Sweet potato is considered as a subsistence as well as a poor people's food. Hence, its production will be encouraged on marginal lands, homestead areas, road sides and elsewhere as a low input crop to ensure its continued availability to, and affordability by low income consumers. Sweet potato production is projected to be 0.66 million mt in the terminal year of the Fifth Plan.

13.4.10 Pulses: The pulses of Bangladesh comprise of six major crops, namely, lentil, kheshari, blackgram, mungbean, chick-pea and pigeon pea. Cowpea occupies an important place in the Chittagong area. The cropped area and production of these pulses have been on the decline over the past few years mainly because of the increased emphasis on HYV rice and wheat. But pulses are very important because of protein supply to the human diet and nitrogen fixation for soil nutrition. Since improved technology can increase per hectare yield of pulses substantially, pulse production is projected to grow to 0.85 million mt in the terminal year of the Plan as against the benchmark production of 0.53 million mt.

13.4.11 Oilseeds: Vegetable oil from oilseeds are the main sources of fats in the average Bangladeshi diet. Its present level of consumption is only 25 per cent of FAO/WHO recommended level. Efforts will be made to increase oilseeds production to 0.76 million mt by the terminal year of the Fifth Plan. Groundnut, sunflower and soyabean have been included in this projected production. New seed varieties are being used in the defined area to avoid cross-pollination. Production of foundation and certified seeds of improved varieties and demonstrations of modern technology are important strategies to increase oilseeds production of the country.

13.5 Cash Crop Production

13.5.1 Jute: Jute is the major fibre crop of the country. Despite the relative decline in importance of jute in agriculture, potential still exists for the fibre to increase its contribution to the economy through productivity increases and diversification. The share of raw jute and jute goods in the total exports of the country has been declining but this still remains significant. In this situation, special measures will be taken during the Plan period to

encourage farmers to further intensify jute production in order to satisfy domestic and export demand. To enable jute to compete with synthetics, emphasis will be given to related agricultural and technological research efforts. The raw jute production is projected to go up to 7.24 million bales in 2001/2002 as against 4.87 million bales in 1996/97 through per hectare yield increase, availability of better quality seeds, improved provision of extension and credit support to growers.

13.5.2 Tea: Tea is one of the most dynamic agro-based, labour intensive, export oriented industries of Bangladesh. It plays a vital role in the national economy in both export earnings as well as in employment generation. Plantation and production of processed tea are the two main activities in the private sector. In the public sector, green leaf production was promoted through development projects implemented by the Bangladesh Tea Board. With the introduction of high yielding varieties, quality planting materials, timely application of production inputs and installation of modern machinery, tea has undergone further improvement and enabled Bangladesh to compete more effectively with other exporting countries. Increased production is expected to come from higher yields and by reducing tea vacancies now existing in the garden.

13.5.3 Tobacco: Tobacco is one of the important cash crops of the country. The crop grows well in sandy, well-aerated, well-drained soils and cool climate. Hence, it is grown as a rabi crop and most of the area is concentrated in the greater districts of Kushtia and Rangpur. Due efforts to expand tobacco cultivation since 1973/74, through support from big cigarette manufacturing firms, made it possible to achieve self-sufficiency in tobacco production by 1980/81. However, recognising tobacco's adverse effects on health, policies will be adopted to limit its production with gradual reduction of cropped area in favour of cotton and pulses. The production of tobacco has been projected to be 0.04 million mt by the terminal year of the Fifth Plan.

13.5.4 Cotton: Cotton has played a very important role in improving the socio-economic conditions of the farmers during the previous Plan period. The production has gone up from 45,800 bales in 1983/84 to about 1,00,000 bales in 1996/97. The yield of seed cotton per hectare has reached a reasonably high level; yet the yield of cotton in the country is low compared to world standards. The major constraints to increased production are inadequate ginning capacity and seed multiplication programme, insufficient expertise and material resources, inefficient system of management and ineffective extension and marketing organisation. Textile mills should encourage commercial plantation through co-operatives in suitable cotton belts. During the Plan period, efforts will be made to provide loans to farmers to ensure supply of improved seeds, fertilisers, plant protection measures, irrigation and credit facilities to the growers along with the practising of improved technologies in the cotton fields. The cotton production has been projected to be 0.26 million bales by the terminal year of the Fifth Plan as against 0.10 million bales in 1996/97.

13.5.5 Sugarcane : Sugar is the country's most important agro-industry and sugarcane is one of the important cash crops. Sugarcane is grown as a 12/15 month crop in a two year rotation with aus rice crop during the monsoon season followed in the dry months by oilseeds, wheat, or vegetables. Sugarcane yields in the country are low by world standards and the quality is poor. The average yield of sugarcane is about 6.1 mt per hectare with a sugar recovery rate of 8-10 per cent. Sugarcane is grown on about 0.18 million hectares of land. Of this, about 0.95 million hectares are in the sugar mill zone areas and the rest in the non-mill zone areas which produces sugarcane mostly for making gur consumed by the rural people.

Research efforts will be strengthened to raise yield per hectare through varietal improvement, better management of water resources, fertilisers and other inputs, improved cropping systems and development of sugarcane delivery system from farms to mills. Considering the past consumption trend, milling capacity and possible growth rate of production, sugarcane production is projected to be 12.37 million mt in the terminal year of the Fifth Plan as against the benchmark production of 8.10 million mt.

13.5.6 Crop diversification : Bangladesh is endowed with a favourable climate and soil for the production of a variety of crops all the year round. Thus, ample opportunities exist for crop diversification balancing the production of major crops with that of minor crops. The minor crop production has substantial potential, if seasonal fallow land is brought under cultivation with seed-fertiliser-irrigation technology packages. Crop rotation, i.e., exhausting crops followed by recuperative ones, shallow rooted crops by deep rooted ones, legumes followed by non-legumes, etc., is envisaged to enrich and maintain soil fertility. Besides, diversification of cropping pattern, particularly towards the production of high value crops, will contribute to enhance farmers' income and to help maintain a better soil structure for long term sustainability. Efforts will be made to explore the possibility of introducing a non-rice crop in between aman and boro through adoption of shorter duration rice varieties and shifting of the timing of crop establishment and harvesting. Lack of technological advancement is the main constraint to diversification of crops. In order to accelerate technological advancement, possible strategies will be to:

- a. develop HYVs and use hybrid technology and genetic upgradation of non-cereal crops and strengthen seed production programmes, particularly in the private sector;
- b. introduce diversified cropping systems in order to free upland areas in winter season for non-rice crops so as to facilitate introduction of third crop on the land and under irrigated condition; short duration mustard can be introduced in between boro and aman seasons; and
- c. introduce extensive extension services, improve drainage and water management, ensure timely planting and soil fertility management, develop infrastructure and post-harvest processing and provide marketing facilities.

13.6 Special Agricultural Zones

13.6.1 Apart from plain land agriculture, there are special agro-ecological zones which have quite high growth potentials. Specific development policy, strategy and programmes for these zones are needed to exploit the existing potentials of the areas: (a) the upland in the hilly areas of Chittagong, Chittagong Hill Tracts and Sylhet, (b) the wetland in greater Mymensingh, Sylhet, Jessore, Pabna, Rajshahi, etc., and (c) the coastal areas of southern part of Bangladesh. Each requires distinct set of policies, strategies and programmes because of differences in agro-ecological environment. Research, extension and input delivery will be so designed as to meet the specific requirement of these special agro-ecological zones.

13.6.2 Rainfed farming: Crop production in Bangladesh is predominantly monsoon dependent. Of the total rainfed areas, about 3 million ha is estimated to be prone to severe drought. The entire Barind and Modhupur Tracts constituting about 12 per cent of the total arable areas are characterised by shallow soil depth having low moisture holding capacity and heavy sub-surface clay. Crop production in these areas and in the Gangetic flood plains is mainly dependent on rainfall and on the inundation from the Ganges river and its tributaries. However, for the whole of the Ganges belt, including the Barind and Modhupur Tracts, no rainfed farming practice specially suited to the prevailing soil and agro-climatic condition has

yet been developed. There is, thus, an urgent need to develop drought tolerant crop varieties and drought mitigating technologies that will make maximum use of the land resources of the rainfed farming systems. Rainfed farming practices will also include supplementary irrigation which will help increase crop production during the kharif season.

13.6.3 Wetland farming: Large areas of wetland commonly known as beels, baors and haors in the greater districts of Sylhet, Mymensingh, Jessore, Rajshahi and Pabna hold quite high potentials for the development of crop agriculture and fisheries, in particular. Crop agriculture and fish production can grow simultaneously. Besides, preservation of biodiversity of the wetland will be given high priority. Greater attention will be given during the Fifth Five Year Plan to exploit the potentials of crop agriculture and fisheries through provision of situation specific package of development programmes for research, extension, input supply, etc.

13.6.4 Coastal farming: Coastal areas in the southern part of Bangladesh constitutes a specific ecological zone having its specific problems and possibilities. Cyclones, tidal bores, salinity, etc., visit these areas frequently affecting agricultural output. Therefore, there is need for developing salinity resistant variety of rice, for example, for these areas. Coconut, betel nut, palm and mangrove are major cash crops in these areas. Location specific research, extension and other programmes will be developed and provided for the purpose of exploiting the potentials.

13.6.5 Hill farming: The upland in the hilly areas of the greater Chittagong district, Chittagong hill tracts and Sylhet district constitute a special agricultural zone requiring location specific services and programmes. High potentials exist for production of fruits and vegetables in these areas. Agricultural development potentials in these areas are quite substantial. Resources will be provided to develop appropriate technology that are suitable for upland agriculture.

13.6.6 Cropping intensity : Bangladesh has, by 1996/97, achieved an estimated cropping intensity of about 185 per cent. Out of the net cropped area of 7.60 million hectare, about 55 per cent is double cropped and approximately 15 per cent triple cropped. However, about 30 per cent is still single cropped. Since all the suitable land is already under cultivation, raising the intensity of land use is needed. It is expected that cropping intensity will reach 192 per cent by the terminal year of the Fifth Plan. Cropping intensity from 1992/93 to 2001/2002 is shown in Table 13.2.

Table 13.2
Cropping Intensity From 1992/93 to 2001/2002

	Net Land Area	Total Cropped Area	Cropping Intensity
1992/93	7.64	13.70	179
1996/97	7.60	14.08	185
2001/2002 (Projection)	7.50	14.41	192

(area in million hectare)

13.7 Agricultural Inputs

13.7.1 Fertilisers: In Bangladesh, despite manifold increases in fertiliser consumption, per hectare use of it is still one of the lowest. With the privatisation policy of the government, fertiliser distribution programme has fully been handed over to the private sector. Total fertiliser consumption during 1996/97 was about 3.45 million mt — urea 2.41 million mt, TSP and SSP 0.69 million mt and MOP 0.35 million mt. These are projected to increase in aggregate to about 4.50 million mt, of which urea will be 2.90 million mt (64%), TSP and

SSP 1.00 million mt (22%) and MOP 0.60 million mt (13%) by the end of the Fifth Plan. Actual application of various types of fertilisers is disproportionate to standard NPK ratio of 1 : 0.5 : 0.5. Fertiliser use at farmer level is dominated by urea (about 70%) followed by TSP and SSP (20%) and MOP (10%) causing damage to soil structure and thereby constraining per hectare production of various crops. Following withdrawal of explicit subsidy from phosphatic and potash fertilisers and also transfer of its trade to private hands, relative prices of these items have gone up, while urea is reported to be sold at below the cost of production. The price of urea was reduced in July, 1994 and early, 1995. This distortion of relative price of urea is said to have aggravated unbalanced use of fertilisers in favour of nitrogenous fertilisers or inadequate application of non-nitrogenous fertilisers such as TSP and MOP. Therefore, in view of actual field position and experiences gained so far, it is realised that the public sector interventions might be required in case of market failure for (a) ensuring balanced use of fertilisers, (b) maintaining a buffer stock of fertilisers to meet emergency needs, (c) distribution of fertilisers in the remote areas, (d) encouraging increased use of organic and bio-fertilisers, and (e) training the farmers by the extension people in using appropriate doses and combination of fertilisers.

13.7.2 Seeds: Quality seeds in right quantity are recognised to be one of the key elements for enhancing agricultural production. At present, BADC, as per seed policy 1992, concentrates its efforts on the production of HYV seeds of paddy, wheat, potato, jute and sugarcane in the seed farms and also uses farmers to multiply seed on contract basis. Production programme of all other crops beyond foundation seed will be done by contract growers. With the introduction of seed policy, emphasis has been given to private seed growers development. However, the public sector will conduct basic scientific research, support or conduct breeding work for self-pollinated and minor crops for greater suitability to divergent agro-ecological zone. Public sector will also carry out programmes for training and support services for private research and development, variety testing and registration, plant material inspection and maintaining germplasm, supporting seed associations and promotion of farmer or community-based seed programme. The concerned agencies under the MOA will be further strengthened in order to ensure quality of seed at all stages of its production — breeder, foundation and certified seed. Emphasis will be given on creating facilities and infrastructure support for hybrid seed research, marketing and development. Farmers will be given training and technical assistance to extend improved methods of seed production, testing and storage. Total production of all types of certified and foundation seeds has been around 45,000 mt during 1996/97. This is expected to reach 62,000 mt by 2002. At present, only about 5 per cent of total certified seed requirement is met from BADC sources. This needs to be raised to at least 10 per cent to match 25.12 million mt of foodgrain production as projected in the Fifth Plan. To this end, BADC seed wing will be strengthened and restructured. Agricultural Research Institutes (ARIs) along with other research organisations under National Agricultural Research System (NARS) will upgrade and strengthen research in order to give full support to augmenting breeder seeds of new varieties. Seed development accounts for about 28 per cent of total financial provision for the agriculture sector during the Fifth Plan.

13.7.3 Irrigation: Availability of appropriate quantity of irrigated water from (a) surface water through gravity flow and LLP, (b) ground water through DTW, STW, HTW, FMTW, DSSTW and VDSSTW, etc., and (c) other sources will be the main factors behind the growth of agriculture during the Fifth Plan. Total coverage of irrigation through all these sources in 1996/97 is estimated to have been around 4.00 million ha which is projected to increase to 5.04 million ha in 2001/2002. This is about 67 per cent of total potential irrigable

areas of 7.56 million hectare. In addition, flood control and drainage facilities are projected to cover 4.90 million ha during 2001/2002 as against the estimated coverage of 4.20 million ha in 1996/97. Flood control and drainage programmes will support and assist increased agricultural production during the Fifth Plan.

13.7.4 Plant protection: Actual plant protection activities are in the private hands. However, the public sector programmes are confined to qualitative and quantitative aspects of plant protection: pests surveillance, monitoring and early warning against pest attacks, advisory service to farmers, traders and others dealing with pesticides and quality control of pesticides marketed by the private sector. In the Fifth Plan period, the integrated pest management (IPM) programme will be intensified and expanded in order to safeguard crops from pest and combat environmental degradation due to pesticide uses. Agricultural extension workers are responsible for providing advice to the farmers on appropriate plant protection measures. Collaboration among the local government representatives, extension workers and the NGOs will be sought to expand IPM programme. Farmers will be given training in the use of different pesticides through demonstration.

13.7.5 Agricultural credit: Till recently, the major part of agricultural credit to farmers has been channelled by informal sources catering to the needs of short term credit. Semi-formal institutions, NGOs, Grameen Bank, etc., also provide target groups credit in the rural areas. The third source in terms of credit volume is the formal sources comprising the nationalised commercial banks and agricultural and specialised banks, i.e., Bangladesh Krishi Bank (BKB), Rajshahi Krishi Unnayan Bank (RAKUB) and Bangladesh Samabaya Bank (BSB). During the Fourth Plan, the total volume of agricultural credit increased by 150.20 per cent; the highest increase being for fishery (831.50%) followed by livestock (341.30%), crop sub-sector (214.30%) and others (93.40%). However, in recent years, there has been a significant cut in the share of crop sub-sector in the total credit delivery to the agriculture sector from formal sources. The share declined from 46.38 per cent in 1994/95 to 42.29 per cent in 1996/97. A major reason for this is the serious problem of low repayment due to weak lending and recovery operations, inappropriate use of loans, frequent occurrence of natural calamities and loss of crops and weakening of the public price support policy. The low interest rate to this priority sector dissuades financial institutions from further lending to agriculture. Moreover, since 1991/92, central bank discontinued its refinance facility for extending agricultural credit except for the BKB, RAKUB and the Sonali Bank. These factors dampened the expansion of agricultural credit. In the Plan period, agricultural credit, especially for marginal and small farmers will be geared up in order to encourage steady expansion of agricultural output supported by appropriate public policies to ensure fair prices to farmers. Otherwise, over 6 million farm households will be exposed to uncertainty. In addition to the existing programme, special credit programme will be launched aiming at providing credit, particularly to the small and medium farmers. The commercial banks will be encouraged to provide funds to large farms to enable these to operate on a commercial basis. Keeping this in view, the Fifth Plan envisages to increase yearly agricultural credit disbursement. An amount of Tk.30,000 million is projected to be delivered as credit to agriculture in the terminal year of the Plan.

13.7.6 Mechanisation of agriculture: There is a serious dearth of animal draft power to cater for the growing needs of an expanding modern agriculture. The available animal draft power is inefficient and unreliable. As against this, agriculture mechanisation can help in improving productivity, reducing cost of production, increasing efficiency, increasing inputs use (water, seed, fertiliser, labour) and achieving timeliness of crop production operations.

Agricultural mechanisation is needed for quick turn-over time and high input use efficiency. Land preparation, irrigation, insecticides spraying, threshing, crushing and shelling, husking and milling have been partially mechanised and their magnitudes are expanding gradually throughout the country. There is a need for continuous development of more efficient and less costly equipment so that farmers can benefit. Since agriculture is still the mainstay of the economy, promotion and development of agro-related metal working industries to provide support to agricultural production is a major concern. Selective mechanisation based on the traditional devices conducive to productivity will be adopted. In the context of market economy, emphasis will be given to the collaborative role of public and private sectors in technology development and its diffusion. An appropriate policy framework for sustainable development of farm machinery manufacturing will be pursued in the Fifth Plan period.

13.7.7 Agricultural Insurance: Agricultural insurance has been recognised as an important component of agricultural development strategy. It seeks to protect farm investment through indemnification of losses to crops, forestry, livestock, fisheries and other farm resources that are vulnerable to natural hazards and other insurable perils and thereby provides security to farm income. It can also be significant to the agricultural credit agencies in times of natural calamities with insurance policies standing as collaterals for loans. With this end in view, crop insurance programme was at first launched in Bangladesh in 1977. Being entrusted with it, Sadharan Bima Corporation (SBC) carried out a pilot project to provide multi-peril coverage to major cereal crops (aus, aman, boro and wheat) as well as to major cash crops of jute and sugarcane for stabilising farm income. Livestock component was included in 1981. But, for various reasons, the performance of the project, particularly in respect of crop insurance was quite poor. Due to weak loss assessment system, indemnity payments far outstripping premium incomes resulted in mounting losses to SBC. In the absence of any new initiative to revamp the crop insurance programme, it was discontinued with effect from mid 1995. Livestock insurance has, however, been retained as it has continued to perform relatively well. During the Fifth Plan, efforts will be made for the development of a comprehensive agricultural insurance programme.

13.7.8 Agricultural marketing and prices: With a more intensive system of crop production and the increasing emphasis on diversification, marketing problems, particularly with perishable crops, have already multiplied and are likely to multiply further unless the needed remedies are introduced. Marketing costs are already high because of inadequate infrastructure, high price risks and the lack of credit to traders for marketing activities.

13.7.9 Among the vast number of primary and secondary markets in the country (about 7,800), the Department of Agricultural Marketing (DAM) is responsible for fixing market charges in 393 markets only. The market centres are under the control of the Ministry of Land which owns the land and collects marketing fees from sellers. The DAM, during the Fifth Plan period, will be strengthened to provide improved marketing services with a view to ensuring fair returns to the growers for their produces and adequate supply to the consumers at reasonable prices through the improvement of market conditions, reduction of marketing costs, regulation of market practices and market promotion for agricultural crops like maize, soyabean, potato, sunflower, etc. Wholesale market development, promotion of agro-processing industries, market management, creation of MIS in DAM, classification, grading and standardisation of agricultural products, improvement of storage facilities, particularly for marginal and small farmers, setting up an Agricultural Price Commission to make price forecast, production estimate and to make recommendations on the economics of productions and marketing are some of the specific programmes that will be undertaken during the Fifth

Plan in order to ensure (a) fair price, (b) quality of agricultural products both for domestic consumption and export and (c) increased production with stable price.

13.8 Agro-processing

13.8.1 Bangladesh experiences seasonal surpluses in several agricultural commodities of perishable nature. Development of agro-processing facilities can prevent post-harvest losses and enhance farmers' income. The agro-processing industries are at present in their nascent stage of development. Most of the technologies and facilities for handling, storage, processing and packaging of farm products and by-products are substandard and outdated as they cater primarily to the domestic market. There is considerable under-utilisation of capacity also.

13.8.2 The scope for the privatisation of support services such as research and extension is likely to remain limited. However, agricultural research institutes like BARI and BRRI will carry out research on technology development for agro-processing. Meanwhile, some technologies are already available with these institutes for the development and growth of agro-processing industries in the country. Nevertheless, some specialised extension activities could be delegated to the private sector such as those related to fruits and vegetables enterprises.

13.8.3 This process of supporting agrobusiness will be continued and strengthened during the Fifth Plan period. In this regard, two institutional developments in recent years are noteworthy: the establishment of HORTEx, a private board for horticulture promotion and the Agro-based Technology Development Project (ATDP) which conducts regular monitoring of the country's agrobusiness markets and provides information about the development in foreign markets and opportunities for agro-industries. These projects also support entrepreneurs with credit facilities.

13.9 Agricultural Research

13.9.1 Autonomous research institutes like BRRI, BARI, BJRI, BINA and BSRI were established with specific mandates for crop agricultural research in order to make the research system more service oriented and dynamic. National Agricultural Research System (NARS) with all the agriculture related research institutes under the co-ordinated leadership of Bangladesh Agriculture Research Council (BARC) has been established.

13.9.2 The research system needs to re-examine its focus and re-order its priorities, avoid fragmenting and duplicating its efforts, orient its approach from commodity based to farming system or integrated production system and strengthen its planning, programme monitoring and co-ordination. The research system should also strengthen its linkages with extension in the Plan period. Agro-ecological zone-based research will be undertaken. The criteria for evaluation of research programmes towards rates of adoption of research output by end-users and the system of accountability of individual research institution, research administration and personnel will be reviewed and made consistent with actual needs. Problem-solving researches will be given priority. Criteria for identification and selection of contract research programmes by the private sector and NGOs will also be developed in response to the changing environment at farm level. In the same way, priority list will be evaluated annually to accommodate changed needs and circumstances. Keeping in view these objectives and strategies, the following tentative research priority areas have been identified:

- a. improvement of foodgrain quality with more digestible protein;
- b. increase in efficiency in water use in rice cultivation;

- c. integrated plant nutrients and soil quality;
- d. post-harvest technology, preservation and relevant agricultural machinery;
- e. higher photosynthetic efficiency;
- f. nitrogen fixation by non-legumes;
- g. technologies for maximum use of commodities and their by-products for value addition;
- h. fruits and vegetables for off-season production including preservation, storability and tolerance to transportation damage;
- i. environmental issues and IPM;
- j. development of varieties tolerant to stresses (e.g. drought, salinity, water logging);
- k. development of hybrid technology for vegetables, maize and sunflowers;
- l. management of soil and plant nutrients with balanced use of organic nutrients;
- m. management of on-farm water resources in both irrigated and rain-fed agriculture;
- n. conservation of soil, plant and genetic resources;
- o. assessing the environmental impacts of declining ground water level;
- p. research on tillage operation to reduce turn-around time, multiple cropping and relay cropping;
- q. rainfed technology with major thrusts on development of crop cultivation and management practices (e.g. zero/minimum tillage, relay cropping, appropriate planting schedule and use of fertilisers including micro-nutrients);
- r. post-harvest handling and storage, primary, secondary and tertiary processing of farm products and by-products, including pulses, oilseeds, potato, vegetables and fruits;
- s. development and pilot testing of different scales of producers-processors agrobusiness schemes, including contract growing schemes;
- t. management of hill agriculture in the eastern and south eastern parts of the country, to harness the agriculture in largely mono-cropped Barind tract, characterised by drought, low organic matter and sub-surface heavy clay through identification of suitable crops varieties and soil/water management and agronomic practices; management of coastal saline soils; and
- u. genetic engineering and tissue culture.

In terms of financial outlay, the agricultural research will absorb about 12 per cent of this sector's total development outlay during the Fifth Plan period.

13.10 Agricultural Extension

13.10.1 Transfer of technologies and diversification and intensification of crop production programme through appropriate extension services are of crucial importance to Bangladesh agriculture. The extension services must be able to render the needed technical advice and management support at the appropriate time and place. Currently, the extension service draws its strength from research findings as well as from farmer's innovation. On the one hand, it acquires up-to-date findings from research and transfers them to the farmers, and on the other hand, it brings feedback in the shape of farmers' problems to the concern of research for possible solution and again takes back the results to the farmers for their field adoption. Strengthening of these three way linkages among research, extension and farmers community is vital for the development of a strong and effective new agricultural extension policy (NAEP). The Regional Technical Committee (RTC) and District Technical Committee (DTC) have been replaced by 18 Agricultural Technical Committees (ATC), each covering 2-6 districts in similar agro-ecological zone (AEZ). The composition of National Technical Co-ordination Committee (NTCC) has been amended to include representatives from NGOs

and farming community also. Agricultural extension together with nutritional awareness programme will receive about 8 per cent of the agricultural development Plan outlay .

13.10.2 Strategies to develop extension services: The following will be constituents of strategies to develop extension services:

- a. development of qualitative demonstration, field days, agricultural exhibition;
- b. farming system approach to extension system;
- c. non-commodity approach, i.e., irrigation technology, seed technology, on-farm water management technology and uses, IPM;
- d. strengthening of field level activities through proper delegation of authority from headquarters to field level;
- e. priority to marginal and small farmers;
- f. development and promotion of environmentally sound farming practices; and
- g. involving local government bodies, especially union and thana parishads in the process;

13.10.3 Local government bodies will co-ordinate, monitor and supervise the activities of agricultural extension service at the grassroots level. The NGOs, local government institutions and the extension personnel will work jointly for extension services. The role of BADC will be re-structured in accordance with the findings and recommendations of the recently formed Agriculture Commission.

13.10.4 Agricultural and rural training: In addition to higher education at agricultural colleges and the University, several other training institutions teach and train personnel who serve the agricultural sector. These institutions are Central Extension Resources Development Institute (CERDI) at Joydebpur, Graduate Training Institute (GTI) attached to Agricultural University at Mymensingh and 12 Agricultural Training Institutes (ATIs) located throughout the country; although the training facilities vary considerably among institutes, they are generally inadequate and need support for overall improvement. The curricula equally emphasise both academic and field trainings. During the Fifth Plan period, two ATIs will be established to meet the growing needs of extension personnel including women extension agents. Besides, Academy for Rural Development at Comilla and that at Bogra will train agriculture personnel of the Ministry of Local Government, Rural Development and Co-operatives in addition to pursuing their training programme for model farmers and managers of village co-operative societies on various aspects of agricultural development. To make the agricultural extension service efficient and effective, the training and communication support of extension system needs to be reorganised, strengthened and improved. The ATIs and CERDI will emphasise the qualitative aspects of training in agricultural management, instruction in the production of training materials, training of trainers and of extension agents. Training institutes will be given responsibilities for extension work in the nearby villages of their locations with the objective of achieving better organised extension work in the rural communities which will, in turn, result in an improvement in the quality of training. In support of the agricultural extension services, agricultural information service will concentrate on the systematic planning of multi-media communication activities to assist crop production and on taking initiatives in other relevant areas and fields.

13.11 Agricultural Education

13.11.1 The objectives of agricultural development can be realised through the effective spread of education and application of science and technology. The improvement in the prevailing educational system is essential, if progress and development are to occur in

agriculture. Increased levels of literacy and education among rural people are important factors conditioning the rate of adoption of improved technologies.

13.11.2 Recognising the need for development of scientific base for modernising agriculture, the country requires a continuing flow of efficient and qualified human capital to upgrade, maintain and implement development programmes and projects in a wide variety of public and private institutions serving agriculture. The responsibility of training these people lies mainly with the system of higher agricultural education. There is already a base of physical facilities at Bangladesh Agricultural University (BAU) at Mymensingh, Bangabandhu Agricultural University at Joydebpur and in agricultural colleges at Dhaka, Patuakhali and Dinajpur. The existing infrastructural base for higher agricultural education at Mymensingh and Joydebpur is under-utilised, though broad enough to meet the requirements of the country for various levels of agricultural experts and extension personnel.

13.11.3 Agricultural education system will be reorganised and strengthened and will be brought in line with the country's agricultural needs. Teaching will be linked to actual farming practices in specific farming conditions. Syllabi for agricultural education will be suitably modified so as to contribute effectively to the requirements of a dynamic agricultural sector. The major attention will be given to improve the quality of teaching and training and related student output so that the overall response of the system of agricultural education is sufficient to underpin the development of human capital and the science and technology base for agricultural modernisation.

13.11.4 Setting up of agricultural colleges in the private sector will be encouraged in the Fifth Plan period. Agricultural education has already been introduced at the secondary and higher secondary levels which will be further improved in years to come. Special emphasis will be given to the training of the teachers.

13.12 Private Sector

13.12.1 During the Fifth Plan, private sector investment in agriculture will be encouraged, particularly in areas of manufacturing of farm machinery and implements, irrigation equipment, fertilisers and pesticides, development of quality seeds, processing and storing of food, vegetables, fruits and others agricultural products. Adequate fund is likely to be available for these purposes. For a sustainable growth of the agricultural sector, appropriate fiscal and monetary measures will be framed taking into account the economy-wide and transboundary circumstances and issues. The public sector will provide public goods and services (research, extension, agricultural education, etc.), which may not be efficiently and adequately supplied by the private sector, support development of technical know-how and promote access to foreign markets, technology and capital.

13.13 Land Use

13.13.1 The Bangladesh National Conservation Strategy identified six important areas of conflicting land uses in rural areas. These are: crop agriculture vs. shrimp and capture fisheries, forest land vs. shrimp and capture fisheries; crop agriculture vs. livestock; agriculture vs. settlements; agriculture vs. brick fields; and agriculture vs. newly accreted char lands. Traditional systems found ways to make these various land uses compatible. These manifested in traditional seasonal shrimp culture and rice cropping, fallow periods and community grazing land for livestock. Due to population pressure on land, however, these traditional approaches are breaking down; available agricultural land per capita is roughly half of what it was 25 years ago. As a result, more intensified uses such as intensified mono-

cropping, intensified shrimp cultivation, and extensive brick fields are degrading soil fertility. Cropping on fragile char land before it has stabilised invites rapid erosion. Flood control and drainage structure have altered land and water use pattern and led to the decline of fish stocks and production by more than 25 per cent in recent years.

13.13.2 To replace traditional land use systems, more careful attention will be given to the impacts of current land uses. More can be done to maximise land productivity in order to continue to maintain per capita level of agricultural output. Bangladesh can functionally expand its 'land' base by more intensive cropping, better use of water and coastal resources, rational forest management, more attention to integrated land use and development of mixed cropping systems.

13.13.3 Resolving land use conflicts will be given special attention for sustainable agricultural development. Formulation of appropriate land use/zoning policy to ensure optimum use of land, prevent the use of prime agricultural land for brick making and industrial production, protect land from degradation, reclaim unutilised or degraded land for suitable use and improve the land resources for future generation will be taken up.

13.13.4 Priority of use of land between competing sectors is to be fixed in consideration of different physiographic units and sub-units which have different use potentials. While agriculture will receive a high priority in allocation of all the naturally fertile land, other sectors of production of renewable resources like forestry, fishery and livestock should also receive due importance. Forestry will have additional consideration in the policy due to its importance in environmental protection. The land use policy will clearly enunciate that good agricultural land is not allotted for or converted to non-agricultural uses like indiscriminate urban and industrial development.

13.14 Agricultural Development and Poverty Alleviation

13.14.1 Crop agriculture and minor irrigation served as the prime generators of income and employment in the rural Bangladesh over the past two decades. There is no doubt that the modern HYV seed-fertiliser-irrigation technology has made a significant impact on rural poverty alleviation. Modern agricultural technology has also helped generate employment in the rural areas, particularly for the landless. The diffusion of agricultural technology has also helped changing the nature and terms of the tenancy market impacting on income distribution and poverty. Some possible technology interventions with reference to the asset status of households in the Fifth Five Year Plan period will be the following:

- a. assetless:** Value adding activities utilising the biomass available within the village, raising plant nursery, seedlings, compost making, processing fruits and vegetables, feed preparation for poultry and livestock, mushroom production, silk worm rearing, etc. and development of common property resources including utilisation of wastelands, road sides, embankments and derelict ponds for fisheries;
- b. marginal and small farmers:** Labour intensive production activities such as dairy and poultry raising, vegetable growing, flower production, hybrid seed production, integrated resource management systems including recycling and value added agricultural products;
- c. medium and large farmers:** Technology interventions including those which will save farm inputs, e.g., bio-fertiliser, bio-pesticides including integrated pest management system and inter multiple and relay-cropping systems;

- d. promoting rural small-scale enterprises:** Small-scale enterprises in fertilisers, seeds, irrigation equipment and other agricultural machinery and small-scale processing units by the rural poor; and
- e. support to rural women:** Investments in collective and labour-saving activities such as grain mills, alternative sources of water within easy reach of households, appropriate technology for food processing like homestead horticulture, post-harvest processing and storage of agricultural produces, small scale agro-based industries and child care centres.

13.15 Agriculture and Nutrition

13.15.1 The objectives of nutrition in agriculture commensurate with those of the crop production consist of crop diversification and increased production of fish, livestock and poultry. However, specific objectives in this respect will be to: (a) create nutritional awareness at the farm family level for changing food habits and to create effective demand for nutrient-rich food items; (b) increase balanced production and consumption, especially of oilseeds, pulses, nutrient-rich vegetables and fruits in order to ensure household food security; (c) encourage homestead gardening for production of fruits and vegetables; (d) adopt and promote rearing small scale poultry and fisheries at the household level to ensure nutrition security as well as income generation; and (e) minimise post-harvest loss through food processing and preservation at household level to ensure gender equity and empowerment of distressed people.

13.15.2 Following actions will be pursued for creating awareness and increasing consumption of nutritious food during the Fifth Plan period:

- a. nutritional consideration and objective will be incorporated in development projects and programmes of agriculture as one of the themes of International Conference on Nutrition (ICN);
- b. the nutritional problems in all the agro-ecological zones (AEZ) will be identified as a basis for developing crop production plan to improve nutrition situation in the country;
- c. short term nutrition training programmes for the personnel of the Department of Agriculture Extension (DAE), Department of Livestock and Department of Fisheries and informal training for social workers, religious leaders, farmers and consumers will be organised;
- d. workshops and seminars at thana level will be arranged and farmers rally and field-days at farm level will be held;
- e. incorporation of nutrition into curriculum of agricultural education and training will be made;
- f. training on nutrition and food demonstration for wider dissemination of nutrition rich practices will be organised;
- g. nutritional motivation through mass media campaign and school and mosque based campaign in collaboration with extension workers/agencies and NGOs will be organised;
- h. food and nutrition fair to create increased nutrition awareness through demonstration of proper cooking and food preservation methods will be undertaken;
- i. all actions and programmes identified in the National Plan of Action for Nutrition (NPAN) for the agriculture sector will be implemented through government organisations, NGOs, and other relevant agencies; and

- j. the Bangladesh Institute of Research and Training on Applied Nutrition (BIRTAN) will implement and co-ordinate all nutrition activities in the agriculture sector.

13.16 Environmental Protection

13.16.1 Strategies for sustainable development of the agriculture sector during the Fifth Plan period will be devised to ensure environmental protection/conservation by way of addressing the major problems such as:

- a. resource utilisation according to potentials;
- b. policy options for environmental protection; and
- c. location-specific technologies and their proper diffusion;

13.16.2 Agricultural development policy will pay due attention to environment protection. Efforts will be made to combat natural hazards like floods, storm surges, drought and river bank erosion and consequential environmental problems such as salinity, drainage, etc. Human induced problems such as accelerated soil erosion, desertification, deforestation, salinity, organic matter depletion, soil degradation, water logging, etc. will also be effectively addressed to improve environment. In course of utilising physical resources of land and water and human resources for agricultural development and making other related development intervention, an appropriate protection measures for the country's complex environmental system will be carefully adopted.

13.17 Women in Agriculture

13.17.1 One of the major advances made in the last two decades in the agricultural sector is the recognition of women as important contributor to the food security in Bangladesh. The role of women in increasing yield potentials of agricultural production, in post-harvest operations, in homestead or home-based activities, in resource conservation and in agricultural decision-making is now well recognised. Policy will be formulated for implementing WID in all programmes that will be undertaken in the sector. Women's participation will be envisaged in all development programmes/projects. Increased female participation will be encouraged at the planning, implementing and evaluation stages of any programme. Raising gender awareness, enhancing access of women in agro-business and strengthening equal participation are some of the specific areas on which development programmes/projects will be taken up during the Fifth Plan. NGOs will be directly involved in WID.

13.18 Area Development

13.18.1 During the last two decades, the government has initiated a number of area development projects, focusing on regional agricultural and infrastructural development. Increased understanding about the nature of underdevelopment in the rural area and concern for balanced and regional development have led to the emphasis upon undertaking regionally based agriculture-led development projects. Also, the need for target programmes for disadvantaged groups such as landless, marginal and small farmers and women is widely recognised. Therefore, programmes envisaged for less developed regions and disadvantaged groups have been developed with assistance from various donor agencies and by the government's own initiatives during the Third and Fourth Plan periods. Their impact on reducing rural poverty and accelerating socio-economic development of the lagging areas has been moderate and vast number of the target group population and many lagging areas are still without effective programme support. The objectives of the area development programmes are poverty alleviation, reduction of malnutrition and assurance of food security

for the disadvantaged people. There will be three strategic thrusts in such programmes during the Fifth Plan:

- a. an integrated farming and resource systems approach to area development;
- b. special consideration of the major disadvantaged groups in all programmes; and
- c. increased co-ordination with, and contracting out to, the Grameen Bank and NGOs.

13.19 Financial Outlay During Fifth Plan

13.19.1 The public sector financial outlay for crop agriculture has been estimated at Tk. 21,425.38 million. The programme wise financial outlay is presented in Table 13.3.

Table 13.3
Financial Outlay for Crop Agriculture During Fifth Plan
(at 1996/97 prices)

(in million Taka)		
Programme	Total	Percent
1	2	3
Agricultural Extension	1,650.00	7.70
Applied Nutrition	50.00	0.23
Agricultural Research	2,500.00	11.67
Crop Diversification	1,900.00	8.87
Seed Development	6,000.00	28.00
Fertiliser and Soil Improvement	550.00	2.57
Agricultural Marketing	500.00	2.33
Women in Agricultural Development	50.00	0.23
Environmental Protection	500.00	2.33
Human Resources Development	250.00	1.17
Other Essential Agricultural Sector Investment Programmes/Projects		
(a) Area Development Programmes	3,860.00	18.02
(b) Agro-business Development, Mechanisation and Private Sector Development	2,600.00	12.14
(c) Agricultural Rehabilitation Programmes	950.00	4.43
(d) Agricultural Insurance Programmes	5.00	0.02
Agricultural Statistics and Others	60.38	0.29
Total	21,425.38	100.00

13.19.2 In addition to the public sector outlay, an amount of Tk. 65,038.91 million is expected to be invested for the development of crop agriculture in the private sector.

B. Food Management

13.20 Past Performance

13.20.1 Vulnerability of domestic production of foodgrain necessitated the building up of an elaborate public food distribution system (PFDS) over the years. PFDS aimed at both meeting emergency needs as well as normal demand of the poor households in addition to meeting institutional demand originating in hostels, hospitals, jails, etc. While the distribution of public foodgrain continued to expand, it acquired a new emphasis through domestic procurement on a voluntary basis as a tool for stimulating foodgrain production with price support and open market sales (OMS) for price stabilisation at consumers level. Thus, it has both consumption and production objectives and in respect of both, of late, it has undergone changes with the growth of domestic output and greater availability of foodgrain in markets.

13.20.2 During the Fourth Plan period, sale of foodgrain through the statutory rationing channel of the PFDS was almost withdrawn. As a result, there was a significant change in the

shares of foodgrain distribution through monetised and non-monetised channels. For example, the PFDS distribution through monetised and non-monetised channels were 63 per cent and 37 per cent respectively in 1990/91 which reversed to 32 per cent and 68 per cent correspondingly in 1994/95. During the period, overall increase in the production of HYV boro rice due to expansion of irrigation facilities in the dry season, expansion of foodgrain trade with the development of transport system, opening of import of foodgrain to the private traders and improvement in the institutional capability to face crisis situation like drought, flood, cyclone, etc., largely contributed to much dampened seasonal fluctuations in the supply and prices of foodgrain.

13.20.3 In support of the public food distribution system, foodgrain storage capacity built up to about 1.80 million mt till 1985 increased to 1.86 million mt at the end of the Third Plan (1985-90). The Fourth Plan proposed to maintain this capacity keeping in line with its privatisation policy. During this period, its main emphasis was on repair and rehabilitation of the existing silos, CSDs, LSDs, etc., and construction of storage capacities at strategic places.

13.21 Fifth Five Year Plan

13.21.1 Objectives: Attainment of foodgrain self-sufficiency and food security remain the stated objectives of the national food policy and strategies. However, the objective contents of the food sub-sector during the Fifth Plan are as follows:

- a. ensuring food security for all, elevating nutritional status of the people living below poverty line;
- b. preservation and maintenance of security stock of foodgrain to meet any natural calamities, production shortfalls and supply hazards;
- c. development of a social safety net programme for vulnerable groups through improvement and enlargement of targeted food distribution;
- d. maintenance of price stability within a band to protect interests of producers and consumers;
- e. expansion of private sector in storage, distribution and trade of foodgrain; and
- f. development of a sound quality control, grading and standardisation system of all foodgrain and foodstuff.

13.21.2 Policies and strategies: Food sector has undergone major structural improvements over years both in market operations and in Public Foodgrain Distribution System (PFDS). The present policy and strategy to further liberalise the food trade will continue. However, though the private sector is expected to play a greater role in foodgrain management and trade in future, the government involvement in some specific areas will be continued in foodgrain management in consideration of the susceptibility of domestic production to natural hazards. The following issues relating to food security in particular, will continue to engage the government's attention:

- a. **Maintenance of buffer stock:** Buffer stock will be maintained to make up anticipated production and stock losses due to periodical droughts, floods and cyclones. An estimated 0.80 million mt of foodgrain will be required to be maintained as security stock.
- b. **Procurement of foodgrain:** Internal procurement of foodgrain will be continued to (i) ensure floor price to the growers and (ii) provide incentive and confidence to growers for further production.
- c. **Price stabilisation:** The government will formulate an effective mechanism to avoid wide price fluctuations. One of the current public policy is to hold food security stock for price stabilisation. Open market sale is one of the short term instruments used for avoiding temporarily wide fluctuations in market prices.

Private sector will be encouraged to own food storage facilities at strategic places such as food deficit/surplus areas. This will enable the traders to augment market supply in response to rise in prices, reducing thereby both seasonal and regional price spreads.

- d. **Targeted support for vulnerable groups:** National level foodgrain availability does not necessarily mean household food security. In spite of increasing foodgrain production and falling real prices of rice, over half of the country's population cannot afford an adequate diet. Hence, the case for public intervention remains strong and clear. Consequently, targeting the poor for supply of food remains squarely within the public domain. Vulnerable Group Development, Food for Work Programme and Food for Education in wider ambits will be some of the specific programmes of public interventions.
- e. **Government role:** To meet any shortfall in the flow of required quantum of food, the public sector may have to intervene for:
 - i. preservation and maintenance of security stock;
 - ii. development of a safety net programme by improvement and enlargement of targeted food distribution;
 - iii. providing incentive to growers through procurement of foodgrain at remunerative prices;
 - iv. stabilisation of price of foodgrain in relation to production cost and purchasing power of the consumers; and
 - v. modernising and maintaining existing storage capacity by renovating old food godowns and, if necessary, constructing new godowns in strategic areas of the country.
- f. **WTO and measures for food security:** Members of the World Trade Organisation (WTO) are currently implementing various reforms agreed upon in the area of agriculture during the Uruguay Round of multilateral trade negotiations. The central element of these reforms which will vitally affect the foodgrain price and food security of net food importing countries like Bangladesh is substantial progressive reduction in agricultural protection so as to establish a fair and market-oriented agricultural trading system. This measure, though expected to eliminate protections and to correct distortions in world agricultural markets, is likely to push domestic prices of agricultural products up, at least in the short and medium terms. As a result, Bangladesh, a least developed and net food importing country, may experience negative effects in terms of availability of adequate supplies of imported food-stuff on reasonable terms and conditions, and short term difficulties in financing normal level of commercial imports of basic food-stuff. To offset these adverse effects and, thus strengthen food security, Bangladesh will have to initiate negotiations in appropriate forums to establish a level of food aid commitment sufficient to meet its needs and to adopt measures to ensure that an increasing proportion of food-stuff be provided as grants for meeting needs of the target groups. Bangladesh will also pursue the case for increased quantum of technical and financial assistance to improve its agricultural production/productivity as well as relevant infrastructure. Besides, Bangladesh will work out with its development partners an arrangement under food aid for domestic procurement of foodgrain from the surplus regions and for distribution to deficit regions.

13.21.3 Food balance: The necessity of food budgeting and management in Bangladesh arise due to a variety of factors. The country is densely populated having a small area and bulk of the population suffers from malnutrition. The food crops are often affected by vagaries of nature such as drought, flood and cyclone. Thus, there is continued insecurity in domestic food supply which remains one of the major concerns for the country. In spite of efforts to reach food self-sufficiency, the country remains food deficit mainly because the

population growth could not be controlled as desired and the growth of food production could not be achieved to a level as required for feeding the additional population. However, the situation is projected to improve during the Fifth Plan period. The projected food balance during the terminal year of the Plan vis-a-vis the base year is shown in Table 13.4.

Table 13.4
Projected Food Balance in Fifth Plan

(in million mt)

	1996/97 (Base Year)	2001/2002 (Terminal Year)
Population (million)	123.80	132.50
Food Requirement *	20.50	21.94
Production of Foodgrain	20.43	25.12
Seed and Wastage (10%)	2.04	2.51
Net Production	18.39	22.61
Food Balance	(-) 2.11	+ 0.67

*Total foodgrain requirement has been calculated on the basis of per capita per day requirement of 453.59 grams (16.0 Oz).

13.21.4 During the terminal year (2001/2002) of the Fifth Plan, the total size of the population is estimated to reach at 132.50 million. In order to feed them, the country will need 21.94 million mt of foodgrain. Foodgrain production has been projected to be 25.12 million mt in 2001/2002. After deducting 10 per cent for seed and wastage from the gross production, 22.61 million mt of foodgrain will be available for consumption. Thus, the country is likely to attain food self-sufficiency and may have a surplus of 0.67 million mt by the terminal year (2001/2002) of the Fifth Plan. But since this estimate is based on a normative demand at the rate of 453.59 gm a day per capita, while effective demand will be lower due to lack of purchasing power from income and employment, actual surplus will be correspondingly higher. Lest this causes a slump in domestic price level and consequently, discourages farmers to increase production, public intervention will be necessary to ensure a remunerative price to farmers. On the other hand, shortfall in effective demand will need income transfer to the poor households till income and employment generation can raise purchasing power adequately.

13.21.5 Financial outlay: The programme-wise financial outlay in the public sector for the Fifth Plan is given in Table 13.5.

Table 13.5
Financial Outlay for Food Management Facilities in Public Sector During Fifth Plan
(at 1996/97 prices)

(in million Taka)

Programme	1997/98	1998/99	1999/ 2000	2000/ 2001	2001/ 2002	Total (1997/98- 2001/2002)
1	2	3	4	5	6	7
Repair and rehabilitation of existing silos, CSDs, LSDs etc.	195.00	214.00	214.00	220.00	225.00	1,068.00
Construction of silos/new storage capacity at strategic places and the related infrastructural facilities.	140.00	140.00	140.00	150.00	186.00	756.00
Establishment of food testing laboratories throughout the country.	1.00	24.00	25.00	-	-	50.00
Research/Monitoring/ Training on food management /operation and strategy/ computer network.	100.00	100.00	100.00	20.20	-	320.20
_Total	436.00	478.00	479.00	390.20	411.00	2,194.20

C. Fisheries

13.22 Past Performance

13.22.1 Fisheries play a major role in nutrition, employment and foreign exchange earnings. About 60 per cent of animal protein is supplied by fish alone and about 1.2 million people are directly employed by this sub-sector. Another 11 million people indirectly earn their livelihood out of activities related to fisheries. The production of fish was estimated to be 1,373 thousand mt during 1996/97 as against 847 thousand mt in 1989/90. It is estimated that production of inland fish was 1,079 thousand mt and that of marine fish about 294 thousand mt. The growth rate of fish production during the last seven years averaged at 6.5 per cent which fell short of increase in demand; however, the present rate of fish production has increased to 8 per cent per year. Over the last decade, price of fish increased at an annual rate of 2.5 per cent.

13.22.2 There are various impediments to fisheries development, some of which are particular to sources of fisheries. In case of capture fishery, inadequate knowledge, over-fishing and indiscriminate killing of juveniles and destruction of spawning grounds, obstruction of migration routes due to unplanned construction of dams and embankments under the flood control, drainage and irrigation projects, degradation of water quality, breakout of fish diseases, defective fish conservation laws and inadequacy of processing, marketing and other facilities are some of the major factors affecting the desired rate of development. The major constraints limiting fish culture relate to problems of property rights, competing water uses and related conflicts, lack of equipment and credit, lack of trained manpower and quality fish feed, etc. In case of marine fishery, inadequate knowledge and information of fisheries resources, lack of proper management policy and modern fishing know-how, use of inefficient fishing equipment and inadequacy of harbour and landing facilities as well as credit are important impediments.

13.23 Fifth Five Year Plan

13.23.1 Objectives: The major thrust for fisheries development will be on culture and capture fisheries, promotion of rice-fish farming system in the vast flood plains and conservation and management along with institutional and manpower development for equitable distribution of benefits from common property water resources through research on social engineering. The major objectives of fisheries sub-sector development during the Fifth Plan are to:

- a. generate additional employment opportunities in fisheries and ancillary industries to help poverty alleviation;
- b. increase fish production and improve nutritional level;
- c. improve the socio-economic conditions of the fishermen, fish farmers and others engaged in the fishery sub-sector;
- d. increase export earnings from shrimp, fish and fish products;
- e. improve environmental conditions;
- f. improve the biological and institutional management mechanisms for judicious use of fisheries resources; and
- g. strengthen research, extension, management and co-ordination in order to transfer technology and encourage production activities in the private sector and to ensure sustainable development of fisheries resources, particularly utilising water resources of the vast flood plains.

13.23.2 Policies/Strategies: Keeping in view the objectives stated above, the policies/strategies to be taken up for the development of fisheries are as follows:

- a. semi-intensive poly-culture of fish will be ensured in all ponds, dighis and other closed and semi-closed water bodies;
- b. stocking of fish fry in flood plains and semi-closed water and flood control, drainage and irrigation (FCDI) project areas will be continued to halt the declining trend of open water capture fisheries;
- c. sanctuaries will be established to conserve fish spawning grounds at different areas of the country; measures will be taken to stop indiscriminate fishing of gravid female and undersized fish; spawning grounds of the main fish species like Rui, Katla, Hilsa, Pangas, Golda Chingri, etc. will be identified to establish fish sanctuaries;
- d. adequate credit facilities for the fish farmers will be created and credit guarantee scheme will be introduced for marginal farmers; import of machinery and equipment for private sector hatchery, feeds and feed ingredients will be further liberalised and duties and taxes thereon will be reduced;
- e. training facilities for development of suitable manpower and entrepreneur groups will be extended both in the public and private sectors and multi-sectoral development approach will be followed;
- f. bio-technological elements will be applied in conservation of fisheries resources in all large water bodies, viz., baors, haors, beels, rivers, canals, and lakes;
- g. fisheries management policy will be implemented to improve the socio-economic conditions of fishermen;
- h. all precautionary and mitigatory measures will be taken so that fishing grounds may not be affected during the development works of other sectors like flood control, drainage and irrigation projects, agriculture, industries and urban development programmes;
- i. physical facilities like electricity, roads, transports, fresh water, etc., will be created and made available to develop brackish water fish and shrimp resources;
- j. traditional methods of shrimp culture will be improved by introducing modern technology for increased production; shrimp culture extension service will be strengthened to take necessary steps for the establishment of shrimp hatchery at private level;
- k. marine fisheries resources survey will be strengthened to ascertain the exact stock of resources in the interest of fish harvest at maximum sustainable yields;
- l. programmes will be undertaken to improve the socio-economic conditions of the coastal fishermen communities;
- m. quality of fish and shrimps will be ensured for the export of fish and shrimps through creation of facilities and modern quality certification system; and
- n. khas ponds, dighis, canals, road-side ditches, etc., will be excavated/re-excavated/developed for fish culture through participation of the rural unemployed youth, marginal farmers and distressed women;

13.24 Major Programme Areas

13.24.1 Open water capture fisheries: A 2.8 million ha fish habitats in the flood plains remain as unutilised resources of fish production. In order to increase production in open water fisheries, programmes will be undertaken to (i) conserve resources through rigorous implementation of the laws on fish protection and motivation of fishermen, (ii) establish fish sanctuaries, (iii) increase production by massive stocking of fast growing carp fingerlings in the natural depressions and flood plains, and (iv) develop fish culture in paddy fields through protective measures against adverse effects of flood control, drainage and irrigation projects, roads and high ways projects and township and housing projects. Observing the declining

trend of the stock of open water fisheries in the recent past, efforts were made to augment the stock through release of fish fries in the flood plains. But these programmes did not yield good results. Appropriate procedural and management systems will be evolved to ensure accountability and transparency in the execution of programmes for open water fisheries in the Plan period.

13.24.2 Closed water culture fisheries: There are over 1.3 million ponds covering an estimated area of 147,000 ha, some 6,000 ha of ox-bow lakes and over 130,000 ha of shrimps farms. Currently, the average production in fresh water ponds is 1.4 mt./ha. and that of brackish water shrimp farms only 160 kg/ha. Programmes will be undertaken to bring all of 1.3 million ponds under extension programmes of DOF, BFDC, FRI and NGOs during the Plan period to raise the present total production of 331,900 mt to at least 450,000 mt of fish.

13.24.3 Brackish water aquaculture: An estimated 0.143 million ha of coastal land is under brackish water shrimp farming. The method is largely traditional where an average production of 160 kg/ha is currently obtained. Recently, farmers, especially in Bagerhat and Perojpur areas, have started shrimp farming in their paddy fields. Farming area is rapidly expanding. Development of brackish water fisheries will be contingent upon the provision of infrastructures, supply of seed, feed and other inputs, security, technical advice, disease control and training of the farmers on improved scientific farming system. With more support from DOF, BFDC, FRI and other extension agencies, it will be possible to raise production in shrimp farms to a level of 400 kg/ha which will yield an additional production of at least 60,000 mt by the terminal year of the Plan. Semi-intensive farming is currently practised in 5,000 ha area by a number of entrepreneurs where production of 3-5 mt/ha has been achieved. The DOF is currently identifying suitable areas for semi-intensive farming and suitable sites for establishment of shrimp hatcheries. Private entrepreneurs will be encouraged to invest in hatchery operation. The government will support development of suitable land with road, electricity and other infrastructures. Private sector joint venture investment including foreign investments in hatchery operation, feed production and other related activities will be encouraged .

13.25 Marine Fisheries

13.25.1 With the extension of exclusive economic zone (EEZ) upto 200 nautical miles beyond our shore lines in 1974, Bangladesh resumed the responsibility for exploitation and management of living and non-living resources within its 1,64,000 sq. km. sea area. Since unlike the mineral resources, fish is a renewable living resource, only judicious exploitation and scientific management and development can ensure maximum benefit out of it. Over the last two decades, the share of marine fisheries in the total national landing rose from 10.6% in 1970 to about 22% in 1996. If appropriate technology can be adopted, this can be increased manifold.

13.25.2 The increasing pressure on the coastal resources in Bangladesh has caused decline of many marine fishes and shell fishes in the Bay of Bengal. The artisanal fishing which contributes about 95% of the total marine landing is largely composed of post larvae and juveniles which are seriously damaging the stock due to use of crude traditional technology. The number of artisanal fishing gears including estuarine set bag nets, beach seine nets and shrimp seed push nets are increasing alarmingly causing serious over exploitation of stocks. So, the following measures/programmes will be undertaken to improve the marine fisheries resources during the Fifth Plan period:

- a. assessment of pelagic, demersal and other marine resources and their development;

- b. studying and monitoring of oceanographic parameters of the EEZ of Bangladesh;
- c. imparting training to the coastal fishermen and providing support services to improve the socio-economic conditions of coastal fishermen community ;
- d. issuance of licences to mechanised and non-mechanised boats and identity cards to fishermen;
- e. continuous supervision and monitoring of fishing;
- f. ensuring replacement of destructive gears like estuarine set bag net and beach seine nets by other appropriate fishing gears;
- g. reduction of mortality of fish and shrimp larvae during shrimp seed collection;
- h. conservation of marine fisheries resources in the mangrove reserve forest;
- i. stopping sea piracy by trawl fishing of neighbouring countries with the help of the Coast Guards/Naval Forces;
- j. pollution control and environmental conservation through strict enforcement of marine fisheries laws; and
- k. proper utilisation of trash fish, now thrown away by the trawlers;

13.25.3 Post-harvest technology and marketing: Fish marketing carried out at four different stages, largely in the hands of the private sector, is managed, financed and controlled by a group of intermediaries known as "aratders" and "mahajans." The "aratders" provide advances to fish traders who in turn are required to bring fish to them for sale. The fish marketing system is thus traditional and complex though not very competitive. However, it faces serious problems including heavy losses, waste and poor fish quality. It is believed that in Bangladesh, 30 to 33 per cent of all fish caught become unsuitable for human consumption. This economic waste will be reduced through provision of cold-storage facilities, insulated and refrigerated transport systems and adequate supplies of ice. The marketing system will also adjust to (a) expanding export demand for quality frozen sea food, (b) expanding domestic demand for quality fresh and frozen fish and (c) large seasonal fish catches in areas far from the main markets and fish landing centres.

13.25.4 Peoples participation in fisheries: Fisheries sector is considered to be the thrust sector for sustainable development and socio-economic advancement of rural fishermen and fish farmers. Almost all the activities of fish breeding, nursing, feeding, fisheries training, harvesting, transportation, marketing, exporting and other ancillary activities are done by the private sector. Research, development, extension and regulatory activities are performed by the public sector. Twenty five technology packages have already been developed and are being implemented on experimental basis from 1996/97. Recently, some NGOs and private development organisations are involved in group formation, motivation, training and income generating activities of the fishing community and marginal farmers. A strong and effective linkage system will be developed between the government, especially local government bodies, non-government and private organisations in respect of planning, implementation and monitoring of the fisheries development programme. About 10,000 entrepreneurs will be developed in different fields of fisheries during the next five years. Job opportunities for 42,500 poor people will be created in this sub-sector.

13.26 Fisheries Research

13.26.1 Lack of technical knowledge, fish seed, proper management, disease control and suitable manpower account for the present low level fish production in Bangladesh. The onslaught of viral epidemics destroying substantial quantity of pond and fresh water fishes as well as brackish water shrimps has caused concern to the government and the people. Appropriate research support will be provided to address these issues. In particular, it is

proposed to commission a comprehensive study to analyse the sources and causes of fish and shrimp diseases and find out remedial measures.

13.27 Production and Export Projection During Fifth Five Year Plan

13.27.1 The current level of per capita daily fish consumption is about 25.6 gm. In order to raise the level of consumption to about 34.43 gm per capita per day at the end of the Plan period, the required production of fish will be 1.67 million mt. This is based on estimated projection of 132.5 million population by the terminal year of the Plan. In addition, it is assumed that during 2001/2002, the export of shrimp and fish and fish products will be 95,000 mt and another 15,000 mt of fish will be required for industrial and other uses. In view of this demand, the fish production target at the terminal year of the Fifth Plan has been set at 2.075 million mt. Table 13.6 gives the details of projection of fish production in the terminal year of the Fifth Plan.

Table 13.6
Projection of Fish Production During Fifth Plan

(in '000' metric Tons)

Source of production	1996/97 (Benchmark)	2001/2002 (Projection)
1	2	3
1. Inland Fisheries	1,079.00	1,675.00
Ponds	331.90	450.00
Baors	3.50	27.00
Coastal aquaculture	85.00	100.00
Rivers and estuaries	165.00	180.00
Beels and haors	70.00	95.00
Kaptai lake	7.60	9.00
Flood plain	395.00	751.00
Irrigation canals, road side ditches, fresh water polders and enclosures, etc.	21.00	63.00
2. Marine Fisheries	294.00	400.00
Total (1+2) :	1,373.00	2,075.00

13.27.2 Export earnings from shrimp, fish and fish products and other aquatic organisms during 2001/2002 are expected to be Tk.38,045.00 million as against estimated earnings of Tk.16,000.00 million in 1996/97. The export projection for the Fifth Plan is shown in Table 13.7.

Table 13.7
Export Projection of Fish and Fish Products in Fifth Plan Period

(Qty in '000' m tons, Value in million Taka.)

Items	1996/97 (Benchmark)		2001/2002 (Projection)	
	2	3	4	5
1	Qty.	Value	Qty.	Value
Shrimp	28.00	13,150.00	70.00	32,900.00
Fish and fish products	9.80	2,250.00	20.00	4,600.00
Others	5.50	600.00	5.00	545.00
Total :	43.30	16,000.00	95.00	38,045.00

13.27.3 Financial outlay: In order to implement the fisheries development programmes, Tk.5,861.80 million has been earmarked for the public sector during the Fifth Plan. Programme-wise financial outlay is shown in Table 13.8.

Table 13.8
Financial Outlay for Fisheries Development in Public Sector
During Fifth Plan (at 1996/97 prices)

Programme	Financial Outlay
Survey, investigation, feasibility study, research, etc.	400.00
Fisheries education, training, extension and community development	890.00
Culture and capture fisheries development (including inputs and waterbodies development)	4,360.00
Fish landing, storage, processing, marketing, transportation, distribution, etc.	211.80
Total :	5,861.80

(in million Taka)

13.27.4 Private sector: Appropriate programmes and projects will be promoted for implementation in the private sector with support services from the public sector in such areas as fish hatchery, feed mill, culture of fish and other aquatic organisms, fish processing, fish preservation, fish production, domestic sale and export. An amount of Tk.21,847.00 million is expected to be invested by the private entrepreneurs--local and foreign, for implementation of these programmes/projects. Expectedly, investment by the private entrepreneurs will be much more than what is envisaged for the public sector.

D. Livestock

13.28 Past Performance

13.28.1 Livestock sector has the makings of a highly viable sector for generation of employment and income for the landless, unemployed youths and destitute women. Little attention was given to livestock sub-sector until the recent past. In spite of that, about 50,000 private poultry farms, 26,000 duck farms and 26,000 dairy farms have been set up in the country in the private sector. Consequently, there has been a 60 per cent fall in the import of milk powder. Implementation of various development programmes as well as changes in fiscal and commercial policies resulted in the establishment of 26 thousand dairy farms in the private sector. The production of milk, meat and eggs between 1991 and 1995 as against their requirements are shown in Table 13.9.

Table 13.9
Requirement and Production of Livestock Products During Fourth Plan

Year	Population (million number)	Milk (million mt)		Meat (million mt)		Egg (million number)	
		Requirement	Production	Requirement	Production	Requirement	Production
		1	2	3	4	5	6	7
1991	108	9.86	1.34 (13.59%)	4.26	0.45 (10.56%)	8,985.60	2,046.60 (22.78%)
1995	121	11.04	1.41 (12.77%)	4.77	0.51 (10.69%)	10,067.20	2,539.00 (25.22%)

13.28.2 The production of milk and meat increased by an annual compound growth rate of 1.3 per cent and 3.2 per cent respectively. The growth rate of egg production was, however, satisfactory which was 6.5 per cent between 1990/91 and 1994/95. There are ample potentials for increasing production of milk, meat and eggs in the country. The main problems of this sector are inadequate supply of vaccine, medicine, equipment, feed, health care facilities, quality breed, parent stock, credit facilities and other inputs.

13.29 Fifth Five Year Plan

13.29.1 Objectives: The main objectives for the development of livestock sub-sector during the Fifth Plan are to :

- a. increase people's participation through development of entrepreneur groups and create new employment opportunities for small farmers, landless labourers and women and other target groups in livestock development;
- b. generate income and alleviate poverty of the rural poor through livestock development;
- c. increase the supply of milk, meat, birds, eggs, hides and skins, etc., through improvement in breed, feed and disease control of animals and birds;
- d. undertake adaptive research on breeding, feeding, disease control for cattle, Bengal goat and sheep and poultry bird by BLRI and to transfer appropriate technologies to the users;
- e. improve the quality of draft power of both cattle and buffaloes through genetic improvement, better veterinary services, adequate feed supply and improved management;
- f. increase foreign exchange earnings through the export of quality hides and skin, and to reduce dependence on import of powder milk;
- g. involve the private sector, local government bodies and NGOs in livestock industry for credit distribution, production of cattle and poultry feed, milk processing, input supply and marketing and to improve distribution network for these products in collaboration with Department of Livestock and Livestock Research Institute;
- h. privatise input supply and to provide fiscal support, if needed, for sustainable development of the sub-sector.

13.29.2 Strategies: In order to achieve the above objectives of the Fifth Plan, the following strategies will be adopted:

- a. improvement of the quality of animals and birds through genetic upgrading, preservation of native breeds and selection of exotic breed;
- b. wider provision for treatment of infectious diseases and parasitic infections and large scale production of vaccine at home;
- c. increasing fodder supply through intensive use of available land;
- d. improvement of livestock management through manpower training and skill development;
- e. improvement of the quality of draft animals and expansion of single animal ploughing system;
- f. emphasising development of dairy cattle and encouraging establishment of mini dairy farms through support services;
- g. encouraging goat and sheep production through supply of inputs;
- h. giving special emphasis on poultry husbandry for increased supply of meat and eggs;
- i. giving credit for livestock and poultry farming on reasonable terms in the private sector;
- j. improvement of marketing facilities for realisation of competitive prices by the farmers;
- k. discouraging import of powder milk and other livestock products;
- l. strengthening of the organisational and institutional framework of the Bangladesh Livestock Research Institute for undertaking research on livestock production and expanding the data base on socio-economic aspects of livestock development;

- m. training of the target groups like the landless, destitute women, unemployed youth and poor farmers in livestock management, inputs production, product processing and marketing for poverty alleviation and income generation.
- n. pricing of vaccines for cost recovery and commercialisation of Veterinary Vaccine Productions Laboratory under the Department of Livestock Services.

13.30 Major Programmes

13.30.1 Feed and fodder development: Feed mill will be established in the private sector at important places of the country. The government will provide support services in the form of credit and technologies. Fodder production will be encouraged through crop diversification, inter-cropping and plantation of fodder trees with timber trees.

13.30.2 Animal health and disease control: The programme consists of diagnosis, prevention and treatment, vaccine and medicine production and distribution. Qualitative and quantitative improvement will be made in disease control. Facilities will be expanded and number of veterinary surgeons will be increased by 350 during the Plan period. About 10,000 youths will be trained as veterinary health workers.

13.30.3 Animal breeding and breeder multiplication: Programmes will be directed towards multiplication of breeding of cattle, buffalo, goat, sheep, fowl and duck. Increase in milk, meat and egg production will be achieved mainly through quality improvement of local cattle by cross-breeding with deep frozen semen through artificial insemination and improvement of poultry through introduction of high breed commercial birds for eggs and meat production. The poultry population is expected to increase significantly during the Plan period.

13.30.4 Extension training and education: In order to increase livestock productivity, improved production technologies will be spread all over the country. Training of farmers, farm owners and NGOs for all kinds of related activities of this sector will be given through extension services and formal and informal education. Number of veterinary colleges and veterinary training institutes will be increased from 2 and 3 to 6 and 21 respectively which will be located in 6 divisions and 21 former larger districts.

13.30.5 Input production: Input production like production of vaccine, semen, day old chick, duckling and eggs through different projects included in the Plan will increase significantly. Vaccine production will increase from 350 million doses in 1996/97 to 400 million doses in 2001/2002, semen production from 1.8 million doses to 4.5 million doses, day-old chick production from 4 million to 6 million, duckling production from 0.5 million to 1.0 million and egg production from 2,815 million to 4,730 million during the Plan period. Limited input production still in the public sector will be gradually transferred to the private sector. Meanwhile, existing input supply programmes in the public sector will be run on full-cost recovery basis.

13.30.6 Employment creation and poverty alleviation: Programmes undertaken during the Fifth Plan will create positive impact on self and wage employment in livestock farming, chick and goat rearing, feed selling, and other income generating activities under different package programmes of the Department of Livestock. Credit programmes of various NGOs are supporting women's involvement in livestock production around homesteads using surplus labour and agricultural by-products. The government encourages these programmes. The total number of man days involved in the livestock development activities is likely to

increase from 12.50 million in 1996/97 to 16.00 million in 2001/2002. The beneficiaries like poultry workers will increase from 22,600 to 45,000, chick rearers from 8,000 to 12,000, key rearers from 5,00,000 to 14,00,000, feed sellers from 1,000 to 3,000, egg collectors from 2,600 to 6,500 and mini hatcheries from 200 to 1,000.

13.30.7 Projection of livestock products for Fifth Plan: The production of milk, meat and eggs will show a significant increase during the Fifth Plan period. Details may be seen in Table 13.10.

Table 13.10
Projection of Milk Meat and Egg Production During Fifth Plan

Products	Unit	1996/97 (Benchmark)		1997-2002 (Projection)				
		3	4	5	6	7	8	9
1	2	Projection	Achievement	1997/98	1998/99	1999/2000	2000/01	2001/02
Milk	'000' mt	1,600	1,510	1,680	1,764	1,850	1,942	2,058
Meat	'000' mt	600	575	630	662	702	744	788
Egg	million number	3,005	2,815	3,260	3,550	3,890	4,280	4,730

13.30.8 Marketing: Marketing of livestock products and by- products in our country is not properly organised. Livestock market places are under-developed and unhygienic. As marketing network of livestock products and by- products is not properly maintained, the producers are being deprived of their benefits. During the Fifth Plan, programmes will be taken up for improving marketing channel to ensure quality and equitable distribution of benefits at different stages of production process.

13.30.9 Research: Adaptive research on breeding, feeding, disease control, etc., will be undertaken by BLRI and appropriate technologies will be transferred to the users. Research result on fodder production, processing and preservation and vaccine production already tested and certified will be released shortly, while on going programmes in these areas will receive priority. Particular emphasis will be given to different aspects of poultry. Locally suitable poultry and cattle breed will be developed. Attempt for poultry parent and grand parent stock development will be made. Technology transfer through collaboration with international and advanced research institutions abroad will be promoted.

13.30.10 Role of NGOs: NGOs will perform major role in group formation, training, extension services, credit disbursement, supervision and recovery and conducting socio-economic studies related to development projects. Government-NGO co-operation will be more extensive for development of this sector.

13.30.11 Private sector: In the Fifth Plan period, one of the major and most important thrust of the public sector programme will be to support the private sector for the development of livestock and poultry. Towards this end, adequate technical, material and financial support, training on breeding, feed production, marketing, credit management, adoption of new technologies, disease control, etc., will be given to the private entrepreneurs. Some 23 technology packages have been developed and are being implemented on experimental basis since 1996/97. About 10,000 entrepreneurs will be trained up in different trades in the next five years. Major trainees will be poultry farmers, egg collectors, chick producers, chick rearers, feed producers, feed sellers, dairy farmers, goat rearers, etc. Integrated approach of developing livestock and fisheries will be encouraged. Fiscal supports

for importing quality breeds, feeds, feed-ingredients, equipment and medicine will be continued and further expanded, if necessary. Some productive units of the public sector will be transferred to the private sector to increase efficiency and for reduction of government subsidy for this sector.

13.30.12 Financial outlay during Fifth Plan: In order to implement the livestock development programmes during the Fifth Five Year Plan, an estimated amount of Tk.5,435.60 million will be spent in the public sector. Year wise break up is given in Table 13.11.

Table 13.11
Public Sector Financial Outlay for Livestock Development During Fifth Plan
(at 1996/97 prices)

Year	Financial Outlay
1996/97	690.00
1997/98	1,000.00
1998/99	1,000.00
1999/2000	1,012.00
2000/2001	1,164.00
2001/2002	1,259.60
Total (1997-2002)	5,435.60

(in million Taka)

13.30.13 In addition to the public sector development outlay of Tk.5,435.60 million, an amount of Tk.20,646.40 million is expected to be invested for the development of livestock by the private entrepreneurs. With increasing supports from the government, private individuals, groups and companies are coming up in a big way in different fields of livestock development. By and large, the main fields will be the establishment of poultry-duck hatchery, poultry-duck farms, dairy farms, goat farms and feed mills, fodder cultivation, beef-fattening farms, etc.

E. Forestry and Environment

Forestry

13.31 Past Performance

13.31.1 An estimated 2.45 million ha (17 per cent) of the total land of the country is under forest or potential forests. Out of this, 2.18 million ha is owned by the government as classified and unclassified forests and the rest 0.27 million ha is owned privately. In the past, wide-spread destruction, unplanned extraction, clearing of forest land for agriculture, etc., have reduced the forest coverage to about 8 per cent as against the minimum requirement of 25 per cent.

13.31.2 In the past plans, the main emphasis was to expand forests and to increase supply of timber and wood. Besides, qualitative improvement of natural forest through artificial regeneration was also given priority. During the Fourth Plan, extraction of forest resources and afforestation of the newly accreted lands continued. Later, due to increased need of environmental conservation, extraction was discouraged. Major thrust during the Fourth Plan was on people's participation and private sector investment in the management and development of forests. Forest plantation during the Fourth Plan was 43,619.84 ha against the

target of 46,947.50 ha showing 93 per cent achievement. The plan target of 16,158 km. of strip plantation was achieved by almost 100 per cent. Rubber plantation covered 1,261.78 ha of land and 7.83 million kg. of rubber was produced. Moreover, the coastal afforestation programme, bamboo, cane and murta plantation and industrial and strip plantation showed good performance.

13.32 Fifth Five Year Plan

13.32.1 Objectives: The main objectives during the Fifth Plan are to expand forest resources, make forests productive, develop institutional capabilities, and to encourage people's participation. By the end of the Fifth Five Year Plan, it is envisaged that the tree coverage will be increased to 14 per cent of the land area of the country and a sustainable status of existing forest resources will be achieved with the active participation of the local populace. Specific objectives will be to:

- a. expand and rehabilitate the forest resources to increase productivity;
- b. conserve and protect the eco-system for bio-diversity and overall environmental stability;
- c. continue and expand people-oriented afforestation programme to elevate socio-economic well-being of the people;
- d. promote multiple land use technology like agro-forestry to ensure increased productivity and supplement agricultural production;
- e. effectively conduct forestry extension activities to transfer improved technology and research information to end-users, e.g., local people and private homesteads;
- f. conduct need-oriented co-ordinated research and experimental works;
- g. initiate development of quantitative and qualitative human resources;
- h. achieve meaningful participation of local people, local government bodies, NGOs and government agencies in forestry programmes; and
- i. encourage private plantation of rubber, teak, mango, jackfruit and other high-value trees.

13.33 Policy Strategy and Programme

13.33.1 In line with the above objectives, policies, strategies and programmes for the forestry sub-sector during the Fifth Plan will be as follows :

- a. The natural forests of the country will be set aside for conservation purpose. That means, the productivity of plantations will have to be increased manifold. People's participation will be incorporated in all forest development as far as practicable including maintenance. In this regard, zoning system might be initiated. People's participation will be encouraged in the peripheral and buffer zones. Integration of tree plantation and crop cultivation will be practised. Multi-purpose trees will receive special attention.
- b. Existing low productive plantations, both mature and deforested, will be replanted in the hill forests. Scientific management principles will be strictly observed to restore productivity of these lands. A business enterprise system will be introduced to manage forests for profit. A total of 1,05,000 ha of plantations will be raised in the reserved, protected and unclassified state forest land of hilly areas during the Plan period.
- c. The existing coastal afforestation, including mangroves, will also be continued. The existing mature coastal plantations will be cut and replanted. An area of 18,000 ha will be planted and replanted in the coastal areas. The Sundarbans Reserve Forest

(SRF) is the largest single natural mangrove forest in the globe. However, SRF is presently engulfed with severe ecological problems. The most important species of this forest, Sundari is affected with top dying. Other aquatic, floral and faunal diversity are fast disappearing or on the verge of extinction. Following the integrated development approach for the forest sub-sector, an Integrated Resource Management Plan has been prepared. Another programme for bio-diversity conservation in SRF is in the pipeline. Extraction of top-dying Sundari trees and enrichment plantation is also a priority issue of the forestry sub-sector. During the Plan period, 2.5 million cft. of Sundari will be extracted and enrichment planting of 2000 ha will be carried out in the Sundarbans. The sal forests of the country has been degraded and deforested for many years. The programme to rehabilitate the sal forests will gradually be taken up as before. A total of 32,000 ha of agro-forestry and woodlot plantations will be raised under different projects in the sal forest regions.

- d. To prevent the extent of damage by cyclones and tidal surges, a programme will be undertaken under which 24,500 km. of strip forests will be raised during the Plan period.
- e. The reedlands of Sylhet has long been lying unutilised. In addition to the existing reedland development project under implementation in these areas, some more programmes will be taken up in future. Under the Fifth Plan, 7,000 ha of reedlands and 1,000 ha of wetlands will be planted by local government bodies with people's participation at grassroots level. In addition to this, 7,000 ha of char land will also be planted under the Forestry Sector Project.

13.33.2 Farmland forestry: Potentials for increasing productivity of the farmlands which are degraded due to drought condition and in the gully areas especially in the north west, exist. A project will be undertaken to afforest the farm lands/farm land ridges. Agro-forestry will be made popular gradually. About 8,000 ha of farm land plantations will be raised during the Plan period.

13.33.3 Social forestry: Social forestry has now become a social movement in Bangladesh. The programme includes expansion and strengthening of 335 thana nurseries, establishment of 2,000 union level nurseries, expansion and strengthening of 80 forest extension and nursery training centres, distribution of 40 million seedlings and raising of 19,000 km. of strip plantations. The local government bodies will co-ordinate the afforestation programmes at the grassroot level under this programme. During the Fifth Plan, NGOs will be more directly involved in afforestation programmes. They will be motivating people through informal training and other extension sources and will help the Forest Department to implement its programmes. In some cases, they will be co-sharers of benefits of the plantation projects.

13.33.4 Rubber plantation: Three hill districts and parts of greater Mymensingh, Sylhet and Tangail are specially suitable for rubber cultivation. Rubber plantation in Bangladesh was started on a pilot scale in 1961 by BFIDC. So far an area of 31,118 ha (1995) has been planted which yields 7.83 million kg raw rubber in the public sector. A total of 16,527 ha has, of late, come under rubber plantation in the private sector with a production of 0.25 million kg. Taken together, these account for about 35 per cent of the country's requirement for raw rubber. The yield rate, however, is not satisfactory. This is mainly because of poor seed and management, inadequate technical knowledge, lack of infrastructural facilities like access to roads and electricity, support services and credit. These problems will be addressed properly

in the Plan period. Inter-cropping with fruits and vegetables will be attempted. Joint participation of local and foreign investors will be explored.

13.33.5 Wood energy development : Wood energy contributes 13 per cent of the total fuel consumption of the country. Wood fuel is the most important form of energy for domestic use in rural areas. In Bangladesh, domestic cooking consumes 65 per cent of fuel wood and the rest 35 per cent is consumed by the industrial and commercial sectors. There is a wide gap between supply and demand of fuel wood in the country. To meet high demand relative to supply, recently through social forestry, short/medium rotation fast growing tree species have been planted along the roads and embankments, and on marginal and fallow lands with active participation of local people. BCSIR has developed efficient wood burning oven. Further research programmes on development of wood fuel, efficient use of wood, etc., will be undertaken in the Plan period to reduce strain on wood supply. Technical assistance may be required for this purpose.

13.33.6 Non-wood forestry products: As a subsidiary product of forests, non-wood forest products have substantial potentials for economic benefit. Bamboo, cane, murta, medicinal plants, honey, wax, gol-patta, etc., did not receive proper attention in the past. Non-wood forest products will be developed during the Fifth Plan in a systematic way. The Fifth Plan projects to cover 8,000 hectare with non-wood forest products.

13.33.7 Forestry survey and research: Emphasis will be given to homestead private forests in terms of genetic research (tissue culture) to improve productivity. Supply of inputs will be made cheaper and easier. Emphasis will be given for maximum utilisation and multiple use of land. Research on non-wood forest products, especially for rural use, will be conducted. The forest soil survey will be completed so that site-species matching can be ensured. In addition, detailed inventory of forest resources will be carried out to prepare specific forest management prescriptions. Moreover, detailed survey of about 400,000 ha forest lands will be conducted and forest areas will be demarcated to avoid unlawful encroachments.

13.33.8 Forest institutions, policies/legislation: The responsibility of development of forestry in the country rests largely with the Forest Department (FD). But the FD has long been constrained by shortage of skilled manpower, logistics and legal backing. Development of forestry to a large extent will be contingent on the institutional development/reforms of FD and other allied institutions. Future actions during the Fifth Plan will be in accordance with the new Forest Policy and the Master Plan. New laws pertaining to the conservation of forests and wildlife will be introduced. FD will be reorganised and participation of local people will be emphasised. The role of BFIDC as a public sector corporation will be reviewed, especially considering the declining scope of mechanical extraction from Chittagong Hill Tracts and opening up of rubber plantations to the private sector.

13.33.9 Extension and training: Recently, high emphasis is being given to participatory approach for development. Involving local people in implementing and maintaining development programmes is the cardinal principle of such approach. Thus, during the Fifth Plan, people-oriented programmes will receive special attention. There is a need for vigorous forestry extension activities and training to implement these programmes. The Fifth Plan projects to train about 100,000 persons, especially in social forestry at the grassroots level. Besides, as mentioned earlier, to develop the skills of manpower in the forestry sector, a total of 1,550 persons will be trained in professional, sub-professional and bottom level of the Forest Department and allied agencies.

13.33.10 Conservation: Presently, about 1.5 per cent of the total land area falls under protected land area category which is about 10 per cent of the total forest land. The protected area will be increased to 15 per cent during the Plan period. Effective management plan for all the protected areas will be prepared with the introduction of zoning system. People's participation will be effectively utilised in conserving resources in the respective zones. Along with this, eco-tourism will be introduced in a selective way based on the carrying capacity of the eco-system. Use of alternatives to forest products like steel/plastic furniture and aluminium structures will be encouraged. This will ease the pressure on forest products. Ban on the use of fuelwood in brick fields will continue and be made more effective and other modes of efficient use of energy will be promoted, e.g., improved cooking stove. Moreover, programmes will be developed and implemented to protect the threatened/endangered species of flora and fauna and the fragile eco-system. Wildlife farming of deer and reptile like crocodiles, iguana, snakes and frogs, etc., will be encouraged and promoted on a commercial basis through private initiatives.

13.33.11 Financial outlay: An amount of Tk.6,982.10 million has been provided for development of forestry in the public sector during the Fifth Plan. Details are given in Table 13.12.

Table 13.12
Physical Programme and Financial Outlay for Development of Forestry in Public Sector
During Fifth Plan

Item	Physical Activities	Financial Outlay
(in million Taka)		
FORESTRY SUB-SECTOR		
1. Plantation and Maintenance (hectare)	209,938	2,729.20
a. Hill forests (RF, PF, USF) (ha.)	105,000	1,365.00
b. Coastal afforestation and enrichment plantation in the SRF (ha.)	20,000	260.00
c. Reed land, wetland and charland plantation (ha.)	15,000	195.00
d. Agroforestry, woodlot and farmland afforestation (ha)	40,000	520.00
e. Strip plantation (24500 km) equivalent to (ha.)	19,000	247.00
f. Bamboo, cane and medicinal plants (ha.)	8,000	104.00
g. Vacant land in tea garden, around pond banks and in Barind tract gullys (ha.)	2,938	38.20
2. Seed orchard establishment (Seed orchard division)	4	129.74
3. Seedlings distribution (million number)	56.6	468.00
4. Jhumia Rehabilitation (family no.)	3,000	233.00
5. Development of Wildlife Conservation, Environment, Education, Recreation etc.	-	996.66
6. Physical Infrastructure	-	650.00
7. Vehicles/Equipment	-	191.00
8. Survey, Demarcation, Inventory and Work Plan Preparation	-	203.00
9. Manpower	3,000	708.20
10. Extension and Training	-	203.20
11. Research	-	270.00
12. Miscellaneous	-	200.10
TOTAL		6,982.10

13.34 Private Forests

13.34.1 In Bangladesh the village forest area is comprised of only 0.27 million ha. But this forest has been meeting most of the demand for forest products like timber, firewood, etc. Over the years the village forests including the homesteads have grown into a major source of forest products, especially with the initiative and involvement of local people. However, during the earlier plan periods, supports were provided from the government, mainly in terms of technical back-up and extension services. More support is necessary to establish this as a sustainable source of forest resources especially for promoting multi-purpose tree species of high productivity. Extension, training and credit facilities will be provided to encourage the private sector to undertake rubber, teak, jackfruit and other high value crop plantation on a commercial basis.

13.34.2 With the successful implementation of social forestry, thana afforestation, homestead forestry, farm forestry and agro-forestry programmes/projects, increasing investment is coming up in the private sector as well as in the public sector. An amount of Tk.4,732.00 million is projected to be invested by the private sector for nursery development, seedling raising, plantation, maintenance, etc., in the Fifth Plan period.

Environment

13.35 Past Performance

13.35.1 Bangladesh is facing a number of environmental problems. These have originated mainly from population pressure, extreme poverty, natural disasters, depletion of forest resources, energy crisis, unplanned urbanisation and industrialisation, water pollution, air pollution in major cities, soil degradation, etc. Bangladesh has been trying to combat environmental degradation and correct the same with limited facilities and resources.

13.35.2 The main theme of programmes of the Department of Environment (DOE) in the past was to develop institution and policy and programme tools to fulfil its mandate. During the last plan period, one of the vital projects of the Department was the "Improvement in Dhaka Urban Environmental Infrastructure Project" to the end of strengthening DOE's capabilities in environmental planning, pollution control and monitoring. Under this project, a laboratory and functional building was constructed at Dhaka along with procurement of 24 items of laboratory equipment and logistic supports. There was a plan for development of other regional laboratory/office building during the Fourth Five Year Plan. Due to various constraints these works could not be undertaken till the last financial year.

13.35.3 Ministry of Environment and Forest completed a comprehensive study on National Environmental Management Action Plan (NEMAP) for identifying probable environmental concerns/issues and their remedial measures in different sectors of the economy. A good number of programmes and projects have been recommended for implementation under different ministries/organisations. Subsequently, another TAPP 'Bangladesh Environment Project (BEP)' was taken up to formulate investment projects in the light of NEMAP recommendations.

13.36 Fifth Five Year Plan

13.36.1 Objectives: The main objectives of the Environment sub-sector during the Fifth Five Year Plan are as follows:

- a. promoting appropriate environment management system for sustainable development;
- b. ensuring conservation of bio-diversity and its sustainable utilisation;

- c. ensuring active participation of the poor, especially the women, in environment management activities;
- d. promoting environment-friendly activities in development programmes/projects;
- e. preserving and protecting the natural resource base;
- f. strengthening the capability of public and private sectors to manage environmental concerns;
- g. minimising environmental pollution from different industries;
- h. monitoring and controlling present environmental pollution and degradation related to soil, water and air;
- i. fulfilling obligations under international treaties and conventions for minimising adverse impacts on global environment;
- j. promoting co-operation with regional and international institutions/organisations to address global environmental problems;
- k. undertaking research and development for innovating technology in national perspective and application of modern technology, information exchange and benefit sharing with other countries; and
- l. creating public awareness in order to participate in environment promotion activities.

13.37 Policy and Strategy

13.37.1 The following policies and strategies will be taken up during the Fifth Five Year Plan to attain with the above objectives of the environment sub-sector:

- a. National Environment Council headed by the Prime Minister and Executive Committee of National Environment Council headed by the Minister for Environment and Forest will be more active for policy designs and programme directives;
- b. Environment committees at division, district and thana levels with people's participation will be strengthened; attempts will be made to form this committee at union parishad level also;
- c. Department of Environment will be strengthened in the light of existing Environment Policy, Laws and Action Plan in order to co-ordinate, monitor and implement these activities;
- d. Drafting of rules, regulations and guidelines under the Environment Protection Act (EPA) 1995 will be finalised soon in order to ensure effective enforcement of EPA;
- e. Sectoral legislations are to be reviewed and redrafted in the light of Bangladesh's commitment expressed through signing and ratifying a number of International Conventions and Protocols on environment;
- f. 'Polluters Pay Principle' will be followed in order to ensure strict compliance of environmental legislation; and
- g. Incentives in the form of tax-rebate, tax-holiday, etc., will be provided and incremental cost incurred by the environment-friendly entrepreneurs will be met in various forms and from multiple sources;

13.37.2 Programmes : In considering the socio-economic and environmental aspect of the country, the following activities/programmes/measures will be taken in the environment sub-sector during the Plan period :

- a. Raising manpower and infrastructure development of the DOE in order to fulfil its mandate; there is an urgent need to create and establish 2 (two) new divisional offices in Sylhet and Barisal Divisions and 12 (twelve) sub-regional offices with laboratory

- and other necessary facilities of local government at old districts of the country during this Five Year Plan period;
- b. Skilled manpower is essential for better environmental management and co-ordination. In this regard, DOE will undertake training programmes on different subjects concerning environment;
 - c. Survey, research and development activities in different fields and subjects will be taken up to combat environmental degradation and other environmental problems. A research and training centre will be set up during this Plan period;
 - d. Facility of data-base and documentation of different environmental subjects and fields will be created to help decision makers, other professional groups, institutions and government departments and ministries to formulate an appropriate plan of action to protect environment. United Nations Environmental Programme (UNEP) is going to establish electronic information network in DOE shortly;
 - e. Public awareness is a key to achieve success in any national programme. With the help of electronic and other media, it has now become very easy to reach all the people within a short time. DOE is trying to use all kinds of modern media in order to disseminate information on environmental issues and encourage entrepreneurs to come up with more investment;
 - f. DOE will formulate projects and undertake activities to the end of environment protection of Bangladesh, Agenda-21 and NEMAP and take initiative to implement international protocols and agreements on environment;
 - g. "Environmental Court" may be established to resolve all cases of violation against any clause under the Environment Protection Act, '95 and other rules, regulations and policies meant for preserving and protecting the environment;
 - h. Establishing treatment plants for industries (e.g., cement, fertiliser, paper, textiles, handloom, leather, etc.) and making their use mandatory;
 - i. Introducing self-monitoring system in Export Processing Zones and other industrial areas; and
 - j. Strengthening drinking water quality surveillance.

13.37.3 Physical programme and financial outlay of the public sector for development of environment during the Fifth Plan are shown in Table 13.13.

Table 13.13
Physical Programme and Financial Outlay for Development of Environment
in Public Sector During Fifth Plan

(in million Taka)		
Programme	Physical Activities	Financial Outlay
Strengthening of DOE at regional and sub-regional levels.	18 offices	120.00
Phasing-out of ozone depleting substances	-	20.00
Biodiversity management	11 Centres	110.00
Environmental quality control, monitoring and management.	19 Air Monitoring Stations and 6 Treatment Plants.	120.00
Public awareness on environmental standards	-	10.00
Alternative energy development.	-	10.00
Agenda-21: Implementation follow up.	-	10.00
Total		400.00

13.37.4 Private entrepreneurs are expected to invest in environmental protection and development. In setting up and maintaining places of scenic beauties, in preventing wanton destruction of good and pulsating environment and in keeping Bangladesh beautiful, private sector is expected to come up in a larger way hitherto not accounted for in the recent past. Private investment for environmental development in the Fifth Plan is projected to be at least Tk.100 million, i.e., a fourth of the envisaged public sector investment.

Water Resources

13.38 Introduction

13.38.1 The twin problems of shortage of water during the dry season and its abundance in the rainy season are critical to the development and management of water resources in Bangladesh. During the winter months, optimum use of available water resources will have to be made taking into consideration the multifarious demand for use of water for domestic need, irrigation, navigation, fisheries, livestock, forestry, environment, etc. On the other hand, in the wet months, the main tasks, in addition to provision of supplementary irrigation, are controlling, regulating and managing of floods to protect human lives, properties, crops, etc. It is estimated that 7.56 million ha could be developed for irrigation as against the current irrigated area of 4.00 million ha while 5.76 million ha will require flood control and drainage (FCD) facilities as against 4.2 million ha covered in 1996/97. Bangladesh, being in the lower riparian areas of three major rivers of the world, the Ganges, the Brahmaputra and the Meghna, could not since long undertake any meaningful water resources development programme to harness the water flows of these rivers for the benefit of its people. Now, following the treaty for sharing the Ganges water with India, vista of opportunities have been opened up for regional, sub-regional, basin and sub-basin wise development and management of water resources for the benefit of all peoples of the region. It is in this backdrop that the Ganges Barrage is being taken up for implementation during the Fifth Plan period.

13.39 Major Issues: Physical Environment

13.39.1 Most of Bangladesh is located within the flood plains of the three great rivers mentioned above and their tributaries and distributaries.

13.39.2 The three rivers drain a total catchment area of about 1.72 million sq km, of which only about 7 per cent lies within Bangladesh. This limits the ability of the country without co-operation of the upper riparian to have any control over the inflow of water and sediment that flow over it to discharge into the Bay of Bengal. There are five major adverse effects of this which are described below:

a. Flood and drought

- i. The country's unique geo-physical setting makes it extremely vulnerable to both flood and drought. The annual minimum flow of rivers near the Bay of Bengal is only one-twentieth of their peak monsoon discharge. The high water levels in the major rivers during monsoon cause drainage congestion and over-bank spillage of their tributaries which is often exacerbated by runoff from coincident high local rainfall. Over the 1954-93 period, this resulted in seasonal and fairly predictable inundation over an average of about 26,200 sq. km. or about 27 per cent of the country's net cultivable area of 95,600 sq. km. However, periodic severe flooding is also common and during the aforesaid 39-year period, flooding covered 37 per cent or more of the country in one out

of every 10 years. The record was in 1988 when almost 60 per cent of the country was inundated.

- ii. Certain parts of Bangladesh are also subjected to drought during the monsoon season which adversely affects the cultivation of kharif crops. The upstream withdrawal of water from some rivers by the upper riparian during the dry season has aggravated the situation, giving rise to need for supplementary irrigation and combating salinity and other ecological problems.

b. Siltation: The combined annual average sediment load entering Bangladesh and conveyed to the Bay of Bengal via the main rivers is estimated to be about 0.77 billion mt, varying over a range of 0.45-1.84 billion mt during the period 1956-88. A part of this sediment load is deposited on the floodplains during the flood season, gradually changing its topography and drainage conditions. Bangladesh has an estimated total of 25,000 km of drainage channels and their water conveyance capacity and navigability have been seriously threatened by continuous morphological change of river beds. The problem has not been properly attended to in the past on the ground that dredging is expensive. However, such generalised assertions must be tested against specific cases where very selective dredging and desiltation programme, combined with developing raised platform could provide cost-effective solution of the problem and also assist in poverty alleviation and environmental upgradation.

c. River bank erosion

- i. The floodplains and coastal delta are in a constant state of slow morphological change. The large seasonal variation in river flow results in a varying sediment transportation capacity and causes river-bank erosion, migration of river-banks and meandering river channels. Recent satellite image studies of the Ganges-Brahmaputra-Meghna rivers show that 106,300 ha were lost to erosion, while only 19,300 ha were accreted over the period 1982-92. The net area of 87,000 ha lost to erosion is equivalent to an annual erosion rate of 8,700 ha. Most of it is agricultural land.
- ii. River bank erosion has significant economic and social impacts. The loss of land, crops and property has led to landlessness and impoverishment of thousands of households. A study showed that out of the total population of 1.88 million living in the Brahmaputra floodplains, 450,000 live within the banklines or riverine chars and the remainder within a kilometre of the river. Over the period 1980-92, land capable of supporting 405,000 people was eroded and new char land created from the eroded sediment could only support 55,000 people causing a net displacement of 350,000 people.
- iii. Since river training and river bank protection work involve huge sum of money, major investment in these areas was not encouraged in the past by our development partners. But lately, there has been a growing concern and reassessment of the economic and socio-political benefits of protecting important towns, infrastructure, hats and bazars as well as agricultural land.

d. Cyclonic storm surges: Natural calamities are recurring phenomena in Bangladesh, the most severe ones occurring in the form of cyclonic storms which mainly affect the coastal districts. The country has over 700 kms of coastline on the mainland and several offshore islands in the Bay of Bengal. Vulnerable areas include the important port towns of Chittagong and Khulna and heavily populated islands of Sandwip, Kutubdia and Hatiya. During the last 125 years, over 42 cyclones hit the coastal belt; 14 occurred during the last 25 years. Cyclones often take a heavy toll of human life, livestock, crops, properties, and physical infrastructure. Such cyclones also tax the country's institutional and financial

capabilities, since resources have to be diverted to provide immediate relief to the affected population and to restore damaged or destroyed physical facilities.

- e. Salinity intrusion:** Since the Farakka Barrage in West Bengal went into operation, the net availability of surface water to Bangladesh via the Ganges during the dry season was reduced below critical level. The impact of this reduction is demonstrated by a marked increase in salinity in southwestern Bangladesh. The southern part of this affected region is subject to tidal action from the Bay of Bengal and saline intrusion from the tides is normally pushed back by upland flows of fresh water from the Ganges through its tributaries in which the Gorai plays a vital role. Due to flow reduction since 1975, tidal limits and the salinity front have moved northward. Around Khulna, some 146 km. upstream from the Bay, the salinity (in terms of electric conductivity) has increased from 380 micro-mhos/cm in the pre-diversion period to 29,000 micro-mhos/cm. This is a major problem in over 25,900 sq. km of the Ganges dependent area and is causing both short and long-term problems in crop production, fishery, forestry, power generation, industrial development, health care and domestic water supply. Following the Ganges water sharing treaty with India signed on December 12, 1996, the situation seems to be improving; the desired improvement will not take place till the proposed Ganges barrage is constructed and water flowing down the Gorai and other relevant distributaries is augmented.

13.40 Water Resources Potential

13.40.1 The net cultivable area of the country is estimated at 9.03 million ha of which 7.56 million ha is suitable for irrigation. The primary mode for increasing agricultural production for the last two decades has been an expansion of irrigation coverage during the rabi season. Irrigated land in Bangladesh comprises approximately 3.99 million ha. Of this, large irrigation systems currently service about 0.40 million ha; shallow tubewells, about 2.23 million ha; low-lift pumps, 0.58 million ha; deep tubewells, 0.52 million ha and traditional and other methods, about 0.26 million ha.

13.40.2 Investment in barrages, reservoirs, pumps and canals is likely to provide adequate access to fresh water supply in the future. The Ganges water sharing treaty has removed some degree of uncertainty in the quantum of surface water available to south west Bangladesh during the dry season. However, with increasing use of water by a growing population and increasing industrial and agricultural uses, there may be a need for surface water storage and additional ground water augmentation. In this context, reaching agreement with the upper riparian in respect of sharing of water of other common rivers is of vital importance. Both for intermediate and long term planning accurate assessment of surface and ground water availability throughout the year will be necessary as only then conjunctive use could follow.

13.40.3 Proper drainage planning is also necessary for removing excess water during the wet season. Development in drainage infrastructure, both on public and private accounts, will have to be carefully thought out and the enabling environment created for public participation.

13.40.4 Managing the supply of water has been addressed in piecemeal fashion in the past. Flood management has been a top priority for decades, but an environment-friendly mechanism for doing so is yet to be designed for protecting the interest of navigation and fisheries. However, once the total resource picture is clear, the upcoming water management plan will address the issue properly.

13.41 Institutional Framework

13.41.1 Since time immemorial, water has been viewed in Bangladesh as a free gift of nature. Systematic exploitation of water resources began in the country in the early sixties with the start of the flood control, drainage and irrigation (FCDI) projects as prepared under the National Water Management Plan. It was then believed that crop vulnerability to flooding could be reduced by the construction of embankments and polders to create flood-free areas. Though Land and Water Resources Sector Study (1972) by the International Bank for Reconstruction and Development de-emphasised major FCD projects and recommended substantial public investment in minor irrigation, the preference for FCD along with major civil engineering work did not diminish very significantly. A National Water Plan (NWP) completed in 1991 proposed an ambitious programme costing US \$4.2 billion for 20 years for construction of FCD projects to increase monsoon rice production and to complement minor irrigation development. The plan also recommended studies to establish the engineering and economic feasibility of Ganges and Brahmaputra Barrages and measures to control salinity in the south-west region. The latest studies under the aegis of the Flood Action Plan (FAP) also stressed structural measures along with consideration for such aspects as impact of these on fisheries, project-affected people and environment.

13.41.2 The dominance of structural measures as the primary mode of water resources development led to the empoldering of over 3 million ha or about one-third of the net cultivated area at a cost of over US \$1 billion over the past 30 year period. This fixation has deeply influenced the institutional evolution of the BWDB.

13.41.3 Past water sector planning has been criticised on the ground of its heavy reliance on structural measures that caused major externalities and sacrificed the interest of other groups like the fisherman, boatman, landless labourer and women. In a country with severe water imbalances during different periods of the year, it is inevitable that any solution will have impact on one or the other users of water adversely to some extent. The issue then becomes one of minimising the hardships to all by developing an approach that will protect the minimum interests of the most important constituencies (the poor and underprivileged, for example), ensure water availability for critical needs (drinking water for example) and prevent environmental degradation (by taxing polluters for example). All of these require development of a systematic policy and programme for equating the demand and supply of water through economic measures and socially and environmentally friendly means keeping in mind the legitimacy of claims of all user classes.

13.41.4 The Water Resources Planning Organisation (WARPO) is charged with overall integrated water sector resources allocation and macro level planning while the BWDB is the principal executing agency for carrying out those plans into action after conducting micro level planning. The WARPO is a new organisation and is primarily run by engineers borrowed from the BWDB. There will be vast improvements in its institutional capability when its own multi-disciplinary staff will be recruited which is under way.

13.42 Review of Past Performance

13.42.1 Water sector development strategies and policies have undergone numerous changes overtime and consequently the medium and short term plans had to be modified and guided by these policy objectives. For example, minor irrigation, which covers about 90 per cent of the total irrigated area, was gradually privatised and now it is entirely operated by the private sector. During the Fourth Plan, emphasis was given on the small scale FCDI projects with minor irrigation development to optimise both irrigation coverage and flood control and

drainage improvement to the required direction. Necessary policy measures have been taken to reduce the capacity gap between big and small farmers through formation of water users groups and by providing technical support services and credit to small farmers.

13.42.2 At the end of Fourth Plan period (June '95), surface water irrigation covered an area of 1.14 million ha. On the other hand, cumulative achievement of ground water irrigation at the end of June '95 was 2.17 million ha as against the target of 3.02 million ha.

13.42.3 During the past plans, BWDB constructed about 8,515 km of embankment, 4,774 km irrigation canal and 3,462 km of drainage channel to protect valuable crops, lives and properties. It was estimated that an area of about 4,084 million ha was brought under flood control and drainage facilities at the terminal year of the Plan period.

13.43 Fifth Five Year Plan

13.43.1 Objectives: The objectives of the Plan in the water sector stretching over the period from 1997 to 2002 will be to:

- a. alleviate poverty and generate employment opportunities;
- b. ensure ecological balance;
- c. promote water conservation for irrigation and other uses;
- d. enhance conveyance capacity of water courses through desiltation;
- e. protect towns, commercial centres, agricultural lands, etc., from erosion of inland and border rivers;
- f. promote culture fisheries in the completed projects;
- g. promote optimum use of available flows of the common rivers in domestic, agricultural, fisheries, navigation and industrial sectors;
- h. fulfil the need of irrigation for achieving foodgrain self-sufficiency by ensuring year-round sustainable irrigation through conjunctive use of surface and ground-water thus avoiding over-extraction of sub-surface water;
- i. control floods to protect crops, lives and properties and promote both HYV rice and fish cultivation through controlled flooding;
- j. prevent saline water intrusion;
- k. ensure people's active participation in planning, implementation and maintenance of water sector projects; and,
- l. carry out studies on future water resources development projects.

13.43.3 Strategies: In order to achieve the Plan objectives, the following short and long term strategies will be adopted:

- a. short term strategy will lay stress on maximum utilisation of existing facilities through command area development, effective operation and maintenance and rehabilitation of existing projects, quick completion of carry-over projects and balanced use of surface and ground water and desiltation of rivers and channels. In case of new projects, an integrated basin/sub-basin planning approach will be followed. Avoidance of conflicts between in-stream and off-stream users of water, delineation of coastal areas for shrimp culture on a scientific basis and zoning of areas for shrimp cultivation and paddy cultivation, development of data base and encouraging local participation in project planning, implementation and operation and maintenance, protection of towns, commercial centres and agricultural lands from erosion of inland and border rivers including repair and maintenance of existing river bank protection works will be pursued;

- b. the long term strategy envisages major interventions. Ultimate solution to water resource problems lies in the development and utilisation of the major river waters. Investigations, surveys and studies must, therefore, start for a balanced long term development utilising major river waters through a system of barrages. The recently concluded the Ganges water sharing treaty has unveiled a new vista for a wide range of possibilities in this direction;
- c. comprehensive flood control/management measures will be undertaken to protect lives, properties, and crops keeping in view open water fishery production needs and requirements. Cropping patterns will be changed and improved varieties will be introduced in the protected areas for increased foodgrain and fish production;
- d. needs and programmes to sustain open water fish resources will be included in the irrigation and flood control and drainage projects for long term development; and
- e. As IWTA Master Plan for navigation is under implementation, its effectiveness will gainfully be used in the long term water resources planning, where applicable.

13.43.4 The core strategy: The following proposed measures will carry the water resource management strategy to the year 2010:

- a. **Increasing efficiency of completed projects:** In the previous section, it was noted that, in the past FCDI projects concentrated on irrigation, neglecting other competing needs for water. In addition, these facilities, for a variety of reasons, have not been able to perform to their optimal capacity. Given the need for irrigation expansion, it makes good sense to try to rehabilitate these completed projects through redesign and suitable modifications to remove, as far as practicable, their negative impact on other sectors such as navigation, fisheries and environment. There has to be another parallel effort to organise the beneficiaries for command area development and its long term sustainability.
- b. **River bank protection and environmental upgrading**
 - i. The havoc created by continued erosion by all the rivers in Bangladesh has been highlighted in the previous section. Unfortunately, this problem so far has not been systematically handled. For long, the government has been spending quite a substantial amount on river bank protection. But its impact has been marginal for the reason that the resources are distributed over too many projects covering innumerable sections without completing any section. This type of piecemeal work does not lead to any permanent solution but, more often than not, results in wastage of scarce resources. There is a need for massive investment, and since everybody cannot be satisfied all at once there will be need for prioritisation.
 - ii. Towns, river ports and markets have traditionally been developed by the side of rivers for obvious reasons. These are the growth centres of Bangladesh and they constitute life-line of the economy. Scarcity of resources and larger claim of agricultural needs have so long prevented reasonable allocation for their protection. Out of 240 identified town protection schemes, only 75 have been completed upto June 1996, 96 are at various stages of implementation and the rest are yet to be taken up.
 - iii. Side by side with protection work, there is need for reasonable investment on upgradation of environment. Water supply, improved road network, sewerage disposal, drainage system and other municipal services will be developed fast. With donor support, a modest beginning has been made. This will be intensified and carried out further.

c. Increasing conveyance capacity of rivers

- i. Ever since the birth of Bangladesh, siltation has become a major problem. This has not only adversely affected the navigability in major parts of 25,000 km long riverine routes but has also increased the level of salinity. About one fourth area of Bangladesh has been subjected to the hazard of either desertification or salinity.
- ii. In the past, meaningful desiltation programmes for sustaining desired navigability and water conveyance could not be taken up due to huge cost involvement. The problem has now compounded and it can no longer be ignored. A few surveys and pilot programmes carried under the FAP have revealed the prospect of selective dredging. If a method for partial cost recovery can be found, selective dredging can be a viable programme.

d. Major new investments

- i. As has been mentioned elsewhere, regional surface and ground water development will be reaching near saturation by early next century. This indicates the urgency for development of major rivers by constructing the Ganges and the Brahmaputra barrages. The National Water Plan (NWP-II) recommended feasibility studies of the two major proposed barrage projects in the Fifth Plan. When fully developed, the Ganges barrage, according to the feasibility study carried out in 1984, will be able to irrigate 1.33 million ha. Additionally, round the year sweet water flow through the distributaries of the Ganges will push back salinity intrusion thereby restoring the ecological balance of the Ganges development area. All these will help pursue environment-friendly agricultural and industrial activities which, in turn, will help alleviate poverty.
- ii. The potential to expand irrigation further brings up the question of increasing crop production by increasing production in the kharif (rainy) season. For that, flood protection will need to be provided in order to reduce the risk of flood losses and /or boost production of high yielding crops. Studies carried out under the FAP provides a policy and implementation framework under which HYV rice and fish can be cultivated through controlled flooding.

e. Strengthening and developing relevant institutions

- i. Pursuit of the Plan as outlined above will call for requisite capable institutions. Water sector agencies, particularly BWDB, suffer from many deficiencies. These are well documented in the relevant reports. Through efficient restructuring and over time, steps will be taken to strengthen the institutional capacity of BWDB.
- ii. While doing this, special efforts will be made to develop institutions for local level planning, people's participation at all stages of the project cycle, for ensuring accountability, transparency and long term sustainability of completed projects. Programmes will have to be designed in such manner that these can ensure participation by women and the landless. Finally, allout efforts will be made to minimise the adverse effects of water sector projects on environment. The environmental impact assessment (EIA) guidelines developed under the FAP will be helpful in this regard.

13.44 Programmes For Fifth Plan

13.44.1 Since the scope of further exploitation of surface water from the minor rivers and channels is gradually declining due to shortage of water, more emphasis will be given on the

immediate harnessing and use of main river water to augment the supply in smaller rivers and channels.

13.44.2 Small early implementation projects implemented in the past and currently under implementation by BWDB have created water conservation facilities by way of regulating the post monsoon outflow of the drainage system. Development of such facilities by way of command area development of completed projects will receive priority during the Plan period.

13.44.3 Gravity flow, Low Lift Pump (LLP) and other methods of surface irrigation are, at present irrigating about 1.15 million ha of land. This area is projected to increase to 1.32 million ha (about 15 per cent increase) by the terminal year of the Fifth Plan. Double lifting will be necessary to augment water availability in secondary channels for irrigation purpose.

13.45 Flood Control and Drainage

13.45.1 During the Plan period, small flood control and drainage projects will be continued in addition to phased implementation of specific river bank protection programmes. It is expected that drainage programmes may extend further to cover an area of about 4.9 million ha by the terminal year of the Plan period as against the actual coverage of 3.8 million ha achieved by the end of the Fourth Plan. Comprehensive flood control and management measures will be undertaken to protect lives, properties and crops keeping in view the needs of fisheries, environmental and navigational requirements, etc. For augmenting flows of the Gorai river and other selected rivers and canals, re-excavation of river-beds under Food for Works Programme and also by capital dredging will be carried out during the Plan period.

13.45.2 A prioritised portfolio of strategic vulnerable location of river banks will be identified for phased implementation of river bank protection programme. FAP studies have so far identified a number of hard points along the Brahmaputra and the Meghna rivers. A number of hard points along the Padma banks have also been proposed for protective works. The protective works of other minor rivers proposed to be implemented will be studied carefully before making any investment on these projects.

13.46 A Special Note on Construction of Ganges Barrage

13.46.1 The signing of the historic treaty on the sharing of the Ganges Water at Farakka on December 12, 1996 between Bangladesh and India has added a new dimension to the water management strategy.

13.46.2 Background: The Ganges has been flowing through Bangladesh from time immemorial; the life and livelihood of its people, along with the flora and fauna, have been shaped by this great river. The well-being of more than 40 million people in the south-western region of the country is entirely dependent upon the Ganges. The river provides drinking water, sustains agriculture, forestry and fisheries, helps operate a quarter of the country's industrial activities, prevents salinity intrusion from the Bay of Bengal and plays a determining role in maintaining the ecological balance of the country. The balance between man and nature in the Ganges dependent area (GDA) in Bangladesh rests essentially on the Ganges water as this is the only major source of water in the area and all other rivers receive water directly or indirectly from it.

13.46.3 Past studies: Ever since the preparation of the Master Plan in 1964, the importance of development of the surface water resources has been stressed time and again and the barrage over the river Ganges in Bangladesh has been envisaged for more than three decades

for an overall integrated water resources development in the GDA in Bangladesh as well as for overcoming the adverse effects of large scale diversion of the Ganges water at Farakka. Studies conducted thus far have identified the tentative location of the barrage from the point view of optimal water use and various other engineering and environmental considerations.

13.46.4 Objectives: The proposed Ganges barrage will be constructed at a location near Pangsha about 64.40 km downstream of Hardinge Bridge on the Ganges River. The main purpose of the barrage will be to supply irrigation water to the south-west region of Bangladesh. The project will provide irrigation to an area of 1.35 million ha from the Ganges. The net benefited area of the project will be 1.31 million ha. The time for construction of the Ganges barrage is estimated to be about eight years and the full benefit will be achieved after nearly 18 years.

13.46.5 Salient features: The following are the salient features of the Ganges barrage;

- a. the Ganges barrage, a 1,940 metre long structure is proposed to be constructed incorporating a road and rail bridge and gas, power and other services lines as required to be connected to either bank by the structure;
- b. a right bank main command canal, 74 km long, running south-west from the barrage to feed water into the Gorai, the Kumar, the Nabaganga, the Chitra and the Kobadak Rivers, with a headwork's capacity of 26,500 cusec will be one integral part of the project ;
- c. a second right bank main command canal, 43 km long, running south-east from the barrage to feed water into the Chandana, the Old Kumar and the Sitalakhya rivers, with a headworks capacity of 10,600 cusec will be the second integral part of the project ;
- d. a third right bank canal of 10 km long from the barrage pond near the Hardinge Bridge to serve the area to the west of the Ganges-Kobadak Scheme with headworks capacity of 3,000 cusec will be the third integral part of the project ;
- e. irrigation development by a combination of surface water gravity supplies, low lift pumps and shallow tubewells, which will serve an area of 100,000 ha will be the main components of operational ambits ; and
- f. drainage and flood control by embankments and sluices in low-lying areas covering 1.44 million ha within the command area will be the related objective in addition to irrigation.

13.46.6 Benefits: On its completion, the Ganges Barrage Project will:

- a. restore the basic resource (land) to its original position and safeguard it from further degradation;
- b. increase agricultural production through intensive use of modern techniques; increase in agricultural production following the introduction of irrigation, drainage and flood control will be from 2.20 mt/ha/year to 7.41 mt/ha/year, an increase of 5.21 mt/ha/year. The net economic benefit out of the increased agricultural production only will be about US \$1020 million a year;
- c. provide the required quantum of flows through the Gorai in the dry season to check the salinity intrusion in the south-west region of Bangladesh to maintain ecological balance and protect environment of the region;
- d. restore the natural bio-mass (including the Sunderbans) and safeguarding further destruction;
- e. safeguard the industries in the area;
- f. restore livestock and fisheries resources;

- g. improve soil moisture condition;
- h. increase job opportunities in many sectors including agriculture;
- i. provide crossings for traffic, gas and power across the Ganges and improve the communication system in the region ;
- j. revive economic potential for proper growth of regional economy ;
- k. safeguard public health and sanitation condition ; and
- l. help developing a balanced ecosystem of the region to safeguard environmental degradation.

13.46.7 Costs: The tentative cost of the project which includes barrage, main irrigation and drainage canals, has been estimated at Tk.141,000 million. A provision of Tk.17,175.50 million has been made in the Fifth Plan to undertake detailed feasibility and to prepare engineering works as well as to complete a part of the barrage construction.

13.47 Flood Action Plan (FAP)

13.47.1 Following the devastating floods of 1987 and 1988, Flood Action Plan (FAP) covering a number of regional and sub-regional studies were undertaken to find out the technical, social and environmental issues required to be addressed in formulating long-term flood control, drainage, irrigation and river management programmes. Based on the recommendations of some of the FAP studies, a number of follow-up investment projects have been taken up with donors' assistance. FAP started with 11 main components and 15 supporting studies and pilot projects for implementation during 1990-95. Most of the original programme of studies under FAP have been completed. The regional studies identified and evaluated a number of projects. Some other flood mitigation projects have also been identified in regional context. A few priority projects such as the protection of Dhaka city and a number of secondary towns, erosion protection on the Brahmaputra right bank and the rehabilitation of the coastal embankments are currently under implementation. Besides, there are a number of on-going long term studies and pilot projects.

13.48 Ground Water Irrigation

13.48.1 Shallow tubewell (STW) and hand tubewell (HTW): There have been changes in the rate of growth and utilisation of irrigation equipment following changes in the government policy during the last few years. For example, it is observed that withdrawal of subsidies from irrigation equipment has slowed down the pace of minor irrigation development. Future growth of minor irrigation will, therefore, depend on adjustment of policies and implementation of suitable programmes to encourage the private sector and individual farmers' participation in minor irrigation development. Strengthening of institutional mechanisms and required support services to the private sector will be provided by the government for accelerated development of STW and HTW irrigation technologies.

13.48.2 Deep tubewell (DTW): Because of high capital and operating cost, DTWs are not commercially attractive to the farmers at full cost. As a result, DTWs are projected to cover an area of 0.51 million ha during terminal year of the Plan as against the current level of 0.52 million ha. It is, therefore, felt that in the areas where DTWs are the only technically feasible modes of irrigation, adequate measures will be taken to make DTWs attractive to the farmers. Such measures will include introduction of high value crops, increasing the command area of individual tubewells through improved onfarm water management practices and formation of DTW users' groups, strengthening support services to water users' groups, including access to electricity, credit, market facilities, etc. Irrigation coverage under traditional methods of ground water equipment, i.e., Deep Tubewell (DTW), Shallow Tubewell (STW) and Hand

Tubewell (HTW) is projected to decline from the estimated 2.81 million ha in 1996/97 to 1.31 million ha by the terminal year of the Plan. Continuation of policy changes in terms of withdrawal of site restriction and subsidy, non-availability of water at required depth, etc., resulting in higher cost, particularly of DTW, are likely to lead to a decline in the use of these equipment by the poor farmers. However, reduction in irrigation area through these traditional methods is expected to be compensated by additional irrigation coverage of 2.23 million ha under relatively new technologies of Forced Mode Tubewell (FMTW), Deep Set Tubewell (DSTW) and Very Deep Set Shallow Tubewell (VDSSTW). It is expected that private sector investment in irrigation development during the Fifth Five Year Plan will be about Tk.5,010 million.

13.49 Involvement of Women in Development

13.49.1 Participation of women in the development and construction of irrigation and flood control infrastructure was found to be insignificant in the past. Presently, local women are working along with men as construction workers in the Food for Works Programme, embankment construction, tree plantation and other projects implemented by the Water Development Board (BWDB). Under the Fifth Plan, steps will be taken to involve distressed and unemployed women in such projects/programmes implemented by the BWDB. In addition, more avenues for employment of women are expected to be created in O & M activities of flood control projects and tree plantation and fish culture activities of BWDB projects. It has been estimated that 0.92 million person-days of incremental employment will be generated by the terminal year of the Fifth Plan which will include a sizable share for women.

13.50 Private Sector Participation

13.50.1 The government is fully committed to promoting the participation of the private sector in increasing irrigation coverage and command area development. As per existing policy measures, sales, marketing, distribution of fertilisers, irrigation equipment, farm machinery, etc., have been entirely transferred to the private sector.

13.50.2 It is noted that irrigation need by farmers is closely linked to rice and commodity prices. For example, if the rice price is low, farmers will be discouraged to spend more for irrigation to produce more agricultural commodities and as such, the expected command area is likely to be diminished. It is, therefore, necessary to evolve mechanisms for price stabilisation. Import of irrigation equipment and machinery will be further liberalised and fiscal policy turned in favour of private sector's participation. At the same time, necessary measures will also be taken to encourage efficient domestic manufacture of irrigation equipment and farm machinery as well as maintenance spares.

13.51 Cost Recovery from Irrigation Projects

13.51.1 Presently, BWDB is collecting irrigation tax from 12 irrigation projects out of 22 completed projects as per Water Rate Irrigation Ordinance of 1963. BWDB started collection of water rate since 1976/77. During 1995/96, the target of collection of water rate was estimated at Tk. 25.00 million against which the amount realised was Tk. 8.77 million. During 1996/97, the revenue collection target was estimated at Tk.30.00 million against which the amount realised till April/97 was Tk.8.59 million. The reasons for low collection was due to evading practices, power failure for which timely irrigation was not possible and lack of proper legislation and punitive measures against the defaulters.

13.51.2 Water pricing will be such as to convey the scarcity value of this resource to the users and beneficiaries to foster their motivation in the economic and social context. The water rate/charge will be adequate to cover the recurrent O & M cost and part of the capital cost. The objective of pricing policies will be to improve efficiency in water use. The users will have incentives to use only the amount of water they need and additional quantities will entail higher cost per unit. The present system of collection of water rate from the irrigation projects is not satisfactory due to procedural reasons and as such revenue generation from the irrigation projects is much lower than expectations. The collection of water rate will be initiated from all irrigation projects as soon as irrigation infrastructure/facilities are created and the beneficiaries will be motivated to pay the price for irrigation soon after they start getting benefits from construction of irrigation infrastructure. The water pricing for surface and ground water irrigation will be rationalised and collection mechanism improved through legislation and improvement of procedural practices.

13.52 Physical and Financial Programmes

13.52.1 Physical: Benchmark position of irrigation, flood control and drainage as of 1996/97 and projection for the terminal year of the Fifth Plan are provided in Table 13.14.

Table 13.14
Irrigation Flood Control and Drainage Projections During Fifth Plan

(area in million hectare)

Programme	1996/97 (Benchmark)	2001/2002 (Projection)
1	2	3
I. Irrigation :		
A. Surface Water Irrigation		
i. Gravity Flow	0.40	0.59
ii. LLP	0.58	0.66
iii. Traditional	0.17	0.07
Sub -Total (A) :	1.15	1.32
B. Ground Water Irrigation		
i. DTW	0.52	0.51
ii. STW	2.23	0.73
iii. HTW	0.05	0.07
iv. FMTW	-	0.01
v. DSSTW	-	2.10
vi. VDSSTW	-	0.12
Sub-Total (B) :	2.81	3.54
C. Others (Minor Irrigation)	0.04	0.18
Sub-Total (C) :	0.04	0.18
Total (A+B+C) :	4.00	5.04
II. Flood Control and Drainage	4.20	4.90

Sources :
 i National Minor Irrigation Census (1995-96)
 ii National Minor Irrigation Development Project
 iii Bangladesh Water Development Board.

13.52.2 Financial: The projection for public sector financial outlay for the development of water resources during Fifth Plan is Tk.73,373.13 million. The detail break-up is shown in Table 13.15. In addition, an amount of Tk.5,500 million is likely to be invested in water resources development by the private sector.

Table 13.15
Public Sector Financial Outlay for Development of Water
Resources for Fifth Plan (1997/98-2001/02)

(in million Taka)

Programme	Financial Outlay
1. Surface Water Irrigation	12,961.00
2. Ground Water Irrigation	3,600.00
3. The Ganges Barrage	17,175.51
4. Flood Control and Drainage including River and Town Protection	34,131.00
5. Surveys, Studies and Investigation	4,640.00
6. Others (Satellite Imagery, Mapping, Char Development etc.)	865.62
Total	73,373.13

13.52.3 Private sector's investment in development of water resources is estimated at about 10 per cent of the public sector's. The nature of investment required for development of water resources limits the scope for an enlarged role for the private sector in the continuing situational context.

Rural Development and Institutions

13.53 Introduction

13.53.1 Bangladesh is one of the most densely populated countries of the world and a vast majority of the population live in the rural areas. Poverty is widespread in the country and more so in the rural areas. It is estimated that around 50 per cent of the population lives below poverty line and about half of them is considered to be the hard-core poor. The rural poverty is characterised by landlessness, over-crowding in agriculture, underdevelopment of rural non-farm sector, colossal unemployment, low savings and acute shortage of credit facilities. Women are the disadvantaged group in the country and more so in the rural areas in their traditional setting with little literacy and almost no skill training. Rural infrastructure in the country consists of 2,100 identified growth centres, 14,400 km of feeder 'B' roads, 87,000 km of rural roads and some 8,300 km of water ways during the monsoon. These infrastructure that contribute towards rural development are mostly underdeveloped and poorly maintained.

13.53.2 For socio-economic development of the country as a whole, reduction of rural poverty is a must. Towards that end, RDI programme will aim at increasing income through productive employment generation in the rural areas and rural infrastructure development, including development of marketing network, to boost up economic activities. These call for undertaking intensive, expanded and multi-dimensional programme during the Fifth Five Year Plan.

13.54 Performance During Fourth Five Year Plan (1990-95)

13.54.1 Under the Rural Development and Institutions Sector, three major types of programmes were under implementation during the Plan period. These were production and employment programmes for the poor, development of physical infrastructure and small scale irrigated agriculture, drainage and flood control works.

13.54.2 Under production and employment programme, about 0.78 million members were enrolled in various formal and informal groups. Most of these group members became self-

employed on receipt of certain amount of credits. The credit disbursed to various formal and informal groups amounted to Tk. 3,019.00 million under BRDB.

13.54.3 Under LGED, the targets for construction of feeder roads seem to have been largely exceeded. Over 3,709 km of roads were constructed against the target of 2,399 km. Similar was the case with construction and rehabilitation of bridges and culverts. Around 42,000 metres of bridges and culverts were either constructed or rehabilitated against the target of over 30,000 metres. Tree plantation on the slopes of the feeder roads, rural roads and embankments were inbuilt in the construction programmes. LGED created over 112.0 million person-days of employment against the target of 133.1 million.

13.54.4 Ministry of Land established some 384 self-reliant ideal villages to rehabilitate 17,315 landless and rootless families. Chittagong Hill Tracts Development Board undertook some programmes for development of the hilly areas, particularly in the field of community development. BARD, Comilla and RDA, Bogra implemented some small projects, mostly experimental and pilot ones. The targets and achievements under the various programmes during the Plan period are shown in Table 13.16.

Table 13.16
Targets and Achievements of Major Programmes for Rural Development and Institutions During Fourth Plan (1990-95)

A. Production and Employment Programme (PEP)			
Programme	Units	Targets	Achievements
Formation of primary societies/group	number	23,581	16,882
Enrolment of members	number	529,621	777,660
Skill training	number	166,695	616,800
Shares/savings	million taka	159.6	449.33
Credit	million taka	330.3	3,019.00
Realisation of credit	million taka	-	2,559.15
Small Farmers Development Programme (SFDP)			
Formation of groups	number	1,982	5,625
Enrolment of members	number	12,145	35,597
Share/savings	million taka	7.3	30.4
Disbursement of credit	million taka	60.7	166.4
B. Development of Physical Infrastructure			
Development of growth centres	number	316	277
Development of feeder road Type -B	km	2,399	3,709
Construction of bridges and culverts	metre	15,039	41,987
Rehabilitation of flood/cyclone damaged bridges and culverts	metre	15,057	
Rehabilitation of flood/cyclone damaged pucca roads	km	2,929	2,574
C. Irrigated Agriculture and Irrigation Management Programme (IMP)			
IMP coverage (DTW)	number	1,556	1,499
(LLP)	number	207	156
IMP training	persons	8,555	6,215
D. Other Minor Programmes			
Settlement of families in Adarsha Gram	number	35,140	17,315
E. Employment Generation			
Infrastructural programme	million person-days	133.1	112.0
Self-employment under PEP	million persons	0.53	0.78

13.54.5 The allocation for the RDI sector during the Fourth Five Year Plan was Tk. 16,500.00 million at 1989/90 prices. In the revised ADPs during the plan period, an allocation of Tk. 25,622.20 million was given to this sector against which an amount of Tk. 21,823.5 million was utilised. ADP allocations and expenditures incurred during the period are shown in Table 13.17.

Table 13.17
Revised ADP Allocations and Expenditures for Rural Development and Institutions
During Fourth Plan (at current prices)

(in million Taka)

RDI Agencies	Revised ADP Allocations	Expenditure
1. BRDB	2,845.97	2,460.00
2. BARD	133.45	75.20
3. RDA	21.78	17.60
4. Co-operatives	578.41	123.70
5. Ministry of Land	937.40	509.60
6. LGED	20,028.37	17,682.90
7. NILG	3.64	3.60
8. Ministry of Relief	112.04	108.70
9. Special Affairs Division	646.14	537.20
10. Ministry of Finance (Ag. Bank)	10.00	-
11. Ministry of Agriculture	5.00	5.00
12. Planning Division	300.00	300.00
Total	25,622.20	21,823.50

13.54.6 Performances during 1995/96 and 1996/97: All the three major programme components, i.e., production and employment programme, infrastructural development programme and irrigation related infrastructure were under implementation during 1995/96 and 1996/97. Under the production and employment programmes, employment for 0.39 million persons was created. These were mostly self-employed members of the various formal and informal groups. Under the infrastructure construction programme, some 2,856 km of metalled roads were constructed in addition to 20,800 metres of bridges and culverts. Apart from these, 163 growth centres were developed by constructing sheds, internal roads and lanes in the hats and bazars. An amount of Tk. 17,689.9 million was provided in the Revised ADPs for 1995/96 and 1996/97.

13.55 Fifth Five Year Plan (1997-2002)

13.55.1 Objectives: The following are the objectives of the Fifth Five Year Plan for the RDI Sector:

- a. reduction of poverty in the rural areas;
- b. productive employment generation in the rural areas;
- c. self-employment creation for the rural poor ;
- d. development of rural infrastructure; and
- e. development of small and landless farmers.

13.55.2 Strategies: The elements of the strategy for achievement of the above objectives will include, among others, the following:

- a. provision of skill training mostly for self-employment in non-farm sectors;
- b. formal and informal group formation and group development for co-operative activities;
- c. resource mobilisation through individual/group savings;

- d. creation of enabling environment for availing of credit facilities;
- e. social mobilisation for awareness creation on various aspects of rural life;
- f. development of small and landless farmers;
- g. development of rural infrastructure such as growth centres and roads, bridges and culverts connecting such centres;
- h. provision of small irrigation and flood control related infrastructure;
- i. preventing destitution through rural maintenance programme; and
- j. covering at least one full administrative district under any project with one or more of the programme components of productive employment, rural infrastructure and small scale irrigation and flood control infrastructure to find out the replicability.

13.56 Major Thrust

13.56.1 Facilities for self-employment: It is obvious that it will not be possible to create enough wage employment even for a significant proportion of the vast army of the rural unemployed and under-unemployed labour force. As such facilities for self-employment will be created through skill training and micro-credit, particularly in the non-farm sector under a well-conceived pro-poor programme. An employment bank will be set up in the Fifth Plan period to support self-employment. Since provision of microcredit from the public sector fund will not be sufficient to create enough employment, local resources will be mobilised through savings of the beneficiaries.

13.56.2 Facilities for Bittahen: There is a large number of landless and assetless people who are known as bittahen. They will have priority in the scheme of poverty alleviation and separate institute for the bittahen will be set up. To meet the credit needs of such people, opening separate counters in the existing banks for the bittahen may be necessary. Alternatively, separate banks for the bittahen will be established.

13.56.3 Social mobilisation and empowerment of the poor: On the top of all efforts towards reduction of poverty, social mobilisation for awareness creation on various social, economic, environmental, skill development and institution building matters and supporting local government bodies will remain in-built in the process of participatory bottom-up planning and poverty alleviation. Empowerment of the poor in identifying their needs and directly involving them in planning, designing and implementation of self and community based projects will be a mechanism for nation building activities in this context.

13.56.4 Women in development: Since women are the most disadvantaged group in the society and the victims of extreme poverty, special attention will be given to reduction of poverty among women. In appropriate cases, separate programmes for the women will be taken up.

13.56.5 Environment protection: Environmental concern is an important element in any programme of rural development. RDI programme will have elements of environment protection, environment conservation and re-generation, social mobilisation and input supply. Environment -friendly activities will remain in-built in all programmes of rural development.

13.57 Programmes

13.57.1 Poverty alleviation will be one of the major concerns of the RDI programmes during the Plan period, and conscious and deliberate attempts will be made to substantially reduce poverty, particularly of the hard-core rural poor. The programmes will include the following:

a. Production and employment programme: Under this programme various projects will be undertaken for skill training, awareness creation, human resource development and empowerment of the poor. Credits will be disbursed for undertaking income generation and for self-employment activities. There will be separate projects for rehabilitation of the landless and assetless people, particularly women. Specific projects will be undertaken for the bittaheens and the people of the special areas. Poverty alleviation programmes will be designed and suited to the need and creativity of the people and be financed with local resources as far as possible.

b. Rural infrastructure development programme: Under the rural infrastructure development programme, projects will be taken up for development of growth centres and growth centre connecting roads, bridges and culverts on the one hand and small-scale irrigation and flood control related infrastructure projects on the other. Road maintenance programmes, mostly rural roads, will be implemented through the rural destitute women and eventually they will accumulate savings to undertake income generating activities by themselves.

13.58 Projections for development of RDI in the public sector during the Fifth Plan are shown in Table 13.18.

Table 13.18
Projection for Development of RDI in Public Sector During Fifth Plan

Programme	Unit	Projection
Productive employment generation	million person	1.3
Employment under infrastructural programme	million person-days	175
Growth centre development	number	600
Feeder road category 'B'	kilometre	7,000
Rural road	kilometre	15,000
Bridges and culverts	metre	100,000
Small scale water management related infrastructure:		
- Embankment	kilometre	1,000
- Khal/canal	kilometre	4,000
- Water control structure	number	350
Maintenance of physical infrastructure	kilometre	10,000

13.59 Land Reform and Land Use

13.59.1 Control over asset, particularly access to land is a major determinant of household income in Bangladesh, particularly in the rural areas. Two-thirds of the rural people are landless or functionally so. The high degree of income inequality in the country is closely related to unequal distribution of land ownership. The average size of land holding is declining due to population pressure coupled with inheritance laws and the need for other uses of land such as human settlements and roads. Share cropping is widespread as the smaller pieces of land are not enough for subsistence.

13.59.2 The Land Reform Ordinance of 1984 has provision for the protection of tenants and sharecroppers. The basic issue is lack of enforcement of the ordinance. Farm holdings in Bangladesh are generally very small and big farms are limited in number. In this context, scope for a comprehensive redistribution of land and further reduction of land ownership ceiling is considered to be limited.

13.59.3 Against this backdrop, effective implementation of the ongoing land reform activities including Adarsha Gram, Khas Land distribution, ideal village programmes and providing rights to bargadars will get priority in the Fifth Plan period. Further, improving land records, distribution of appropriate land titles and speedy settlement of disputes on land will create opportunities for small farmers to avail of credit facilities.

13.60 Area Development Approach

13.60.1 Rural Development during the Fifth Five Year Plan will be undertaken following Area Development Approach which is commonly understood as comprehensive development or integrated multi-sectoral development. This approach conforms to the over all national sectoral development strategy. Under the Area Development Approach, programme for the total development of a particular geographical area covering development activities in various fields such as education, human resources, family planning, agriculture, water resources, infrastructure, housing, etc. will be undertaken. Projects will be drawn up by the concerned sectors and will be integrated and co-ordinated at some convenient administrative units. Considering the complexity of integration and efficiency at the operational level, one at administrative district, for example, may be considered as the point of co-ordination and integration of the projects which conform with the rural development strategy, presently being pursued under the RDI Sector.

13.60.2 Under the Area Development Approach, there will be one area development programme covering the projects of different sectors which will be co-ordinated at the district level for which appropriate mechanism will be developed as soon as the new local government structure becomes operational. The area development programme will essentially involve the local government authorities and will be co-ordinated by such authorities at the district level. The programmes of all development agencies including government, parastatals, NGOs and private organisations will be co-ordinated with a view to avoiding both duplication of efforts and unbalanced allocation of resources. The area development programme drawn for the comprehensive and multi-sectoral development of the entire geographical area of a particular district will be decomposed at the upazila level and further down to union parishad.

13.61 Financial Outlay During Fifth Plan

13.61.1 An amount of Tk.87,002.48 million has been projected for the development of RDI in the Public Sector. The programme wise breakup of the outlay is shown in Table 13.19.

Table 13.19
Public Sector Financial Outlay for Development of RDI During Fifth Plan

(in million Taka)	
Programme	Financial Outlay
Production and employment programme (PEP)	20,000.00
Infrastructural development programme (including irrigation related infrastructure)	56,000.00
Other programmes (including special programmes and action research)	11,002.48
Total	87,002.48

13.62 Given the nature of social investment, private investment for rural development and institutions will be very limited. Some investment outside the public sector will be based on savings mobilised and institutional investment by NGOs. A tentative amount of Tk. 2,000 million is likely to be invested for the development of RDI in the private sector during the

Plan period. The return against such investment is expected to be more per unit than what is projected to be in the public sector.

CHAPTER XIV

INDUSTRIES

14.1 Introduction

14.1.1 Manufacturing combines human ingenuity - science, technology and innovations with natural endowments of a nation. The fountain of the wealth of today's developed nations receives the perennial flow from trade in manufactures which lie at the back of their highly remunerative employment, high level of income and the high standard of living. This is why international trade is dominated by manufactures which accounted for around 75 per cent of the world merchandise exports of US\$ 4,880 billion in 1995. Primary products comprised the rest in which the shares of food, fuel, minerals and metals and agricultural raw materials were 9.1 per cent, 7.1 per cent, 6.3 per cent and 2.8 per cent, respectively. It is, therefore, no wonder that the demolition of the tariff wall against trade in manufactures had been at the top of the agenda of all multilateral and plurilateral trade negotiations conducted under the auspices of the General Agreement on Tariffs and Trade (GATT), the predecessor institution of the present World Trade Organisation (WTO), and that the developed countries, who are the greatest beneficiaries of trade in manufactures, have brought down the tariffs on manufactured goods traded amongst themselves to a level as low as 4 per cent only.

14.1.2 Failure of most of the developing economies, excepting the newly industrialised countries, to generate adequate purchasing power in their respective domestic market led them to look for purchasing power outside the national boundaries and pursue the export-led growth strategy. The bulk of exports from these countries, however, still comprises of primary commodities and historically, world prices of primary commodities have been volatile, unstable and least rewarding. Besides, these countries, more often than not, suffer from adverse terms of trade. As a result, trade has been neither a source of resource flow nor an 'engine of growth' for these countries. These stark realities, combined with the overwhelming weight of manufactures in the global export trade, make the success of the export-led development strategy contingent on the development of a viable manufacturing sector.

14.2 Past Industrial Development

14.2.1 Bangladesh is a late starter in the process of industrialisation. Before liberation, some simple process industries like jute, textiles and sugar mills, two pulp and paper mills, a small urea fertiliser plant, a cement factory, a 'mini' steel making plant with imbalanced downstream rolling facilities for making mild steel bars, sheets and plates, a few pharmaceutical units with capacities for formulation, bottling and packaging and several minor dockyards and light engineering workshops comprised the industrial base of the country. After liberation, within the overall objective of attaining a self-reliant economy, the First Five Year Plan (1973-78) of the country adopted an import-substitution strategy for industrialisation with emphasis on domestic production of basic needs and investment goods. However, with the unfortunate change in the government that was brought about in August 1975 a perceptible shift in the self-reliant economic goals and objectives occurred, making the country increasingly dependent on foreign aid and aid-financed imports covering all types

of commodities - food, consumer goods, consumer durables, raw materials, intermediate inputs and of course, investment goods.

14.2.2 During the last twenty five years, the nation's industrialisation efforts were channelled mainly through the public sector. A major portion of public investment was devoted to new capacity creation in chemical fertilisers and in the establishment of several basic engineering industries, while both the public and private sectors invested in textiles and clothing. Some investments were also made in balancing, modernisation and expansion of some of the existing jute and textile mills. Besides, significant promotional investments were made by the government by way of setting up a large number of industrial estates for small and medium sized industrial units as well as two export processing zones (EPZs) to provide infrastructural facilities, utilities and other services for the entrepreneurs - both foreign and local. However, most of the industrial estates remained under-utilised and the strategy for labour-intensive industrialisation as well as spatial dispersal of industries, by and large, ended in a failure. With the exception of export-oriented ready made garments industries (RMGs), which achieved a commendable growth over a relatively short span of time, the country's industrialisation efforts in other areas, particularly in producing consumer goods, RMG-linkage inputs and high value added consumer durables and producer goods, did not bear much fruit. The vast potential that exists for development and diversification of agro-based and agro-support industries remains to be tapped. Indeed, even the existing industrial units gradually lost operational viability due to lack of investments in balancing and modernisation as well as loss of protective domestic markets due to liberalisation of the trade regime at a pace which did not permit necessary adjustments and relocations. Industrial units awaiting privatisation also have landed in the same situation as uncertainty and apprehension about job losses have besieged both the management and the labour equally as a result of which they have lost interest in running these units. On the contrary, in the context of conscious policy decisions to allow progressive erosion of the public sector's role in the country's industrialisation efforts, a standstill position has been reached with respect to any significant investment by the public sector in the establishment of any new production capacity.

14.2.3 Bangladesh is a densely populated country, with a narrow natural resource base, an extremely limited per capita availability of arable land and very low purchasing power of the population. The low purchasing power of the population is responsible for the small size of the domestic market which has shrunk further, particularly in the 1990s, due to opening up of the economy with attendant liberalisation of the trade regime. Given the small size of the domestic market, Bangladesh has to pursue an export-led development strategy with emphasis on industrialisation for sustained economic growth and social development. Such a strategy holds out the potential for eventual solution of problems like acute unemployment, abject poverty, low rate of savings and investment as well as high dependence on foreign aid.

14.2.4 The country has a vast pool of easily trainable manpower resources. It also has the advantage of relatively low wage level. But its technological base is weak and it lacks dynamic entrepreneurship, managerial expertise and efficiency, work forces with requisite skills and above all, adequate investible surplus. To raise the manufactures' share from the present 9.28 per cent level to 12.70 per cent of GDP by the terminal year of the Fifth Plan obviously is a challenging task. This will not only call for the necessary enabling environment, but also require an upbeat efficiency of the private sector with ability to compete in a globalised market economy and liberalised trade regime. It is, nevertheless, achievable as has been demonstrated by a number of East and Southeast Asian countries.

14.2.5 The crucial and logical transformation of the Bangladesh economy that is needed for an accelerated pace of industrialisation, is yet to take place. Over the last quarter of a century, the economy of Bangladesh has gone through a slow and rather erratic structural transformation. It defied the classical relationship between the structural composition of an economy and its stage of development. The share of her agricultural sector, though dropped from about 58 per cent in 1972 to about 33 per cent in 1995, the share of the manufacturing sector limped from 9.0 per cent in 1973 to a mere 11.4 per cent in 1994/95. The services sector, on the other hand, jumped from 26 per cent to about 48 per cent over the same period. To bring about a visible improvement in the quality of life of the people, the pivotal role that the manufacturing sector has to play in the desired transformation of the economy, still remains to be displayed.

14.2.6 The sector's share in GDP for some selected years, including benchmark years of the past Plans, and its growth over the periods under discussion are shown in the Table 14.1.

Table 14.1
Manufacturing Sector's Share in GDP and Past Growth Rates
(at constant prices)

Year	Share in GDP (per cent)	Period	Annual Compound Growth Rate Over Period (per cent)
1972/73	9.00	1973 - 1978	7.35
1979/80	11.22	1978 - 1980	6.21
1984/85	9.86	1973 - 1980	7.02
1989/90	9.91	1980 - 1985	0.93
1994/95	11.36	1985 - 1990	4.22
1995/96	11.37	1990 - 1995	7.00
1996/97	11.08	1995/96	5.33
		1996/97	3.31

Source: BBS

14.2.7 Despite its potential for growth, the manufacturing sector in the past failed to meet expectations. In 1994/95 this sector achieved a growth rate of 8.6 per cent compared to 7.2 per cent in 1989/90. Over the period from 1990/91 to 1995/96, the manufacturing sector grew at an average annual rate of 6.3 per cent and there have been fluctuations also. The first year of the Fourth Plan registered the lowest growth rate (2.39 per cent), while the highest growth rate (9.1 per cent) was achieved during the year 1992/93. The growth rates during 1995/96 and 1996/97 were 5.3 per cent and 3.3 per cent, respectively. Among the industrial sub-sectors, ready-made garments (RMG) and pharmaceuticals recorded the highest growth performances (greater than 10 per cent), while growth rates of jute and cotton textiles declined.

14.2.8 The total investment during the period 1990/91-1994/95 stood at Tk.131,457 million, at current prices, in which the share of the private sector was 85.89 per cent, including foreign direct investment (FDI) of 10.54 per cent. Investment in the years 1995/96 and 1996/97 stood at Tk.34,919 million and Tk.34,513 million, in which the share of the private sector was 95 per cent and 97 per cent, respectively. Major portion of the investment went into fertiliser and pharmaceuticals as well as export production. Ready-made garments and knitwears jointly accounted for over 70 per cent of the total investment in the manufacturing sector. Details of year wise total investment as well as agency wise public sector expenditure in the manufacturing sector for the period under review are given in Tables 14.2 and 14.3.

Table 14.2
Investment in Manufacturing Sector¹
(at current prices)

(in million Taka)

Year	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	Total
Total Investment	23415	22699	24319	25825	35199	34919	34513	200889
Public Sector Investment	8331	3338	1240	2273	2227	1718	1082	20209
Private Sector Investment	15084	19361	23079	23552	32972	33201	33431	180680
Domestic Private Investment	12579	17927	21248	20595	19053	16346	15003	122751
Foreign Direct Investment	1568	428	894	1367	12392	15555	15506	47710
Investment in the EPZs	937	1006	937	1590	1527	1300	2922	10219
Percentage Share								
Public Sector	35.58	14.71	5.10	8.80	6.33	4.92	3.14	10.06
Private Sector	64.42	85.29	94.90	91.20	93.67	95.08	96.86	89.94
Domestic Private Sector	53.72	78.98	87.37	79.75	54.13	46.81	43.47	61.10
Foreign Direct Investment	6.70	1.88	3.68	5.29	35.20	44.55	44.93	23.75
Investment in the EPZs	4.00	4.43	3.85	6.16	4.34	3.72	8.46	5.09

Table 14.3
ADP Expenditures by Major Ministries and Parastatals During Fourth Plan Period
(1990-95), 1995/96 and 1996/97

(in million current Taka)

Sl. No.	Name of Agencies	1990/91	1991/92	1992/93	1993/94	1994/95	Total 1990-95	1995/96	1996/97
01.	Bangladesh Chemical Industries Corporation.	7,694.47 (92.36)	2,575.94 (77.15)	465.939 (0.38)	1,046.41 (46.04)	851.927 (38.22)	12,634.69 (72.89)	666.40 (38.79)	105.811 (9.78)
02.	Bangladesh Steel & Engineering Corporation	16.20 (0.19)	24.70 (0.74)	-	-	-	40.90 (0.18)	2.50 (0.15)	-
03.	Bangladesh Textile Mills Corporation.	-	-	-	35.00 (1.54)	43.58 (1.69)	78.58 (0.45)	76.50 (4.45)	60.00 (5.54)
04.	Bangladesh Jute Mills Corporation (BJMC)	57.77 (0.69)	-	-	-	-	57.77 (0.33)	4.00 (0.23)	-
05.	Bangladesh Sugar & Food Industries Corporation (BSFIC)	189.25 (2.27)	74.90 (2.24)	214.70 (17.32)	301.22 (13.25)	107.13 (4.81)	887.20 (5.08)	68.00 (3.96)	20.10 (1.86)
06.	Bangladesh Forest Industries Development Corporation (BFIDC)	-	-	-	-	-	-	-	-
07.	Bangladesh Small & Cottage Industries Corp.	178.50 (2.14)	312.80 (9.37)	217.30 (0.18)	333.80 (14.69)	349.30 (15.69)	1391.70 (8.03)	287.50 (16.73)	118.40 (10.94)
08.	Bangladesh Handloom Board.	92.50 (1.11)	37.40 (1.12)	20.00 (0.02)	10.35 (0.46)	180.40 (8.10)	340.65 (1.97)	22.15 (1.29)	35.10 (3.24)

continued to next page

¹ Private sector investment figure has been taken from GED, Planning Commission (Table- 1.8, Chapter -1). Investment in EPZs has been Collected from BEPZA. Foreign Direct Investment has been estimated to be 40% of registered FDI with Board of Investment and it is based upon a survey conducted by BOI in 1993/94. Domestic private sector investment has been derived as residuary after deducting investment in EPZ and FDI.

Table 14.3 (continued)
ADP Expenditures by Major Ministries and Parastatals During Fourth Plan Period
(1990-95), 1995/96 and 1996/97

(in million current Taka)

Sl. No.	Name of Agencies	1990/91	1991/92	1992/93	1993/94	1994/95	Total 1990-95	1995/96	1996/97
09.	Bangladesh Sericulture Board.	40.00 (0.48)	80.00 (2.40)	61.90 (0.05)	115.00 (5.06)	146.25 (6.57)	443.15 (2.56)	121.90 (7.09)	15.00 (1.39)
10.	Bangladesh Export Processing Zone Authority(BEPZA)	50.00 (0.60)	220.00 (6.59)	220.00 (17.74)	280.00 (12.32)	249.20 (11.19)	1019.20 (5.12)	134.30 (7.82)	484.03 (44.73)
11.	Bangladesh Industrial Technical Assistance Centre (BITAC)	10.00 (0.12)	0.83 (0.02)	4.67 (0.38)	44.77 (1.97)	-	60.27 (0.35)	9.20 (0.54)	-
12.	Ministry of Industry	-	-	0.015 (0.0012)	29.648 (1.30)	15.167 (0.68)	44.83 (0.26)	15.00 (0.87)	-
13.	Ministry of Textiles	1.44 (0.02)	1.78 (0.05)	3.43 (0.28)	2.70 (0.12)	8.38 (0.38)	17.73 (0.10)	6.00 (0.35)	2.30 (0.21)
14.	Department of Textiles (DOT).	-	-	-	-	64.71 (2.91)	64.71 (0.37)	57.30 (3.33)	10.00 (0.92)
15.	Ministry of Jute (MOJ).	-	-	-	-	-	-	133.7 (7.78)	145.00 (13.40)
16.	Department of Jute (DOJ).	-	-	-	-	-	-	-	26.60 (2.46)
17.	Department of Printing, Stationery, Forms and Publications	-	7.50 (0.22)	28.67 (2.31)	40.00 (1.76)	52.75 (2.37)	128.92 (0.74)	5.0 (0.29)	59.89 (5.53)
18.	Patent & Design	0.365 (.005)	1.187 (0.04)	1.60 (0.13)	0.363 (0.016)	0.450 (0.02)	3.965 (0.02)	-	-
19.	Trade Mark Registry	0.365 (0.005)	0.900 (0.03)	1.60 (0.13)	0.400 (0.02)	0.360 (0.016)	3.625 (0.02)	-	-
20.	Board of Investment	-	-	-	11.20 (0.49)	67.40 (3.03)	78.60 (0.17)	1.10 (0.06)	-
21.	Tariff Commission	-	-	-	21.46 (0.94)	25.492 (1.14)	46.96 (0.27)	16.70 (0.97)	-
22.	NPO	-	-	-	-	-	-	0.10 (0.005)	-
23.	Privatisation Board	-	-	-	0.365 (0.16)	40.173 (1.80)	40.54 (0.23)	59.00 (3.43)	-
24.	Export Promotion Bureau (EPB)	-	-	-	-	23.200 (1.04)	23.20 (0.13)	15.00 (0.87)	-
25.	Bangladesh Institute of Management (BIM)	-	-	-	-	-	-	2.00 (0.12)	-
26.	Ministry of Commerce.	-	-	-	-	0.842 (0.04)	0.84 (0.005)	7.500 (0.44)	-
27.	Dhaka Chamber of Commerce and Industry (DCCI)	-	-	-	-	-	-	5.00 (0.29)	-
28.	Micro-Industries Development Assistance and Services (MIDAS)	-	-	-	-	-	-	2.30 (0.13)	-
	Total	8,330.86 (100)	3,337.94 (100)	1,239.82 (100)	2,272.69 (100)	2,226.71 (100)	17,408.02 (100)	1,718.15 (100)	1,082.23 (100)

Note: Figures in parentheses are corresponding percentages of total annual expenditures

14.2.9 Over the same period, manufactured exports grew at an average rate of 16 per cent per annum, reflecting a significant rise in the sector's share in the country's total export earnings, from 67 per cent in 1989/90 to 84 per cent 1996/97. In terms of value, export on account of manufactures increased over the period by US\$ 2,554 million, from US\$ 1,150 million in 1989/90 to US\$ 3,704 million in 1996/97. Share of the ready-made garments and knitwear was the largest (about 67 per cent) in this increase.

14.2.10 The share of the manufacturing sector in country's total employment is 7.4 per cent only. It provides employment to about 3.63 million people (of ages 15 years and over) in which the share of the private sector is just over 95 per cent. Women folk accounts for some 37 per cent of the sector's employment. About 62 per cent of this employment is in the rural area in which the share of women is about 39 per cent. Informal sector accounts for about 52 per cent of the sector's total employment. The large, medium and small industries account for one-third of this employment while cottage industries employ one-third and the remaining one-third is in the handloom sub-sector.

14.2.11 Production of major consumer goods, however, remained low partly due to closure of a large number of medium and small manufacturing industries and partly due to the depressed demand for domestic manufactured goods in the context of liberalisation of imports. In their place, non-traditional exports such as garments and frozen food have become important sources of industrial growth. In recent years, major source of industrial growth has been textiles, with ready-made garments manufacture expanding from an insignificant level in the early 1980's to the present position of the country's leading export earner. Leather exports have also grown modestly.

14.3 Objectives and Strategies for Industrialisation

14.3.1 The government has clearly enunciated its industrialisation objectives and strategies. These are: industrial development with emphasis on optimum utilisation of indigenous endowments, promotion of employment and catalysing the growth of production and exports.

14.3.2 In the above context, the specific objective of the industries sector during the Fifth Plan will be to bring about a structural change in the economy to make it conducive to accelerated growth of overall GDP and to face boldly the challenge of a free market economy in the twenty first century. This will be brought about, within the overall context of poverty alleviation, through maximisation of its contribution to:

- a. Gross Domestic Product :** The sector will not only contribute to the growth of the total value added directly but also will facilitate the growth of overall economy indirectly through forward and backward linkages.
- b. Balance of Payments :** This will be strengthened through efficient import substitution and export orientation. The key aspect of this will be to attain international competitiveness through efficient allocation and use of resources and enhancement of total factor productivity.
- c. Strengthening of Technological Base :** This will be achieved through building of indigenous capacity in science and technology as well as enhanced access to the frontier of international technology shelf by way of adoption and adaptation. Such access to modern technology will be both an end as well as a means to industrial development during the Fifth Plan.
- d. Generation of Productive Employment and Poverty Alleviation :** Skill development will be a hallmark of the Fifth Plan in order to exploit the country's comparative advantage in the international market. At the same time, development of

self employment with particular focus on the poor and the disadvantaged especially women, will be a major thrust of the industrial development during the Fifth Plan. As such entrepreneurship development with easy access to complementary resources and inputs will receive high priority.

14.3.3 For modernisation and expansion of the sector, necessary steps will be taken to gear up production and distribution system for supplying necessary inputs to the sector. Practical steps will be taken for skill development of people engaged in various vocations. Principles of free market economy will be pursued and all assistance and encouragement will be given to the private entrepreneurs. All laws, regulations and procedures related to industries, trade and investment will be reformed and simplified. For balanced industrial growth and spatial dispersal, appropriate policies will be designed and implemented for establishing industries at District and Thana levels. For the unemployed youth, employment opportunities will be created through the establishment of labour-intensive medium, small and cottage industries. Efficiency and productivity of the parastatals will be improved by bringing about radical change in their operation and management so as to enable them to be competitive and commercially viable. While pursuing the free-trade policy, adequate measures will be taken to remedy the imbalance between the import and export trade as well as to prevent unfair trade practices. Necessary reforms of the economy will be implemented at a faster pace. Specific strategies to achieve the overall objectives of the Fifth Plan will be to:

- a. promote the private sector as the main agent for industrial development, while at the same time undertaking public investment in some strategic industries as well as in those areas where the private sector is not forthcoming; public-private joint ventures will particularly be encouraged in all areas as may be expedient for industrial growth;
- b. strengthen the enabling policies and remove all distortions to the extent possible in order to achieve efficient operation of the market and at the same time uphold the interest of the consumers;
- c. undertake massive efforts to develop efficiency culture in all walks of life particularly in industrial premises; particular attention will be given to improve the efficiency of the public sector;
- d. pursue and accelerate the process of privatisation of state-owned enterprises in an efficient manner;
- e. encourage domestic and foreign investment for overall industrial development;
- f. develop export-oriented, export-linkage and efficient import-substitution industries;
- g. promote diversification of markets as well as products; such efforts will include, but not limited to, marketing assistance to the exporters and implementation of appropriate package of incentives including flexible exchange rate;
- h. exploit the opportunities opened up by the General Agreement on Trade in Services of WTO, and to develop, with an eye to the export market, those service sectors in which Bangladesh enjoys comparative advantage;
- i. develop data base at the frontiers of international technology shelf and disseminate the same to the users in both private and public sectors; in particular, modern technologies will be required in areas such as electronics, biotechnology, cybernetics (both hard and software); R&D facilities will be developed in these and other modern technology areas. To facilitate this, research in basic science will be encouraged;
- j. develop skill, extend vocational training;
- k. develop entrepreneurship in general, particularly in rural areas through extensive training, both formal and informal and easy availability of complementary resources and inputs;

- l. undertake appropriate measures to build healthy and productive relations between employers and employees;
- m. encourage development of labour intensive small and cottage industries through acquisition and development of appropriate technology;
- n. encourage development and diversification of agro-based and agro-supportive industries;
- o. encourage development of industries based on indigenous raw materials and indigenous technology;
- p. formulate policies and strategies for balanced industrial growth in different regions of the country;
- q. put special emphasis on the growth of productivity in industries and to ensure optimum utilisation of the existing capacities;
- r. explore modalities and establish institutional arrangements for revitalising and rehabilitating sick industries through shared responsibilities and obligations of all concerned parties;
- s. strengthen quality control practices so as to ensure that the country's manufactures conform to international quality standards; and
- t. take appropriate measures for preventing environmental pollution by the industries and maintain ecological balance.

14.4 Thrust Sub-sectors

14.4.1 In keeping with the overall objectives and strategies of the industrial sector during Fifth Plan, traditional sub-sectors like textiles and clothing, jute, tea, leather and leather products, along with agro-based small and medium industries, will be given priority and the jute sector will be consolidated through privatisation, restructuring and rationalisation. In this context, given the demand condition at home and abroad, the following sub-sectors have been identified as the thrust sub-sectors for promoting actively during the Plan period:

14.4.2 Textiles and Clothing : The textiles sector, whose contributions to industrial GDP and employment are the highest and which supplies one of the basic needs of the economy will continue to be focused during the Fifth Plan. In pursuance of the implementation of the GATT-1994 and with the phasing out of the Multi-Fibre Arrangement (MFA) by the year 2005, the facilities that are being enjoyed by Bangladesh as a least developed country for export of its textile products will be phased out progressively. In the globalised trade scenario, the sub-sector will have to pursue the following objectives:

- a. To attain self-sufficiency in fabrics by ensuring availability of 17.0 metres of fabrics per capita per annum by the year 2005, to meet the requirement of RMG industry through establishing backward linkages and to ensure direct export of textile goods by expanding production of quality fabrics at competitive prices;
- b. To create enabling environment and to provide the means by which the textile industry can serve as the prime mover of industrialisation for generating employment, increasing export earnings and encouraging contribution to national income by enhancing value addition;
- c. To establish linkages among the various textile sub-sectors, both upstream and downstream, by ensuring their healthy and harmonious development, to undertake and implement various integrated and related plans and programmes for the development of spinning, weaving, knitting, hosiery, dyeing, finishing, and the export-oriented RMG industry, etc. on a priority basis and in keeping with the goals and objectives of the Fifth Plan; and

- d. To create a congenial industrial environment for attracting local and foreign investment in the expansion of local textile industry by taking all the necessary measures and to provide various incentives.

14.4.3 To remain competitive, productivity of the sector has to increase and so also the quality of products. Establishment of backward and forward RMG-linkage industries is a must. Besides, Bangladesh will switch over gradually to high value products. Adequate marketing skills will be developed so as to eliminate dependence on the middle-men. Facilities such as textile design training schools will be built. Development of fashion industry will be encouraged. Marketing assistance will be provided by the government to garments industry. Bangladesh will have to shift its emphasis from political diplomacy to economic diplomacy and all Bangladesh missions abroad will be geared up for rendering to the entrepreneurs all necessary services in connection with marketing of products and access to needed technologies.

14.4.4 Leather and Leather Products Industry : In view of its tremendous export potential, development of leather and leather products industry will be given priority. Joint ventures will be encouraged in this area. Varieties of high value added leather products can be made using locally manufactured crust and finished leather and, as long as domestic supplies remain inadequate, using finished leather imported on back-to-back basis in the same manner as fabrics for RMG industries. Appropriate measures will be taken to encourage investments in leather and leather products as well as linkage industries to support the sub-sector through supply of various accessories. To be successful, leather and leather product industry will be closely linked to the market as fashions change frequently; the industries will take measures to improve the quality of the product through upgradation of technology and skills. In this context, strengthening of the Institute of Leather Technology will be called for.

14.4.5 Computer Software Development and Data Entry Industry : Computer Software and Data Entry Industry has tremendous prospect in the international market and has the prospect of substantial employment generation. In 1992 the total world market for software and services was US\$190 billion, growing at an annual rate of over 15 per cent . The share of data entry/data processing segment in the global market was nearly 30 per cent in 1990 (about US\$ 43 billion). Bangladesh, which has one of the lowest cost of educated labour in the world has comparative advantage in the area of mid-level skill. In order to develop this industry following steps will be taken during the Fifth Plan:

- a. **Development of skilled manpower:** Some universities like BUET, Dhaka University, Shahjalal University of Science and Technology, etc. offer under-graduate and graduate programmes in Computer Science. These graduates may find gainful employment in the software industry. For increasing their numbers, intake capacity of all these institutions will be enlarged. However, for data entry/data processing industry lesser skill is necessary. In the private sector, several training institutes are providing training for data entry/data processing. There is, however, no quality control over the content and implementation procedure of such training programmes. Measures will be undertaken to extend and improve these training facilities and courses;
- b. **Marketing assistance:** In order to develop export in this area the private sector needs to be assisted with information on market. Export Promotion Bureau needs to be entrusted with the responsibility of building a data base on such market information on a priority basis. It should be assisted by the commercial section of the Bangladesh missions abroad. Overseas relation is vital in such industries. Hence, the commercial wings in these missions will have to play an active role in procuring orders for these

industries through directly approaching potential customers, organising trade shows, mobilising Bangladeshi communities abroad, etc. Formation of joint ventures with European and American companies established in the field will be encouraged;

- c. **Credit:** In order to encourage the development of this industry bank loans will be given on a priority basis;
- d. **Fiscal Measures:** Fiscal incentives will be given to encourage the development of this industry;
- e. **Monitoring:** Being an export oriented service industry, the personnel involved in its monitoring will be given extensive training on its nature and working; and
- f. **Telecommunication Facilities:** Development of telecommunication facilities is a prerequisite for development of this industry; increasing participation of private entrepreneurs will be encouraged in this area through removal of hurdles that stand on their way; policies in this area will be rationalised in order to reduce both cost and time of such services to this industry. Customs services will have to be improved and modernised to facilitate speedy development of the sector. Among the charges which need to be substantially reduced is the cost of dedicating the satellite time.

14.4.6 Electronics Industry : Electronics industry has tremendous prospect for efficient import substitution as well as exports. Through subcontracting substantial employment can be generated in this sector. An embryo of this industry already exists. Internationally some of the electronics industries, particularly those with low level of technology content, have become sunset industries in countries like Japan, Hong Kong and Singapore. During the Fifth Plan, efforts will be made to attract foreign direct investment in these areas. Trade in semiconductor is very large and it is relocating to developing countries. Feasibility of setting up such industries will be explored during the Fifth Plan.

14.4.7 Selected Agro-based Industry : Selected agro-based industries using agricultural inputs such as fish, vegetables, fruits, flowers, etc. will be developed in view of growing demand for such products in international markets. But as many of these are perishable goods, air cargo facilities at a competitive cost will have to be developed during the Fifth Plan on a priority basis. Private sector will be encouraged to expand services in this area. Besides, appropriate policies and strategies will be pursued for the establishment of more direct flights/routes to connect markets of major interest to Bangladesh which will be of great help in boosting its exports.

14.4.8 Fisheries Industry : There is a large domestic demand for fish; foreign markets are sizable and ever growing because of its proven superiority over meat proteins. Bangladesh currently exports shrimp worth US\$ 700 million each year. The fishing industry contributes about 3 per cent of the country's GDP which is also a significant foreign exchange earner. Given the large number of water bodies and excellent climatic conditions, the country has a great potential for development in fisheries industry including fish processing and canning and expansion of employment generation in this sub-sector. There is also a great potential for development of intensive and semi-intensive shrimp cultivation as well as for development of hatcheries in the country's 140 to 150 thousand hectares of coastal area.

14.4.9 Light Engineering Industries : Light engineering industries in Bangladesh produce a multitude of labour intensive goods including toys, consumer items, small tools, spare parts, and paper products for a large domestic market. Further development of these industries offers various investment opportunities.

14.4.10 Chemicals and Gas-based Industries : Bangladesh has a sizable demand for chemical products to meet local needs in industries such as food and agro-processing, pharmaceuticals, tanneries, cosmetics, paints and varnishes, printing, packaging and textile processing. At present, most chemicals are imported. There is also vast potential for gas-based down stream linkage industries and petro-chemical industries.

14.4.11 Garments Linkage Industries : To meet the challenge of time all out efforts will be made to develop garments-linkage industries and adequate promotional support will be provided in the Fifth Plan period.

14.4.12 Grameen Check and Dhaka Check : Handloom industry at present shares 61 per cent of the total cloth production of the country, meeting 36 per cent of the local demand. About 52 million metres of different types of cloth in the form of saree, lungi, bed sheet, curtain, shirting, grey cloth, etc. in intricate designs and texture are woven in handlooms. RMG-industries export a large quantity of handloom fabrics, in the form of different sorts of dresses and costumes. Different types, design and colourful match of check fabrics are used in making these dresses and costumes. Currently, Bangladesh imports about 120 million metres of check fabrics from neighbouring countries in order to meet the demand for check fabrics for the garment industries. It is expected that demand for check fabrics will exceed 300 million metres by the end of the Fifth Plan period. The same quality check fabrics can be produced in Bangladesh. Indeed, it is already being produced in the country by Grameen Uddog - a subsidiary organisation of Grameen Bank. Grameen Bank has succeeded in penetrating into the international market by exporting this item and also in generating sizable employment for the handloom weavers. At present, Bangladesh Handloom Board has given special attention for boosting up production of check fabrics. For easy identification, Bangladesh Hand Loom Board also developed Dhaka Check similar to Grameen Check. To fulfil the future demand for check fabrics about 125 thousand handlooms will be engaged exclusively for production of check fabrics generating employment opportunity for some 365 thousand people.

14.4.13 Hotel and Tourism Industries : With growing international interest in travelling through Asia, tourism has taken roots in Bangladesh. Attractive places like Sylhet's tea gardens, water-falls at Baralekha, sea-beaches of the Cox's Bazar and Kuakata provide attractive scenery and seclusion for the tourists. A glimpse of the Royal Bengal Tiger might be exciting on a trip to the Sundarbans, the largest mangrove forest in the world with unique bio-diversity. Historical relics and monuments, ancient mosques, Buddhist monasteries, Hindu temples, and other landmarks are witnesses to the country's glorious past. Most of all, in its tribal areas, Bangladesh harbours a history and culture which is still untouched by much of the changes occurring elsewhere. To cater to the increasing need of services in this sector, additional hotels and tourists resort facilities in the Cox's Bazar, Dhaka, Chittagong and elsewhere will be developed and necessary support services will be provided in terms of physical infrastructure and utility services.

14.5 Policy Issues

14.5.1 Achieving an average annual economic growth rate of about 7 per cent during the Fifth Plan period depends heavily on considerably faster growth in manufacturing, energy and services sectors. Amongst these, the share of the manufacturing sector is projected to rise from 9.28 per cent of GDP in 1996/97 to 12.70 per cent in the year 2002. Such a rise is expected to occur mainly through private sector investments. With 96 per cent of the total manufacturing sector outlay earmarked for investment by the private sector, the Fifth Plan

relies heavily on the private entrepreneurs-both local and foreign for investment in industries. Generally, the public sector will be more visible through policy and institutional support rather than investment in the industries sector through the ADPs. The public sector inputs will be provided mainly through right policies, institutional and infrastructural support, legal reforms and good governance. The public sector investment will be limited only to the BMREs of strategic and essential industries such as jute, steel, chemical, fertiliser, paper, newsprint, etc. The government does not intend to invest in new industrial capacity creation except in such areas where the private sector will not be forthcoming. Divestiture of existing industrial units will be accelerated. Private enterprises and joint ventures in Export Processing Zones will be encouraged. Special economic zones will also be set up.

14.5.2 Bangladesh enjoys Most Favoured Nation (MFN) status with the leading economies of the world. Besides, the country is a signatory to MIGA and International Centre for Settlement of Investment Disputes (ICSID). The Export Promotion Bureau (EPB) is facilitating country's exports in every possible manner. Fiscal and monetary policies have been tuned to faster growth in the manufacturing, export and services sectors. Bangladesh also enjoys GSP facilities. However, as the MFN tariffs will progressively be lowered in pursuance of the relevant WTO Agreements leading to increasing erosion in the margin of preference, the benefits out of the GSP schemes will soon become insignificant and the comparative edge of Bangladesh over others will disappear.

i. Industrial Policy

14.5.3 The policy environment surrounding the private sector started improving with the liberalisation of the industrial policy in July, 1974 and subsequent introduction of a series of promotional measures. These included virtual elimination of the investment ceiling, extended tax holidays, concessional rate of import duty on machinery, curtailing the reserved list of industries for public sector investments, introduction of a free list of industries for which no prior approval is required, enactment of a law for promotion and protection of foreign private investment, activation of the National Stock Exchange, and revival of the Investment Corporation of Bangladesh for underwriting public issues of shares and for providing bridge finance to private industrial units, etc. Perhaps, the most salutary effect had been the government decision for progressive disinvestment of the industrial units which, following Independence, had to be taken over by the government for management. During the period 1973-80, a total of 199 industrial units were disinvested by the government at a total sales price of Tk.115.8 million.

14.5.4 The industrial policy of 1982 was revised in 1986 providing further relaxation and changes in which all industries, except seven strategic industries, were opened up for private investment. No approval for investment was then required if the investors imported machinery and equipment using their own resources and/or through Secondary Exchange Market (SEM) provided imported raw-materials constituted less than 50 percent of total requirement. The public sector enterprises were intended to be converted into public limited companies in order to make up to 49 per cent of their shares available for public subscriptions and to facilitate their operation in a competitive market. They were given operational autonomy in pricing, procurement, etc. Under the Revised Industrial Policy (RIP) a large number of fiscal and other incentives were also introduced/expanded in order to promote rapid industrial development of the country. A number of import bans and quota restrictions were relaxed to promote industrial efficiency. During the Third Five Year Plan there was considerable investment in power loom and ready-made garments industry. The export of ready-made garments increased substantially.

14.5.5 The industrial policy of 1991 which was formulated in the light of promoting a competitive market economy and which was further revised in 1992 laid down basic strategies required for industrial development of the country. All industries have now been opened up for private investment, both local and foreign, except a selected few related to national security like arms and ammunition, nuclear energy, minting and security printing, mechanised extraction in the reserved forests and the railways. Under the policy, the government has been pursuing privatisation of selected public sector enterprises. A number of public sector units have already been privatised or downsized/closed down and others slated for privatisation. Main policy objectives under the Industrial Policy are to:

- a. develop industrial sector in order to increase its contribution to gross domestic product, income, resource mobilisation and employment;
- b. expand industries by putting more emphasis on development of the private sector and in this respect to make the role of the government more promotional rather than regulatory;
- c. encourage domestic and foreign investment in overall industrial development;
- d. develop export-oriented, export-linkage and efficient import-substitution industries;
- e. especially encourage the development of small and cottage industries;
- f. expedite development of the labour intensive industries through acquisition and improvement of appropriate technology;
- g. attain self-sufficiency in essential consumer goods through efficient and cost-effective production;
- h. encourage development of agro-based and agro-support industries;
- i. encourage development of industries based on indigenous raw-materials and indigenous technology;
- j. encourage balanced industrial growth in different regions of the country;
- k. encourage investment in the intermediate and basic industries;
- l. limit the role of the government generally to establishing strategic and heavy industries and to improve efficiency of the public sector;
- m. put special emphasis on the increase of productivity in industries and to ensure optimum utilisation of the existing industrial capacities;
- n. create possible opportunities for revitalising and rehabilitating sick industries;
- o. make effective arrangements for improving standards and controlling quality of products; and
- p. take appropriate measures for preventing environmental pollution and maintaining ecological balance.

ii. Fiscal and Monetary Policies for Industrialisation

14.5.6 Some important changes were made in the monetary management including interest rates to revive economic activities by increasing the flow of credit to the productive sectors of the economy including trade and industry. New interest rate bands were refixed for loans and advances by reducing floor and ceiling by different degrees effective from December 1, 1991. In order to make interest rate more market oriented and competitive, interest rate bands for all lending categories except agriculture, jute and jute goods exports, other export and small and cottage industries, were withdrawn and in these cases banks were given freedom to determine their own interest rates effective from April, 1992. In April, 1994 interest rate bands for priority sectors such as agriculture, export and small and cottage industries were fixed within 10-14 per cent, 8-10 per cent and 9-12 per cent respectively. The policy of liberalisation of interest rate, which was introduced for moving towards market oriented

competitive economy by reducing administrative control coupled with other necessary measures, will be further geared up to build up a healthy banking system.

14.5.7 Within the above overall framework, effective policy measures will be pursued to provide the entrepreneurs with the following incentives:

- a. Tax holiday, from five to fifteen years, depending on the type of industries as well as their locations such as the developed, less developed, least developed and special economic zones; the period of such tax holidays will be calculated from the month of commencement of commercial production; the eligibility of tax holiday will be determined by the National Board of Revenue and the time of commencement of commercial production will be certified by the respective sponsoring agencies;
- b. The National Board of Revenue in consultation with the Ministry of Industries will publish in the official gazette area-wise classification for the application of concessional duties and tax holidays and this will be revised from time to time to keep pace with industrial expansion;
- c. There will be no discrimination in case of duties and taxes for the same type of industries set up in the public and private sectors;
- d. Local industrial products will be protected through tariff rationalisation keeping in view the interests of the entrepreneurs and the consumers with a time-bound phasing for eventual elimination of protection;
- e. To create internal market for jute products and to discourage industries producing jute substituting and environment polluting synthetic fibres, especially polypropylene bag, necessary tariffs will be imposed on related imports; in addition, effective steps will be taken for compulsory use of jute bags for packing of foodgrains, sugar, cement, fertiliser, etc.;
- f. Duties and taxes on imports which compete with similar domestic goods will be rationalised so that the incidence of duties and taxes on imported raw materials and intermediates used to produce such goods remain at a level below that on the finished imports;
- g. Energy price equalisation measures, as deemed appropriate, will be put in place for those least developed areas where the price of fuel oil in BTU terms will be higher than the ruling natural gas prices, as long as gas can not be made available in those areas;
- h. In cases where credits/loans obtained from foreign institutions or government for private industrial investments are relented to commercial banks/DFIs through the government, the following conditions will be applicable:
 - i. The government will relend the above mentioned credits/loans through commercial banks/DFIs; the concerned banks/DFIs will disburse the credits/loans to the entrepreneurs with applicable service charge at relending rates as determined by the government; and
 - ii. The entrepreneurs shall undertake full responsibility for repayment of the loans/credits and the concerned banks/DFIs will provide guarantee to the government for repayment of the loans/credits. The concerned banks/DFIs will, however, be entitled to claim collateral from the entrepreneurs;
- i. Special incentives will be provided to encourage non-resident Bangladeshis for investment in industries. In case of their investment in Bangladesh they will enjoy facilities similar to those given to the foreign investors. They will be able to buy any newly issued shares/debentures of Bangladeshi companies. Moreover, they will be able to maintain foreign currency deposit in the NFCD account;

- j. Provision will be made for accelerated depreciation allowance, in lieu of tax holiday, if entrepreneurs so opt for; and
- k. Special financial incentives for small and cottage industries, particularly those located in the backward areas, will be provided.

iii. Sick Industries

14.5.8 A large number of industries, over years, have turned into sick ones. The main reasons for their sickness may be enumerated in terms of :

- a. depreciation of Taka in relation to dollar or yen or pound in which loan capital was obtained for setting up the relevant industries; this resulted in sizable increase in taka-burden of the repayable loan capital;
- b. technological obsolescence of the process or the product;
- c. withdrawal or lowering of protective tariff wall;
- d. management inefficiency;
- e. inadequate working capital support by the banking system; and
- f. pilferages by the sponsors, in collusion with the personnel of the lending bank or financial institution.

14.5.9 In the Fifth Plan period concrete steps will be afoot to remove the relevant causes of sickness. Ways and means will be found out to draw up realistic schemes for getting out of sickness through joint effort of owners, management, labour and the funding agencies, i.e. all the stakeholders.

iv. Some Specific Promotional Measures

14.5.10 In recent years, considerable reforms and positive changes have been brought about to promote the manufacturing, trade and services sectors. Tariff rates have been considerably lowered and rationalised generally in line with the trade liberalisation approach pursued by the government. The Board of Investment (BOI) is playing a positive role in facilitating private investment with focus on foreign direct investment (FDI). Some of the fiscal and other specific incentives that the government is offering to attract private investments, in general, and foreign direct investments, in particular, include but not limited to the following:

- a. Cent per cent ownership of enterprises by expatriates;
- b. Generous tax holiday for 5 to 7 years, depending on the industrial subsectors, and 10 years for all types of units established in the export processing zones; tax holiday for power generation plant will be 15 years;
- c. No import duty on capital machinery for 100 per cent export-oriented industries; for other industries, import duty on machinery and spares will be levied at the rate of 7.5 per cent ad valorem only;
- d. Facilities for easy repatriation of profits, invested capital, royalties, technical fees etc. for foreign investors;
- e. Exemption of taxes on wages/salaries of expatriates working in industries as well as on royalties and technical fees;
- f. Bilateral arrangements with different countries concerned for avoiding double taxation;
- g. Granting of citizenship to foreign investors who will invest in Bangladesh at least US\$ 500,000 or to those expatriates who will deposit at least US\$ 1 million in a non-repatriable account with a recognised financial institution, and granting of permanent residency to those foreign nationals who will invest at least US\$ 100,000 in Bangladesh;

- h. Issuance of multiple-entry visas as well as work permits to foreign nationals without any discrimination;
- i. Enactment of the Private EPZ Act under which the private sector will be allowed to set up EPZs; and
- j. Establishment of a Permanent Law Commission to make the administrative-legal system more responsive to the needs of the civil society, in general, and those of the entrepreneurs, in particular.

v. Trade Policy

14.5.11 Tariff Reductions : In the last decade, tariff rates have been lowered significantly. The average tariff has come down to about 22 per cent of the annual import value. While lowering the averages, attention was given to keep the rate of customs on raw materials and capital goods lowest, on intermediate goods in-between and on finished goods consumed by the affluent highest. The aim has been to make industrial production competitive and bereft anti-export bias.

14.5.12 Elimination of Non-tariff Barriers (NTBs): Like tariff rationalisation, substantive progress has been made in eliminating or reducing quantitative restrictions (QRs) to points where only a small number of items remain subjected to NTBs at present primarily on grounds of security, health and religion. Besides, the current Import Policy Order (IPO) covering the period 1995-97, brings about a greater transparency by restoring two separate lists - one for the banned items and the other for the regulated items. Non-tariff barriers to imports have been significantly eased also through the abolition of the need for maintaining import passbooks for industrial importers, except for regulated imports.

14.5.13 Tariff reductions along with overall improvement in other policy areas carried out so far have played a major role in liberalising and boosting imports. However, the surge in imports resulting from liberalisation of the trade regime has affected adversely some domestic industries.

vi. Supportive Institutions and Special Measures : In the Fifth Plan period institutional development will be pressed in for giving support to the private enterprise, specially for setting up and operating industries. The main emphasis will be on (i) improvement of development management (ii) creation and sustenance of private sector development and (iii) improvement of key public social and infrastructure services. These objectives will be achieved through reorientation and strengthening of the following major institutions and organisations:

14.5.14 a. EPZs and Special Economic Zones: At present, 73 industrial units in Chittagong EPZ and 23 industrial units in Dhaka EPZ are operational. Besides, 34 industrial units in Chittagong EPZ and 46 industrial units in Dhaka EPZ are under implementation. Total investment in the operational units has figured at US\$ 236.56 million with a total employment of over 46,000 persons. In order to accelerate economic development and employment generation during the Fifth Plan period, Bangladesh Export Processing Zone Authority envisages establishing as many as three more EPZs in various parts of the country.

14.5.15 The determinants and directions of international investment have been changing rapidly in the recent times. Because of new candidates like the East European countries and the CIS (Commonwealth of Independent States that emerged out of the erstwhile USSR), the share of both official development assistance and foreign direct investment to developing countries has been on the wane. In view of changed circumstances, EPZs, encompassing necessary infrastructural facilities, utilities and other support services, can be used as conduits to attract foreign direct investments. At a time when industries are being re-located to low

cost production areas, Bangladesh with its hard working, intelligent, and cheap labour force, should not miss the opportunity of making the best use of its EPZs to attract foreign direct investments. In order to attract foreign investment, besides development of infrastructure and support services, such as warehouses, communication network, gas and water supply, electricity, telephone and modern electronic links, etc. the government will also continue to provide the following incentives:

- a. income tax exemption for ten years and proportional income tax rebate between 30 and 100 per cent on export earning after this period;
- b. duty free import of raw-materials, machinery, construction materials and other materials used in manufacturing process;
- c. income tax exemption on salaries for foreign executives and technicians for three years;
- d. tax exemption on interest on foreign loans;
- e. tax exemption on royalties, technical know-how and technical assistance fees;
- f. tax exemption on the profits on account of transfer of shares by foreign companies;
- g. permitting export linkage inputs to be imported through back-to-back L/Cs by recognised export-oriented/export-linkage industries which will be provided with necessary bonded warehouse facilities, even if they are located outside the EPZ areas; and
- h. offshore banking facilities.

14.5.16 b. Board of Investment (BOI) : In order to boost up and promote private investment during the Fifth Plan, the Board of Investment will continue to perform its following mandated functions:

- a. promotion of investment;
- b. providing facilities for capital investment and rapid industrialisation;
- c. registration of industrial projects, foreign loan agreements, royalty, technical know-how and technical assistance agreement wherever required;
- d. providing assistance to provide infrastructural facilities for industries;
- e. issuing work permits to expatriate personnel working in the private sector industrial enterprises;
- f. providing import facilities to industrial units in the private sector;
- g. approval of the payment of royalty, technical know-how and technical assistance fee to foreign nationals/organisations beyond the prescribed limits; and
- h. recommendations for acquisition and allotment of land in the industrial areas/estates for industrial purpose.

14.5.17 The government has recently embarked upon a policy initiative for private participation in areas of infrastructure development and provision of utility services. Already a few economic sectors such as gas exploration and exploitation, power generation and telecommunication have been opened up for local and foreign private investment. Some projects in the areas of ports and shipping as well as roads and highways have already been identified by the concerned ministries/agencies for implementation by the private sector. In the Plan period, public sector areas of operation will be progressively reduced and private investors will be induced to take up the place.

14.5.18 One key element for the success of export-led growth is the availability of abundant skilled manpower. Skill development at all levels, therefore, will be given top priority in the Plan period. Environment will be created to attract more private entrepreneurs in the field of

training, research and development. In order to boost-up the private sector, the following additional measures will be taken:

- a. higher level of investment will be encouraged in manufacturing, infrastructure and service industries by the private sector;
- b. the existing list of reserved sectors will be reviewed to further widen the areas for private sector investment; and
- c. the pace of privatisation or denationalisation process will be accelerated.

14.5.19 c. Privatisation Board : The Privatisation Board was established by a resolution of the government in March, 1993. It is entrusted with the overall responsibilities of privatising state-owned enterprises (SOE) identified for privatisation. Ministries having state-owned enterprises under their control have set up privatisation cells for assisting the Privatisation Board in identifying, preparing, processing, implementing and monitoring SOEs for privatisation. The process of privatisation till the end of 1996 was not very satisfactory. During the Fifth Plan, the Privatisation Board will be reinvigorated to hasten the process of privatisation of industrial, commercial and state owned enterprises. With this end in view the Privatisation Board will take-up the following measures to:

- a. develop selection criteria, prepare list of enterprise for sale/transfer, and subsequently implement or arrange for the transfer of such enterprises to the private sector;
- b. determine the priority and sequencing of such privatisation, including a detailed work plan and time table for the various enterprises proposed to be transferred;
- c. identify the optimal methods such as public offering, private placement, sale of assets, management contracts, leasing or management/employee buy outs by which the process of privatisation will be implemented in particular cases;
- d. co-ordinate among and recommend to the Ministry of Finance, Ministry of Jute, Ministry of Textiles and other relevant ministries and agencies steps which may be necessary for the successful privatisation of the enterprises, such as revaluation of the enterprises, restructuring of debt in accordance with sound financial principle, retrenchment of redundant workers, closure of obsolete facilities of the enterprises;
- e. formulate policies for and advise the government with regard to private sector development, investment and participation in previously reserved sectors such as telecommunications, energy and power etc.;
- f. organise public information campaign about the merits and benefits of privatisation; and
- g. undertake any other activities connected with privatisation.

14.5.20 With a view to attracting private buyers, capital restructuring has been carried out in several manufacturing units like jute mills under the Bangladesh Jute Mills Corporation. Overdue loans of both private and government sector jute mills have been restructured through waiving one-third and rescheduling the remaining two-third. Around 39,000 workers were released from the jute sector between June 1990 and June 1995 under the normal 'severance benefit scheme'. Four jute mills have been closed down and one mill has been downsized. The Bangladesh Jute Corporation which was previously dealing in trade of raw jute was wound up, but its assets are yet to be disposed off. Non performing loans of the Nationalised Commercial Banks (NCB), due to public sector manufacturing corporations like the Bangladesh Textile Mills Corporation (BTMC), the Bangladesh Jute Mills Corporation (BJMC) etc. have been settled and process is under way for settling overdue loans of other public sector manufacturing units. Collection of debt service liabilities (DSL) and settlement of arrear dues among corporations have also been strengthened. Sale of 21 public manufacturing sector units have so far been finalised. The process has been stalled due to

non-payment of instalments by the buyers. The manpower of public enterprises remaining with the government is being rationalised and their overhead expenses curtailed with the objective of making these more efficient and dynamic.

14.5.21 With the exception of a few intermittent years, the jute industry has been passing through a critical time since independence by incurring huge losses due to manifold reasons-internal and external - which warrant some positive actions for restoration of its commercial viability. In order to address the deteriorating situation of jute sub-sector, the government has taken a number of reform measures under a programme implemented with the assistance of the World Bank. The main features of the programme are down-sizing of industry, rationalisation of employment, restructuring of past debt, loss financing for jute goods export, privatisation of the jute industry, reforming wage policy, elimination of government intervention in the industry, training of workers and managers in retained mills, social safety net programmes, etc.

14.5.22 The ultimate objective of jute mills privatisation programme is to maintain export of Bangladesh jute goods at the minimum level of 450 thousand tons per year. Towards this end, the programme aims at bringing down the public sector loomage capacity to 4,000 and raising that of the private sector to around 16,000 so that the sub-sector becomes viable, efficient and competitive. Under the programme, 23 public sector jute mills, out of 31, have already been enlisted for privatisation. The Privatisation Board almost completed evaluation of the asset values of these mills. It may be mentioned that the private sector jute mills have failed to operate their existing capacity; about two-third of its loomage capacity has remained in operation during the last four years resulting in the short fall of targeted jute goods production in and export from Bangladesh. During the Fifth Plan, attempts for privatisation of public sector jute mills will continue and privatisation programme will be followed vigorously.

14.5.23 Privatisation and private sector development have been very difficult till the end of 1996. During the 1993-96, the Privatisation Board managed to privatise only 12 industrial units. But due to restructuring of the Privatisation Board, the process of privatisation has gained momentum. The government is fully committed to privatisation and by the terminal year of the Fifth Plan, the process of privatisation will be completed. It may be mentioned here that the Privatisation Board has so far identified 217 SOEs for privatisation covering nearly all the economic sectors, out of which a total of 113 SOEs were taken up for privatisation until June 1998. Besides, the Privatisation Board is continually reviewing the existing policies and strategies for privatisation and recommending appropriate policy reforms for approval of the Cabinet Sub-committee on Economic Affairs. New strategies are also being formulated by the Board for efficient and effective implementation of the privatisation programme.

14.5.24 In accordance with the privatisation policy of the government, 24 textile mills under BTMC having 182,168 spindles and 681 looms are to be privatised. Out of these, 6 mills were privatised and handed over to the private owners, and remaining 18 mills are in the process of privatisation by the Privatisation Board/Ministry of Textiles.

14.5.25 d. Chamber of Commerce and Industries : Under the present policy of private sector led export-oriented growth, the responsibility of the private sector has increased tremendously. Private Sector is now considered to be the pivotal economic player. During the Fifth Plan the institutional capability of the Federation of Bangladesh Chambers of Commerce and Industry (FBCCI) and its member organisations will be developed and strengthened so that they can lead the private sector to perform its role so as to attain higher

growth target. To prevent unfair trade practices, in particular, circumvention of domestic and foreign laws, rules and regulations, these bodies will be encouraged to put in place appropriate code of conduct for their members to observe. With this end in view necessary promotional and support services will be provided to FBCCI and other chambers to improve their institutional capability so that they can discharge their functions for promotion of trade, investment and industry.

14.5.26 e. Export Promotion Bureau : In the wake of the establishment of the World Trade Organisation to administer GATT 1994, GATS (General Agreement on Trade in Services) and TRIPS (Trade Related Aspects of Intellectual Property Rights) under an integrated Dispute Settlement Mechanism, the Bangladesh Export Promotion Bureau (EPB) will have to play a dynamic role to achieve the following objectives: (i) to identify obligations of the government to the business and industrial community of the country, to customers abroad as well as under contracts, agreements, arrangements, conventions, etc. of WTO and other relevant international/regional organisations and take all necessary steps towards meeting these obligations; (ii) to remove existing regulatory constraints; (iii) to provide policy support comparable with those of other competing countries; (iv) to provide improved services for export promotion activities; (v) to provide access to supportive infrastructure services; (vi) to improve entrepreneurial and managerial capabilities through human resources development and (vii) to implement export development programme to help expand and diversify the range of exportable products. Towards the fulfilment of the above objectives, EPB will be required to be revamped in conjunction with effective private sector co-operation and collaboration, including establishment of a joint institute of foreign trade involving representatives of both public and private sectors.

14.5.27 f. Bangladesh Tariff Commission (BTC) : The Tariff Commission will carry out in-depth studies and formulate policies for further tariff rationalisation, liberalisation of the import regime and evolving an incentive structure for strengthening the domestic production and export base. It will review, on a continuing basis, the tariffs on imported inputs - raw materials and intermediate inputs - as well as on capital goods. While rationalising the tariff structure, adequate attention will be given to ensure that inputs for any domestic product are not subjected to rates of duties and taxes higher than those on competing finished imports and that the domestic industries do not suffer loss because of dumping on the one hand and denial of access to foreign market on the other. The BTC will establish effective co-ordination with the National Board of Revenue (NBR), the Bangladesh Bureau of Statistics (BBS), the Bangladesh Bank (BB), the Ministry of Planning/Planning Commission and the Ministry of Commerce for establishment of a rational and dynamic tariff structure consistent with existing government policy of pursuing free market economy. For discharging its functions more effectively, BTC will build up its capacity further through necessary strengthening and upgradation as well as human resources development.

14.5.28 g. Bangladesh Standard Testing Institute : Standardisation is the gateway to trade and industrialisation. A well conceived standardisation programme lays the foundation for growth of domestic production, protection of consumer interest through ensuring requisite product quality and progressive assimilation of imported technology through adoption and adaptation. Standardisation of products as well as of inputs minimises wastage of resources and ensures compatibility of manufacturing processes and practices. In view of these factors, during the Fifth Plan period, the performance of the Bangladesh Standard Testing Institute will be reviewed and effective measures will be introduced to enhance its functional capability through necessary expansion and modernisation. Some vital components of

modernising the Institute will be strengthening its methodology, quality control and testing sections and induction of sufficient number of quality professionals into it.

14.5.29 h. Bangladesh Institute of Management : In the Fifth Plan period, BIM will conduct research on management development and will impart training on socio-economic and other functional areas of management. The main objectives of the institute will be to : (i) upgrade the existing centre to a self-sustained higher institute of training , research and learning, (ii) train and develop managers at all levels of the economy, (iii) assist, develop and maintain higher productivity in business and industry through adoption of technological and engineering innovation and services, (iv) give consultancy services for solving management and related problems faced by various sectors of the economy, and (v) carry out research in different fields of management, economics and business. Activities and courses will be designed and implemented to support private sector industrial and business units.

14.5.30 i. Bangladesh Industrial Technical Assistance Centre (BITAC) : The Bangladesh Industrial and Technical Assistance Centre (BITAC) has been providing technical and advisory services to the entrepreneurs. Presently BITAC Dhaka, Chittagong, Chandpur and Khulna are in operation. During the Fifth Plan the performance of existing centres will be duly evaluated and new centres will be established keeping in view the needs of the industrial areas. BITAC will assist the private sector entrepreneurs, particularly the small entrepreneurs, to solve their technical problems as well as in adopting/adapting new technologies in their production practices.

14.5.31 j. National Productivity Organisation (NPO) : The National Productivity Organisation (NPO) was established in 1989 under the Ministry of Industries. The institutional capability of this organisation will be further developed to create productivity consciousness and awareness to the people for launching productivity as a national objective to be pursued by a national movement in the country, undertake programme for human resource development for productivity improvement, build productivity infrastructure and convert industrial enterprises into an efficient and profitable organisation, work as a catalyst to promote plant-level productivity through consultancy services, conduct survey, study and research work on productivity, and assist the government in formulating productivity policy.

14.5.32 One of the major issues in the industrialisation of a country is to use trade and industrial policies in a co-ordinated manner so as to accelerate the pace of industrialisation. This was done in Japan and the Newly Industrialised Countries. For this purpose, a Trade and Industrial Policy Co-ordination Council will be set up during the Fifth Plan period.

14.5.33 Other General Measures : Other major institutional supports to the growth of private enterprises and industrialisation by the private sector will have to come through reforms in under-performing public administration, backlogged judiciary, costly banking system and also from reduction in transaction costs in getting services from the public utilities. These are monumental works and will be undertaken for completion with determination. As a general principle the government will support institution of the civil society, and rule of law and the private sector to help build constituencies that will in turn support accountable, responsible and responsive and performing public institution. Of the public utilities, power will be the major determinant of industrial investment. Concrete programmes in both private and public sectors have been drawn up to meet this need.

14.6 Development Programmes and Targets

14.6.1 Textiles and Clothing Sub-sector : Domestic supply of fabrics from the existing capacity was 1,129 million metres in 1995/96, including 200 million metres for the RMG

industry. Corresponding estimates for 1996/97 are 1,163 and 210 million metres respectively, while the supply from the existing mills in the terminal year (2001/2002) of the Fifth Plan is projected at 1,348 million metres, including 268 million metres for the RMG industries. On the other hand, the total demand for fabrics in the year 2001/2002 is projected to be 5,265 million metres, including 3,228 million metres for export. Consequently, the total demand-supply gap of fabrics will increase from 2,633 million metres in 1996/97 to 3,917 million metres in the year 2001/2002, out of which 2,960 million metres will be on account of RMG industries, unless more fabric manufacturing capacities are established, in the mean time, as backward linkage industries. The actual and estimated/projected demand for and supply of fabrics for the local and export market for the years 1995/96, 1996/97 and 2001/2002 and the corresponding supply-demand gaps are shown in Table 14.4.

Table 14.4
Demand-Supply Gap of Fabrics : 1997-2002

(in million metres)

Sl. No.	Fabrics	Actual 1995/96	Benchmark (Estimated) 1996/97	2001/ 2002 (Projected)
i.	Demand for Fabrics	3,520	3,796	5,265
	a. For domestic consumption	1,520	1,596	2,037
	b. For export (for RMG and other forms of export)	2,000	2,200	3,228
ii.	Supply of Fabrics From Existing Facilities	1,129	1,163	1,348
	a. For domestic consumption	929	953	1,080
	b. For export	200	210	268
iii.	Demand-Supply Gap of Fabrics	2,391	2,633	3,917
	a. On account of domestic consumption	591	643	957
	b. On account of export	1,800	1,990	2,960

14.6.2 The excess demand for yarn over the local production in 1995/96 was 390 million kg. which is expected to increase to 639 million kg. in 2001/2002. About 67 per cent of this total demand will be for cotton yarn, while the rest 33 per cent will be on account of yarn from man-made fibres. The projected demand for yarn by 2001/2002 and the demand-supply gap of all types of yarn for the same years are given in Table 14.5.

Table 14.5
Demand-Supply Gap of Yarn: 1996-2002

(in million kg.)

Particulars	1995/96 Actual	1996/97 Estimated	2001/2002 Projected
Demand of yarn	503	542	752
Production of yarn	113	113	113
Demand-Supply Gap	390	429	639

14.6.3 The demand-supply gaps of raw cotton and man-made fibres were 369 million kg. and 169 million kg. respectively in 1995/96 which are projected to reach 555 million kg. and 254 million kg. respectively by 2001/2002 assuming wastage for raw cotton at the rate of 10 per cent and for man-made fibres at the rate of 3 per cent. The existing and projected requirement, domestic production, and demand gaps of raw cotton and man-made fibres are shown in Table-14.6.

Table 14.6
Demand-Supply Gap of Raw Cotton and Man-made Fibres : 1996-2002

Items of Raw Materials	1995/96	1996/97 (Benchmark)	2001/2002 (Projected)
a. Raw-Cotton			
Demand	374	403	560
Production	5	5	5
Demand Gap	369	398	555
b. Man-made fibres			
Demand	171	184	256
Production	2	2	2
Demand Gap	169	182	254

14.6.4 With a view to progressively increasing domestic production of yarn and cloth the Fifth Plan envisages to overcome the shortage of manpower through human resource development, creation of an investment friendly environment, reforming the textile sector through fine tuning of policy objectives, creation of new capacity in spinning and weaving and BMRE of un-economic units in the private sector and some selected public sector mills. The private sector will be at the cutting edge of investment and technological advancement keeping in view the global and domestic opportunities. The following strategies will be pursued for the overall development of the textiles and clothing sub-sector:

- a. New capacity will be created to cater to the needs of the export-oriented RMG industries as well as the domestic markets. To this end market response will determine the nature of investment to allow horizontal and vertical expansion. Investment fund will be sought from domestic banking sources, joint-ventures, foreign direct investment and relocation of units by foreign entrepreneurs either independently or through joint venture arrangement with local sponsors;
- b. BMRE of the old and uneconomic existing units in the private sector and in selected cases in the public sector will be undertaken to ensure their financial and commercial viability through increased productivity;
- c. The existing specialised textile mills and power looms will be organised into groups on area basis and around 200 looms in each area will be taken as a package for intra and inter-unit balancing;
- d. Till adequate domestic supply capacity is created, grey fabrics will be allowed to be imported under extended bonded warehousing facilities for dyeing and finishing locally; and
- e. Tariffs on all imported inputs for the textiles and clothing subsector will be rationalised on a continuing basis; raw cotton and synthetic chips/fibre will be treated at par while levying duties and taxes on them.

14.6.5 Handlooms : The growth of the traditional sector comprising handlooms and sericulture will promote rural employment, import-substitution and export industries. The handloom industry plays an important role in the economy of Bangladesh. Next to agriculture, it is the second largest source of rural employment and income. About 5 million people are directly or indirectly engaged in this industry. The Handloom Census 1990 recorded 1,027,407 weavers in the country and 501,834 handlooms out of which 317,026 were operable. Handlooms produce some 757 million yards of cloth. Monthly demand of yarn for handloom is 12.7 million kg. Fixed capital and credit demand per loom was Tk.10,008 and Tk.8,904, respectively. The Handloom Board has undertaken different programmes/projects for implementation in order to improve the handloom industry to a satisfactory level in

producing quality products. To address the problems of the handloom industry, well identified strategies will be undertaken during the Fifth Plan period.

14.6.6 The strategies for development of handloom sub-sector will include:

- a. strengthening of the Bangladesh Handloom Board (BHB) to perform promotional activities for boosting up production at competitive prices;
- b. revitalisation of idle looms and linking up demand sources through organising the supply sources of handloom products;
- c. improvement of loom technology and changing of traditional handlooms into power looms in phases;
- d. activating the institutional credit sources for financing the working capital requirements of the handloom weavers and mobilising banking institutions to meet their credit needs as well as to do profitable banking business;
- e. ensuring availability of yarn, dyes and chemicals at competitive prices to the handloom weavers and to make appropriate arrangements for marketing their products locally;
- f. establishment of export-linkages through more concerted efforts to market handloom products abroad and also to feed the export-oriented RMG industry by encouraging non-traditional product base to produce handloom woven shirting, suiting and furnishing fabrics of upgraded quality;
- g. improvement of technology of handloom through research and adaptation;
- h. reaping the productive potential of handloom weavers through re-organisation of co-operative societies as well as through development of skill and improvement of designs; and
- i. promotion of export of Grameen Check and Dhaka Check to overseas markets.

14.6.7 Sericulture: Sericulture is an important sector which can play an important role in generating employment and alleviation of poverty. About 8-9 hundred thousand families are engaged in this occupation directly or indirectly. It is not a primary occupation in Bangladesh. It is more or less a subsidiary occupation providing part time jobs for women at family level. This sub-sector is labour intensive and its value addition is high. But it is lagging behind due to some problems, such as scarcity of disease free layings, lack of capital or loan, traditional technology of rearing and reeling, low quality of cocoons, poor marketing facilities, shortage of trained and skilled manpower and slow expansion of mulberry cultivation. As sericulture farmers are unskilled and they do not have appropriate rearing house, about 25 per cent to 30 per cent disease-free layings and cocoons are damaged in the rearing process. This in turn makes sericulture farming uneconomic. Farmers lose their interest and leave the occupation. There is a strong need for increasing the number of skilled *bosnis* (small sericulture farmer) and skilled reelers. Therefore, the Fifth Plan envisages to set up chaki rearing-cum-minifiliature centres where intensive training will be imparted for development of skilled *bosnis* and reelers.

14.6.8 The strategies for development of the sericulture sector will include:

- a. restructuring and strengthening of sericulture activities to perform research and provide extension services, supply disease free layings, disseminate high yielding variety of mulberry cultivation and silk worm rearing technology and help increase of income of silk farmers through qualitative and quantitative improvement of products;
- b. encouragement of NGOs for greater participation in different stages of production and marketing activities;

- c. ensuring access of *bosnis* (small sericulture farmers) to various inputs and facilities conducive to production of quality cocoons through adopting appropriate policy measures;
- d. extension of mulberry plantation, production of cocoons, and local marketing of silk products of *bosnis* and large farmers by a combination of efforts by entities involved in sericulture sub-sector;
- e. development of export-linkage to market sericulture products abroad and to feed the export-oriented RMG industry;
- f. improvement of technology in the silk sector and design of silk products; and
- g. setting-up *chaki* rearing cum minifiliature centres where intensive training will be given for development of skilled *bosnis* and reelers.

14.6.9 To overcome the problems of this sub-sector the Fifth Plan envisages to undertake the following programmes to promote:

- a. expansion of mulberry plantation in all possible places;
- b. expansion of extension services;
- c. production of quality cocoon;
- d. new reeling technology for improvement of quality silk yarn;
- e. marketing and credit;
- f. establishment of *chaki* rearing and minifiliature centre (CRC) under the zonal or regional offices of Bangladesh Sericulture Board (BSB); and
- g. strengthening Bangladesh Sericulture Research and Training Institute (BSRTI) to enhance the skill of manpower engaged in sericulture farming and silk reeling.

14.6.10 In order to bring about sustainable development of the silk sector, the Fifth Plan seeks to undertake a long term multi-faceted programme for introducing improved technology through strengthening institutional arrangement and policy improvements. This programme envisages establishment of a non-profit private sector institution- Bangladesh Silk Foundation. It will be established to provide necessary support and training activities in silk sector as well as to co-ordinate the efforts and initiatives of the NGOs and private entrepreneurs. The main objective of Bangladesh Silk Foundation will be to assist in increasing the income of small scale silk producers, most of whom are poor women, through introducing improved technology and to develop institutional and policy support for sustainable development of silk and sericulture sub-sector. During the Plan period Bangladesh Silk Foundation will undertake programmes to (a) enhance productivity of silk worm through dissemination of improved technology and undertaking adaptive research through BSRTI, (b) develop Germ Plasm Maintenance Centre, (c) improve management of grainages, (d) disseminate silk worm rearing and reeling technologies to the farmers, NGOs, rearers and reelers, and (e) undertake product development, design improvement and market promotion of silk yarn and fabrics. These programmes envisage to enhance the volume of production of silk yarn from the present level of 29 tons in 1996-97 to 181 tons by 2002 and to raise silk farmers' income and create employment opportunities. Besides, appropriate steps will be taken towards rationalisation of tariff rate on the imported silk yarn to enable local production stand the competition of imported silk yarn.

14.6.11 Other strategies for overall development of the textile sub-sector will be as under:

- a. For development of human resources for the textile sector, the existing training institutions under the Ministry of Textiles (MOT), Department of Textiles (DOT), Bangladesh Handloom Board (BHB) and Bangladesh Sericulture Board (BSB) will be strengthened and some new training facilities will be created- to stay with time, additional trade courses will be designed and offered to the trainees;
- b. A central testing and quality control laboratory will be established in the public sector to serve both the public and private sector units;
- c. The facilities being created in the National Institute of Textile Training Research and Design (NITTRAD) will be utilised for product testing and adoption of market sensitive design enabling sophisticated marketing and merchandising high value added garments in the process of transforming fashion business into an economically viable proposition;
- d. Dependence on imported machinery and spares will be reduced through transfer, adoption and adaptation of technology and development of cost-effective indigenous technology;
- e. Currently women's participation in the export-oriented RMG industry of Bangladesh is more than 85 percent of total employment; but in other modern textile sub-sectors, it is very negligible compared to 50-60 per cent in developed countries; keeping in view the national objective of poverty alleviation of the socially disadvantaged groups particularly distressed women, adequate measures will be taken for greater participation of women labour force in the modern textile sector.

14.6.12 Projected Productions: The projected production of fabrics has been estimated at 3,651 million metres out of which fabrics for domestic consumption will be 2,037 million metres. If the projected production is achieved, per capita consumption of cloth will be 15.37 metres in 2001/2002. The estimated production for yarn and fabrics during the Fifth Plan period is shown in Table 14.7.

Table 14.7
Projected Production of Yarn and Fabrics 1997-2002

Textile Products	Benchmark (estimated) 1996/97	Projections 2001/2002
Yarn production ¹ (million kg.)	113	522
Fabric for domestic consumption (million metres)	953	2037
Fabric for RMG production	210	1614
Total fabrics ² production (million metres)	1163	3651
Population (million)	123.8	132.50
Per capita demand for fabrics (metres)	12.9 ³	15.37

Notes :

¹ Of total yarn requirement for projected production of fabrics, 100 per cent will be produced by 2001-2002.

² Cent per cent of domestic fabric requirement and 50 per cent RMG fabric requirement will be domestically met by 2001/2002.

³ Demand for domestic market in 1996/97 is estimated at 1596 million metres.

14.6.13 Fabrics from the modern sub-sector (which includes composite textile mills, specialised textiles and power looms and knitting and hosiery units), handloom, sericulture and others (tents, soft luggages, gloves, socks, tarpaulins, inter-linings, under-garments, umbrella-cloth etc.) is projected to increase from 564 million metres in 1996/97 to 2953 million metres in 2001/2002. The benchmark production and projected production in these sub-sectors during the Fifth Plan period are given in Table 14.8.

Table 14.8
Projected Production of Fabrics During 1997-2002

Textile Sub-sectors	(in million metres)	
	Benchmark (estimated) 1996/97	Projected Production (2001/2002)
Modern Sector	564	2,953
Handloom	595	690
Sericulture and others	4	8
Total	1,163	3,651

14.6.14 While fabric production in handloom is assumed to grow at an annual compound growth rate of about 3 per cent, in sericulture it is assumed to grow at the rate of about 15 per cent per annum, that in modern sub-sector at the annual rate of 39 per cent during 1997-2002. The overall annual growth rate of fabrics in the textile sub-sector is envisaged to be 25.7 per cent during 1997-2002. A comprehensive programme for the creation of new capacity in spinning, weaving, dyeing and finishing and export-oriented garments will be launched in order to attain self-reliance in fabric for domestic market by the year 2002 and to meet 50 per cent of the fabric requirements of export-oriented RMG industries. Table 14.9 shows the number of units proposed to be set up during the Fifth Plan.

Table 14.9
Number of New Units Proposed to be Established in Different Subsectors
During Fifth Plan

Sub-sectors	1997/98	1998/99	1999/2000	2000/2001	2001/2002	1997-2002
Spinning (Each unit of 25,000 Spindles)	42	42	42	42	45	213
Weaving (Each unit of 120 Shuttleless Loom)	46	46	46	46	46	230
Dyeing and finishing (Each unit of 10 million metres per annum)	49	49	49	49	53	249
RMG (Each unit of 0.6 million pieces per annum)	153	153	153	153	153	765

14.6.15 Employment Generation in the Textile Sub sector: In the textile sub-sector it is estimated that a total of 1,779,560 persons will be employed during the Plan period, of which 8,40,760 will be in the public sector and 938,800 will be in the private sector. In the private sector 130,800 persons will be employed in spinning, 46,000 in weaving and knitting, 373,500 in dyeing and finishing, 382,500 in RMG, 6,000 in specialised textiles and 6,000 in miscellaneous industries. In the public sector 1,500 persons in BTMC, 3,260 in Department of Textiles, 670,000 in sericulture and 166,000 in handloom will be employed.

14.6.16 Jute Industries: Jute is a vital sector of the economy from agricultural, industrial and commercial points of view. About 5 million bales of raw jute is produced in the country every year of which about 1.5 to 2 million bales are exported, 3 million bales are consumed by local mills and about 0.5 million bales are used for domestic consumption and kept as carry over stocks. About 50 per cent of world import demand for jute goods (approx. 0.90 million metric ton) annually is met by Bangladesh. Jute is the third biggest export earner (Tk.15,960 million annually) of the country.

14.6.17 As this sector provides large scale employment and earns substantial foreign exchange, the government continued to provide hidden subsidies and financial assistance to jute mills from the very beginning. Consequently the sector's debts to the banks stood at about Tk. 40 billion in 1993 when the government launched Jute Sector Reforms Programme (JSRP) with financial and technical assistance from IDA. The Programme envisaged to create

a viable, essentially privately owned jute industry to be operated on a commercial basis. Major thrust of the JSRP was privatisation of the public jute mills within 30th June, 1996. The Privatisation Board tendered and re-tendered a number of jute mills for privatisation during the last few years but not much satisfactory response was received from the market.

14.6.18 The performance of the private sector mills till the end of 1996/97 has been disappointing and frustrating. In spite of receiving debt write-off, restructuring facility and loss financing support from the government under JSRP, the private sector could not utilise its existing installed capacity of 10,000 looms. As a matter of fact, the private sector utilised less than 50 per cent of their capacity and closed down 8 mills.

14.6.19 The JSRP was a difficult and complex programme. The government made sincere efforts to carry it forward. The government spent more than double the amount of the IDA Credit Line (Tk. 10,000 m.) in this project. The government issued bonds worth Tk. 18,060 million to pay off the debts of BJC and 4 closed jute mills and provided loss financing support to the running jute mills. It also paid Tk. 3,360 million to meet the separation cost of the workforce of the public jute mills. But the purpose for which the programme was undertaken has not been achieved. The commercial viability of the jute industry has not been established. Privatisation was recognised as an effective means to strengthen the role of the private sector in trade and industry with a view to accelerating economic development and augmenting resources for the same. Accordingly, the government adopted a comprehensive privatisation policy and laid down detailed procedure to facilitate the process of privatisation. In order to create a viable, essentially privately owned jute industry to be operated on a commercial basis in a reformed policy environment, the government has been pursuing the jute sub-sector restructuring programme since July, 1993. The government has already decided to reduce its ownership of jute sector investment from 64 per cent to 20 per cent. Some 23 jute mills, out of 31 in the public sector, are enlisted for privatisation. The Privatisation Board has almost completed evaluation of the asset value of these mills with a view to unloading them to the private sector with utmost speed.

14.6.20 The loss of production of the jute industry to the extent of 15 per cent to 20 per cent is attributable to erratic power supply. It is expected that the power need of the jute industry will be met by the later part of the Fifth Plan. The future of jute and jute industry lie in their diversified uses and aggressive market promotion. For this, there is an immediate need for strengthening the R&D and institutional capacities of the Ministry of Jute and its various organs.

14.6.21 In order to achieve the objectives of the Fifth Plan, the following strategies will be pursued for the jute manufacturing sub-sector during the Plan period :

- a. **Improvement in Productivity and Capacity Utilisation:** Improvement in productivity and capacity utilisation will be done through rehabilitation of the existing jute mills through BMR programmes, enforcement of industrial discipline and exploring possibility of participation of labour through profit-sharing and participation in management, adequate and timely supply of raw-materials and spare parts, privatisation of maximum public sector jute mills and rationalisation of man power therein, improvement in managerial efficiency through skill development training and improvement in the quality of conventional jute products and reduction in the cost of production through improvement in per loom production and reduction in raw jute cost by increasing per acre productivity.

- b. Diversification of End Uses of Jute:** Diversification of end uses of jute through production of pulp and paper, geo-textiles, absorbents, hard-boards, handicrafts, mats, decorative wall covering, shopping bags, carpets, blankets etc. will be pursued through undertaking appropriate development programmes. Development and extension of appropriate varieties of jute, kenaf and rami fibre to enable round-the-year supply of these items for establishment and smooth operation of pulp and paper industry will be undertaken. Improvement in the quality of jute products will continue to remain a central strategy for attracting higher prices for Bangladeshi jute goods.
- c. Market Promotion:** Attempts will be made to promote and develop market for jute goods through identifying the constraints of the existing marketing system of jute goods and taking appropriate measures to overcome such constraints, assessing the market demand both at home and abroad, conducting studies on a continuous basis on the jute goods demand with a view to overcoming the demand and supply gap, formulating appropriate pricing policies, opening required number of sales centres in Bangladesh missions abroad, organising display of jute goods in major importing countries, participation in the international trade fairs and contacting foreign buyers to gear up exports, making institutional arrangement to monitor export prices of competing goods to prevent dumping by the competing countries and formulating appropriate export and import policies. Commercial Sections of Bangladesh Missions abroad will be revamped for this purpose.
- d. Financial and Other Policy Incentives:** Financial and other policy incentives strategy includes rationalisation of monetary and fiscal incentives, *viz.* reducing interest rate from existing 15 per cent to about 10 per cent or less, exemption of excise duty on electricity, reduction in the prices of oil and gas for generation of electricity for jute mills to the level fixed for Bangladesh Power Development Board (BPDB) and exemption of advance income tax in case of jute yarn and twine, adopting suitable and appropriate mechanism to maintain parity with dollar value among the competing countries to match the external competition for our jute and jute goods.
- e. Strengthening of Institutional Capability and R&D:** Strengthening of institutional capability and R&D involves evaluation of the existing R&D institutions for clear identification of technological gaps. In order to bridge the gaps, establishment of a new “Jute Industry Development Centre” under Bangladesh Jute Research Institute (BJRI) will be pursued with necessary technical assistance to undertake research activities to develop technologies for improvement of quality and yield of traditional jute fibres as well as for diversification of jute products. To evolve new high yielding varieties of jute seeds to increase per acre yield which, in turn, will lead to substantial reduction in the cost of production to make jute and jute goods competitive in the international market will be at the top of R&D priority. Research and Development of rami fibre by sharing experience with China will be promoted.
- f. International Jute Organisation (IJO):** For undertaking research and development in the areas of jute, jute goods and related products as well as accessing markets, necessary assistance will be sought from the International Jute Organisation (IJO).
- g. Improvement of Environment and Natural Resources:** Retting of jute is perceived to contribute to water pollution where there is insufficient availability of water. In such areas, canals and small ponds will be dug for retting of jute. If necessary, promotional measures will be undertaken to motivate the jute growers by the local government bodies for retting their jute in a proper way to reduce/eliminate adverse environmental

effects. New techniques for retting of jute will be explored. The government policy on banning the production of polythene bags as substitutes for jute bags will be enforced and towards this end, polythene bag factories may be converted into jute bag manufacturing factories. Setting up of more polythene industries in the country will not be allowed. To reduce the acreage under jute and at the same time maintain a higher volume of supply for its diversified end uses, including use of green jute for pulp making and thus to ease the burden on insufficient forest resources of the country, efforts will be made to produce jute throughout the year through necessary augmentation of soil nutrition.

- h. Social Safety-net Programme:** Programmes will be undertaken to provide retrenchment benefits and retraining for self employment to support affected workers.
- i. Planning and Implementation of Development Programmes Through Local Level Institutions:** With the introduction of proposed institutional structure at Zilla, Thana and Union levels, small and cottage industries planning activities could be included in the functions of such local government bodies. During the Fifth Plan, BSCIC will provide necessary services for industrial development including industry based on jute and will maintain effective liaison with the development programmes of such institutions. The process of interaction between BSCIC and the local level institutions will ensure effective local level participation in such industrial planning and development. Moreover, the NGOs who have emerged as a new force for development in the rural areas are expected to play an effective role in the skill development of the poor and disadvantaged groups through motivation and training and help them in producing varieties of industrial goods including jute goods.
- j. Employment Generation and Poverty Alleviation:** The jute and jute manufacturing sub-sector has immense potential for employment generation and poverty alleviation in Bangladesh. Jute production, jute industry and trade and the related services employ about 10 per cent of our labour force and jute industry is the second largest industrial employer after textiles. The new and diversified use of jute plants and fibres for pulp and paper, textile yarn blended with cotton and wool, geotextiles, jute reinforced plastic materials, luggages, shopping bags, handicrafts, accessories, etc. will open new horizon for employment opportunities. The women will find job opportunities in the rural areas by utilising finer jute yarn in cottage industries. In the agricultural sector, increased yield per unit area will bring down the production cost of jute which will help growers to alleviate their economic hardship by raising their income.

14.6.22 Chemical Industry: In the Fifth Plan, the objectives of the chemical sub-sector will be as follows:

- a. to increase the contribution of chemical industries sub-sector (fertiliser, paper, newsprint, etc.) to GDP;
- b. to meet the needs of the country in respect of fertiliser, paper, news print, etc.;
- c. to identify and exploit the comparative advantages of the economy in different sub-sectors and to direct public sector investment in those desirable sectors where private investment is still shy;
- d. to identify and give emphasis on thrust sectors;
- e. to develop human resources for efficient management and operation of enterprises;
- f. to develop a sound technological base in the country; and
- g. to provide facilities and services to attract private investment, including foreign direct investment.

14.6.23 In order to achieve the objectives and targets set for the chemical industries sub-sector, the following strategies will be pursued for accelerating the contributions of this sub-sector towards a self sustained economy:

- a. Public sector dominance in this sub-sector will be gradually reduced and the private sector will be encouraged to set up new industries either alone or jointly with the public sector. All the sub-sectors under chemical sector are open to the private sector. But the private sector has not come forward to take up the challenge except participating in a joint venture with a foreign company (KAFCO). The investment size, technological complexities and the mandatory price structure may be attributed as main reasons standing in the way of private sector participation in the fertiliser sector, particularly in urea manufacturing. A private company has recently come to set up a joint venture SSP fertiliser with BCIC. There are great prospects for participation by private sector in all areas of chemical sector. Necessary technical support such as project analysis, project preparation, demand and supply analysis, sourcing and pricing of machinery, market information, etc. will be provided to the private sector in setting up joint ventures and/or new enterprises in the private sector.
- b. Excess manpower in the corporations/enterprises will be rationalised to economise revenue expenditure. At the same time necessary power/authority will be delegated to the corporations/enterprises and they will be made accountable for failure and rewarded for success.
- c. One of the major problems and impediments to the growth of this sub-sector is the dearth of finance, technical know-how and skilled manpower. In this context, besides local currency support through ADP, the following source of financing will be vigorously explored:
 - i. alternate sources of financing for projects from the capital market will be explored. BCIC will be given freedom in exploring and arranging alternate sources of finance outside the country;
 - ii. more emphasis will be given on building projects on BOT/BOO/BOOT model; the public sector will identify viable projects, process them for approval and implementation; after implementation they will operate the projects for some time and subsequently transfer them to private entrepreneurs; and
 - iii. local currency financing, *inter-alia*, public subscriptions of shares through the capital market will be explored; joint venture companies, with participation of BCIC, will be encouraged to issue shares/debentures.
- d. In case of sick industries, viability where possible will be restored *inter-alia*, through screening out inefficient manpower and replacing them by efficient, dependable, sincere and committed manpower. Necessary training, both local and foreign, will be imparted for building up efficient management for restoring their viability. Technical support in the form of studies, equipment and machinery will be provided to put the industries/enterprises on a viable footing. All stakeholders - owners, management, labour and the concerned lending institution will be asked to bear out rehabilitation.

14.6.24 Projected production for some major chemical products during the Fifth Plan are as follows:

a. Urea Fertiliser: Bangladesh is a major producer of Urea Fertiliser in the region having 6(six) factories with annual installed capacity of 2,500 thousand metric tons of urea. In 1995/96 BCIC produced 2,134 thousand metric tons of urea. According to the projection made by BCIC the actual demand of urea fertiliser during 1995/96 was approximately

2,300 thousand metric tons. The projected urea production was 2,110 thousand metric tons. The demand of urea is rising by 10 per cent per annum. In 1996/97 the government has taken action to import 200 thousand metric tons of urea to meet the local demand. A recent study indicated that future demand of urea will further increase as shown in the Table 14.10 .

Table 14.10
Demand Projection of Urea Fertiliser (1997-2002)

(in million metric ton)

Year	Urea Demand	Local Production	Net Import Requirement
1996/97 Benchmark	2.40	2.05	0.35
1997/98	2.45	2.10	0.35
1998/99	2.67	2.10	0.57
1999/00	2.92	2.10	0.82
2000/01	3.19	2.49	0.70
2001/02	3.49	2.55	0.94

This leaves room for setting up more urea fertiliser factories in the country. For this purpose NGFF will be replaced by Shahjalal Fertiliser Co. Ltd. increasing annual production capacity from 106,000 metric tons to 330,000 metric tons and another new urea fertiliser factory will be set up in northern/southern part of the country by the year 1999/2000. There is a plan to increase capacity of urea production in JFCL and ammonia production in CUFL by 1999/2000 to 2000/2001.

- b. TSP:** The present annual demand of TSP in the country is about 700 thousand metric tons. TSP Complex produces about 150 thousand metric tons of TSP/SSP (TSP-50,000 metric tons and SSP 100,000 metric tons). The rest of the demand is met through import. In order to meet a big chunk of the demand the annual production capacity of TSP Complex will be increased to 275 thousand metric tons (TSP-75,000 metric tons and SSP-200 thousand metric tons) through balancing and full capacity utilisation. There is a plan for setting up a three hundred thousand metric ton SSP Factory by a foreign sponsor in collaboration with BCIC. There is also a plan for setting up a DAP factory with a capacity of 360 thousand metric tons in the country.
- c. Paper:** The present demand for writing and printing paper is 80,000 metric tons. The demand for various grades of paper has been increasing. In 1995/96 BCIC produced 41,889 metric tons of paper and the rest of the demand was met from the supplies of private sector and import. The projected production of paper in 1996/97 is 44,000 metric tons. The growth rate of demand for different grades of paper has been assumed to be 6 per cent to 10 per cent. In order to cater to the future demand the present capacity of producing paper and pulp in public sector including joint ventures will be increased through BMRE of the existing mills and setting up of new mills preferably under joint venture/private sector.
- d. Newsprint:** The demand for newsprint has increased rapidly during the last few years because of its use as writing paper and the government policy of cherishing the freedom of the press. The present demand for newsprint is about 60,000 metric tons per annum. The lone newsprint producer in the country, Khulna Newsprint Mill (KNM) having installed capacity of 48,000 metric tons per annum is no longer in a position to meet the domestic demand. In 1994/95 and 1995/96 KNM produced 43,061 and 40,479 metric tons newsprint respectively. A large quantity of newsprint is being imported into the country to meet the short-fall. To meet the demand for newsprint BCIC will undertake BMRE of KNM in the Fifth Plan period.

- e. **Cement:** The present annual demand for cement in the country is 0.28 million metric tons. In 1994/95 and 1995/96 BCIC produced 0.147 million and 0.153 million metric tons cement respectively. The only integrated plant Chhatak Cement Factory having a capacity of 0.233 million metric tons is under BCIC. There are about 6-7 cement mills in the private sector and based on imported clinker.

14.6.25 Under chemical industries sub-sector the major programmes/projects will include *inter alia* Shahjalal Fertiliser Factory, capacity increase of urea in Jamuna Fertiliser Factory, capacity increase of amonia in Chittagong Fertiliser Factory, Di-Amonium Phosphate Plant (DAP) at CUFL, setting up of a paper machine in SPPM, BMRE of Karnaphully Paper Mills, BMR of Khulna Newsprint Mill (KNM) and one Urea Fertiliser Factory in the northern or the southern zone. Projected production for different chemical products is summarised in the Table 14.11.

Table 14.11
Projected Production for Chemical Industries

Items	(in metric ton)					
	1996/97	1997/98	1998/99	1999/2000	2000/2001	2001/2002
Urea	2,049,810	2,150,000	2,150,000	2,150,000	2,330,000	2,363,000
TSP/SSP/DAP	104,181	150,000	176,000	209,000	220,000	220,000
Newsprint	23,903	45,000	45,000	45,000	45,000	45,000
Paper	23,239	45,000	45,000	53,400	72,600	79,200
Cement	107,300	150,000	186,000	221,000	221,000	233,000

Source : BCIC

14.6.26 Sugar Industry: Objectives of the sub-sector during the Fifth Plan is to increase the contribution of sugar sector to GDP, create new job opportunities specially in rural areas and reduce sugar import by increasing the domestic sugar production.

14.6.27 In the current industrial policy additional investment in sugar industry by the public sector has been discouraged and the private sector has been given preference with various incentives. But so far, response from the private sector in sugar industry has been disappointing. So the public sector will continue to play some role. BMRE programmes of existing sugar mills will continue to be implemented for their progressive unloading to the private sector.

14.6.28 Dry and low rain-fall belt in the north, north-west and western regions of Bangladesh comprising the greater districts of Rajshahi, Dinajpur, Bogra, Rangpur, Pabna, Kushtia, Jessore and Faridpur are considered as the best sugarcane growing areas of the country. In fact, almost all of the existing sugar mills are located in these regions where sugarcane has emerged as the main cash crop over the years. There is ample scope for capacity expansion of some existing sugar mills as well as establishment of new sugar mills in different locations of the cane growing regions.

14.6.29 Demand for sugar in the country is estimated to be about 371 thousand tons in 1996/97 for a population of 123.8 million based on per capita sugar consumption of 3.0 kg. a year. Assuming the consumption rate remains constant, demand for sugar will increase to about 400 thousand tons in 2001/2002 for an estimated population of 132.5 million. If per capita sugar consumption increases due to growing urbanisation and change of food habit, total demand of sugar will increase further. Against this demand, total sugar production capacity of the 15 operating sugar mills is now 215 thousand tons per annum based on total

cane crushing capacity of 21,044 tons per day, 120 effective crushing days and 8.5 per cent sugar recovery. However, depending on the availability and quality of sugarcane, actual sugar production may vary from 200 thousand tons to 225 thousand tons per annum. Thus, at present there is an annual deficit of about 150 thousand tons of sugar which is met through import at the cost of Tk.2,500 million in hard earned foreign currency. The deficit will increase nearly to 200 thousand tons in 2001/2002, unless additional sugar production capacity is created at suitable locations of cane growing regions of the country.

14.6.30 Estimated demand, domestic production and import of sugar up to 2002 are given in the Table 14.12.

Table 14.12
Estimated Demand for Production and Import of Sugar

Year	Population (million)	Demand @ 3.0 kg. (million ton)	Local Production (million ton)	Deficit/ Import (million ton)
1996/97	123.80	0.37	0.14	0.23
2001/2002	132.50	0.40	0.200-0.23	0.17-0.20

14.7 Obstacles to Growth of the Sugar Industry in Bangladesh

14.7.1 With the exception of a few, most of the sugar mills in Bangladesh do not have cane plantations of their own and they have to depend on a large number of small farmers in their respective mill zones for sugarcane supply. But owing to several factors including fragmented and small cane holdings, high initial input cost, year round waiting time for cane, incidence of pest and disease, lack of high yielding variety of cane, high risk involvement etc., per acre yield of sugarcane in Bangladesh (which is 20-21 tons/acres) is relatively low. As a result, sugarcane faces hard competition from other crops, especially paddy which has a much shorter growing period. Besides, sugar content in the cane is also low mainly because of climatic factors. This stands in the way of increasing the sugar recovery which at present varies from 8.0 per cent to 8.5 per cent.

14.7.2 Sugar industry in Bangladesh was originally started by the private entrepreneurs during the mid-thirties. But since then no further investment by the private sector has been made in the sugar industry. Investment in sugar industry is now open to both the public and the private sectors. In the new industrial policy, the role of the public sector has been shrunk and new investment by the public sector in sugar industry has been discouraged in order to encourage the private sector investors. Though private investment in different industrial sectors has increased significantly in recent years, no private entrepreneur has so far come forward to set up new sugar mills in the country. As it is neither desirable nor advisable to withhold investments from the sugar subsector altogether, an appropriate policy package, along with adequate incentive measures, will have to be worked out to make the sugar subsector attractive for private investments.

14.7.3 Total cane crushing capacity of the existing 15 sugar mills of the country is 21,044 metric tons cane per day (TCD) with which 200-225 thousand tons of sugar can be produced per annum. Based on present performance and future prospect of sugarcane production in their respective mill zones, cane crushing capacity of 8 (eight) of the existing sugar mills namely, Carew, Zeal Bangla, North Bengal, Natore, Faridpur, Kushtia, Mobarakganj and Panchagarh Sugar Mills, can be increased by 1000-1250 TCD each during the Fifth Plan. In addition to the expansion programme, 3 (three) new Sugar Mills of 2000 TCD each may be set up at Shibganj of Chapai Nawabganj district, Serajganj of Serajganj district and Jhikargacha of Jhenidah district. The private sector will be encouraged to establish these new

mills. This will increase the cane crushing capacity by another 6,000 TCD. On completion of the development programme proposed above, total cane crushing capacity of the country will increase from 21,044 TCD in 1996/97 to 35,294 TCD and sugar production capacity will increase from 215 thousand tons to nearly 400 thousand tons per annum by 2001/2002. This will help reduce sugar import. In addition, the proposed three new sugar mills will create direct employment opportunity for 3,225 persons (1,075 persons in each) and will also bring about benefits to a large number of people including marginal farmers in areas surrounding the mills.

14.7.4 Besides the sugar mills, there is a bright prospect for setting up an export oriented molasses-based distillery having a capacity of 5-6 million litres per annum. This project may be set up as a joint venture with foreign entrepreneurs who will ensure export of the same. This will increase the value-addition of molasses which is obtained as a by-product from the sugar mills and will also create job opportunity for about 200 persons.

14.7.5 Steel and Engineering: The engineering industries produce investment goods which determine the technological capability and consequently the production level and efficiency of an economy. The engineering industries are also suppliers of important consumer durables. This is particularly so in the electrical and transport equipment industries. In the developed economies, the growth of the subsector generally exceeds that of the manufacturing as a whole. In the developing economies, on the other hand, the sub-sector lags behind.

14.7.6 Bangladesh has a 'mini' steel plant at Chittagong which has been out of operation for quite sometime. Its engineering base is very weak despite the fact that the country has a machine tools factory, a diesel engine manufacturing plant as well as a plant for manufacturing general electrical equipment. The performance of the sector has not been satisfactory for various reasons though this is the basic sub-sector for industrial development. During the first four years of the Fourth Plan (1990-95), the production volume of this sub-sector showed downward trend because of the low capacity utilisation, low productivity, lack of investment fund in the public sector, major constraints in the private sector consisting of demand constraints, inefficient operation of existing units both in the private and public sectors, dearth of skilled and trained personnel, inadequate R&D, inadequate infrastructures, inconsistent tariff policies etc.

14.7.7 Under the current industrial policy, the growth of this sub-sector has come to depend on private sector initiative. In pursuance of the government's privatisation policies, BSEC is endeavouring to increase the efficiency of the enterprises under its control. Proposals for financial re-structuring of some of the enterprises are under consideration by the government. In the meantime BSEC has already issued public shares to the extent of 49 per cent in four of its enterprises. Again, the remaining 51 per cent shares (held by the government) of the two enterprises out of the above mentioned four enterprises have been earmarked for sale to the public. Dhaka Steel Works Ltd. along with two other enterprises (i.e. Quality Iron & Prantik Traders Ltd.) is under the process of handing over to one of the previous Bangladeshi shareholders. Besides, seven more enterprises namely, Bangladesh Machine Tools Factory (BMTF), Bangladesh Diesel Plant, Bangladesh Blade Factory, Bangladesh Can Co. Ltd. General Electric Mfg. Co. Ltd., Mehar Industries (B) Ltd. and Chittagong Steel Mills Ltd. are earmarked for outright sale. However, the disinvestment of SOEs is a continuous process and to be implemented in phases. Keeping in view the importance and prospect of steel, engineering, ship-building, electrical will be and electronic products, the objectives for the Fifth Plan of the steel and engineering sub-sector will be to:

- a. support the agricultural sector with the ultimate objective of transforming the age-old agricultural practice into a semi-mechanised one;
- b. supply capital goods and spares to various sectors of the economy, e.g., agriculture, power, gas, natural resources, transport, communication, construction as well as manufacturing sector itself;
- c. substantially reduce dependence on import of machinery and essential spares and components for jute, textile, sugar mills and electronic industries, thereby improving the balance of payments of the country;
- d. strengthen and diversify the existing export structure through production and export of engineering goods;
- e. maximise capacity utilisation of the existing capital intensive industries through necessary balancing, modernisation, replacement and expansion;
- f. provide linkage, through sub-contracting, to light engineering industries throughout the country and thus create gainful employment opportunities with special emphasis on rural employment through promotion and development of industries in rural areas;
- g. create employment opportunities through development of skills in major sectors like steel, engineering, ship-building and electronics;
- h. accelerate transfer of appropriate technology through establishment of project design and engineering company and thereby reducing dependence on expatriate consultants/experts with regard to undertaking feasibility study, project design, engineering services, etc.; and
- i. accelerate research and development activities for consolidating the industrial base as well as for the development of indigenous technology.

14.7.8 The general development strategies for the steel and engineering sub-sector as a whole are outlined as follows:

- a. consolidation and effective utilisation of existing capacities will be achieved through planned capacity expansion, product diversification, BMREs and introduction of additional working shifts;
- b. with a view to improving the balance of payments position, reducing dependence on imports and promoting self reliance, necessary programmes will be undertaken to diversify the industrial base and to set up import substitute industries for the progressive manufacture of agricultural equipment, jute textile, sugar, electrical machinery and equipment as well as their spares and accessories;
- c. measures will be taken to develop viable products which are high technology based and require venture capital for which private investment is not forth coming;
- d. a significant feature of the strategy for industrial development in general and for steel and engineering industries in particular will be to set up projects under joint-venture with the reputed local/foreign manufacturer mainly to create strong export base and thereby to improve country's balance of payments position;
- e. new capacity will be created in the areas of steel making, electrical cables and conductors and basic electronic components manufacturing; and
- f. viability of sick projects like Bangladesh Machine Tools Factory, Bangladesh Diesel Plant and other projects will be restored through improvement of management capability of the enterprises and also through phasing out of inefficient manpower for progressive transfer to the private sector.

14.8 Development Programmes

14.8.1 The government has undertaken a programme for restructuring of BSEC to make it commercially viable. To make Chittagong Steel Mills Ltd. (CSM) profitable, a restructuring proposal is under consideration of the government. All out efforts will be made to run CSM on commercial and profitable basis.

14.8.2 The other important projects which will be implemented during the Fifth Plan period are: a plant for production of 1,000 M.T. per annum of cross-linked polyethylene (XLPE) cables, a light engineering complex at a suitable location in the north-west region of the country, progressive manufacturing of buses, trucks and cars at Progati Industries Ltd., setting up of a plant for manufacturing of black plain steel sheet, an alloy and special steel manufacturing plant and a new plant to manufacture cars. At the same time the uneconomic enterprises under the corporation will be sold and some enterprises will be disinvested partially.

14.8.3 Projected Production of Major Engineering Products: Steel & Engineering Corporation mainly produces products like steel ingot, billet, corrugated galvanised iron (CGI) sheet, mild steel plate, GI/MS pipe, electric cables, fluorescent tube light, super-enamelled copper wire, ceiling fan, diesel engine, water vessel, bus, truck, jeep and motor cycle, etc. The projected production of major engineering products is given in Table 14.13.

Table 14.13
Major Products of BSEC (1996-2002)

Items	Unit	1995/96	1996/97 (Benchmark)	1997/ 98	1998/ 99	1999/ 00	2000/ 01	2001/ 02
Steel Ingot	M.T.	21898	60000	60000	60000	60000	65000	75000
Billet 110/85mm	M.T.	15197	15380	25000	30000	35000	35000	40000
Billet 50/65mm	M.T.	4624	10000	10000	10000	12000	12000	15000
C G I sheet	M.T.	5439	25000	15000	15000	20000	20000	25000
M S Plate	M.T.	3175	7500	7500	7500	7500	8000	10000
GI/MS Pipe	M.T.	6134	8000	8000	9000	10000	10000	10000
Electric Cables	M.T.	3172	3200	3000	3000	3600	3800	3850
FL. Tube Light	Mil.No	0.95	0.95	0.97	0.97	0.98	0.98	1.00
SEC Wire	M.T.	394	350	350	350	375	400	400
Ceiling Fan	Nos.	28491	60000	60000	60000	65000	65000	70000
Diesel Engine	Cyl.	604	2500	2500	3000	3500	4000	4000
Water Vessel	M.T.	2319	6200	6200	65000	6500	7500	7500
Bus, Truck, Jeep etc.	Nos.	1232	1200	1200	1225	1250	1300	1350
Motor Cycle etc.	Nos.	6700	7000	7000	7500	8000	8000	8000

14.8.4 Small and Cottage Industries: Small and cottage industries occupy a unique position in the economy of Bangladesh. Its contribution to poverty alleviation cannot be underestimated. During the Fourth Plan, against the projection of 0.4 million employment generation, 0.35 million job opportunities were created. The contribution of the sub-sector to the GDP is about 5 per cent. The SCI sector now employs 5 million people directly and indirectly which accounts for 82 per cent of the total industrial labour force. The agriculture sector is not likely to provide the required employment opportunity in the long run. The establishment of large scale industry to offer large scale employment is not considered to be a feasible option at the moment because of resource constraint. It is, therefore, imperative to develop means outside the agricultural sector for creation of employment opportunities. The SCI is an area where large scale employment opportunities exist. Compared to large and medium industries, the SCI has some inherent advantages; these are:

- a. lower capital investment;

- b. more jobs per unit of invested capital;
- c. lower capital-output ratio;
- d. lower infrastructure requirement;
- e. shorter start-up time;
- f. creation of micro entrepreneurial talent;
- g. lower consumption of energy;
- h. less environmental risk; and
- i. stimulation of personal savings and promotion of agro-industrial linkages.

14.8.5 Keeping in view the industrial and socio-economic policies of the government, the major objectives of SCI during the Fifth Plan are :

- a. to reduce unemployment through generation of new employment opportunities, especially for the rural people;
- b. to increase the income of poor people by self-employment through indigenous resources and technology;
- c. to generate employment through entrepreneurship development;
- d. to meet the local demand for essential commodities;
- e. to discourage influx of the rural people to the urban areas through rural industrialisation;
- f. to encourage geographical dispersal of industries and ensure balanced regional development;
- g. to promote sub-contracting linkages among the various types of large, medium and small scale industries;
- h. to encourage production of export-oriented and import-substitute products through promotion of small agro-based industries; and
- i. to increase the contribution of SCI sector to GDP.

14.8.6 In order to achieve these objectives of the SCI, the following strategies will be followed :

- a. to assist the SCI entrepreneurs through rendering pre and post investment promotion and extension services;
- b. to develop and improve efficiency of SCI entrepreneurs including women entrepreneurs through management training programmes;
- c. to obtain optimum utilisation of existing capacity through measures for balancing, modernisation, rehabilitation and expansion (BMRE) of existing industries;
- d. to assist and promote local industries with comparative advantage through tariff rationalisation and appropriate fiscal measures;
- e. to encourage growth of linkage industries and subcontracting, agro-based and agro-support industries, export oriented and import substitute industries, engineering, electrical and electronics industries;
- f. to extend credit facilities to the SCI entrepreneurs;
- g. to develop the quality of the SCI products;
- h. to develop marketing facilities of the SCI products;
- i. to strengthen co-ordination among the agriculture and others related sectors;
- j. to diversify the industrial activities in the new potential areas;
- k. to promote joint venture with local and foreign collaboration; and
- l. to take appropriate measures for ensuring optimum utilisation of the facilities created in the existing industrial estates; establishment of any new industrial estate, though being generally discouraged, will only be allowed if justified by regional needs.

14.8.7 In view of the objectives and strategies set forth the following projections have been made for the SCI sector in the Fifth Plan:

- a. to increase the SCI sector's contribution to GDP from 5 per cent to 7.5 per cent; and
- b. to create employment opportunities for 0.478 million people.

14.8.8 Programmes: In order to achieve the above objectives a comprehensive programme for development of small and cottage industries has been proposed. This programme can be classified into two types - public sector programme and private sector programme. An outlay of Tk.1,089.89 million has been envisaged for the public sector, while Tk. 125,246.97 million is earmarked for private sector investment. Of this, credit requirement has been estimated at Tk.12,800 million including a foreign exchange component of Tk.6,144.4 million during the Fifth Plan period for setting up small and cottage industries in the private sector.

- a. **Public Sector Programme:** In the public sector a number of projects will be implemented during the Plan period through investment of Tk.1,089.89 million. Out of these investment projects, 12 are spill-over projects and the rest will be new projects. Under technical assistance one project is a spill-over project. Public sector programme aims at providing infrastructure facilities including common facilities, dyes and chemicals, credit facilities, training to the entrepreneurs, extension services and research, market promotion and also self employment facilities for the people. Besides, some new projects such as development of salt industry in Khulna-Satkhira region, Women Entrepreneurship Development (4th phase), Skill Development Centre at Gopalganj will be established during the Plan period. Bangladesh Small and Cottage Industries Corporation (BSCIC) has been constantly monitoring the utilisation position of developed industrial plots in the existing industrial estates. It also takes appropriate measures to expedite allotment process whenever there is a genuine need. Construction of any new industrial estate will be undertaken only in response to a clearly demonstrated demand for it.
- b. **Private Sector Programme:** In the private sector a programme of Tk.125,246.97 million is proposed for investment. The objective of the private sector programme is to encourage establishment of small and cottage industries in various important areas. These are: agricultural tools and equipment, affixation pumps, motors and other equipment, fertiliser and insecticides, dyes and chemicals, leather and rubber products, rural transport and transportation equipment, sports good and toys, food, fruits and vegetables, preservation and processing of semi-intensive shrimp culture, fish, poultry and cattle feed, cotton spinning, textiles, handloom, hosiery and silk products, machine tools, electrical and electronics equipment and goods, spares and accessories, intermediate products, dairy supplies and services etc. Also priority will be given to the development of rural, cottage and handicrafts industries.

14.9 Benchmark Production and Terminal Year Projection for Major Manufactures

14.9.1 Benchmark production of major manufactures and projection of production for the terminal year of the Fifth Plan are presented in Table 14.14.

Table 14.14
Projected Production of Major Industrial Output During
Fifth Plan Period

Items	Unit	1996/97 (Base Year)	2001/2002 (Terminal Year)
Urea	000 M.T.	2,049.81	2,363.00
T.S.P/S.S.P	000 M.T.	104.18	220.00
Paper, Pulp and Newsprint	000 M.T.	70.00	124.20
Cement	000 M.T.	107.30	233.00
Yarn Production	Million KG	113.00	522.00
Cotton Yarn	Million KG	75.71	349.74
T.C.& Others	Million KG	37.29	172.26
Fabrics Production	Million Metre	1,163.00	3,651.00
Cotton Cloth	Million Metre	779.21	2,446.17
T.C. & Others	Million Metre	383.79	1,204.83
Fabrics for Garments	Million Metre	210.00	1,614.00
Cotton Fabrics	Million Metre	140.70	1,081.38
T.C. & Others	Million Metre	69.30	538.62
Jute Textiles	000 M.T.	435.00	500.00
Hessian	000 M.T.	139.20	160.00
Sacking	000 M.T.	252.30	290.00
C.B.C.	000 M.T.	43.50	50.00
Sugar	Million M.T.	0.14	0.23
Spirit	000 Litre	2,500.00	4,000.00
Bus, Truck & Car	Nos.	1200	1350
Motor Cycle	Nos.	7000	8000
Diesel Engine	Nos.	750	4000
Steel Ingot	000 M.T.	21.90	75.00

14.10 Manufacturing Sector Outlay During Fifth Plan

14.10.1 The Fifth Plan provides an outlay of Tk.310,569.86 million for investment in the manufacturing sector. About 96 per cent of this outlay (i.e.Tk.298,776.16 million) is expected to be in the private sector and the residual 4 per cent is earmarked for the public sector. Outlay for the public sector will be utilised mainly for promotional and support services for the private sector, providing the equity share in case of joint ventures between the public and private sectors as well as in establishing industrial undertakings in those areas where the private sector will not be forthcoming. During the execution of the Plan if the private sectors response is inadequate investment in the public sector may have to be made in critical areas such as chemical fertiliser, chemicals etc.

14.10.2 The tables 14.15 and 14.16 show agency wise tentative public sector investment outlay and sub-sector wise private sector investment outlay respectively during the Fifth Plan period.

Table 14.15
Public Sector Investment Outlay for Fifth Plan
(at 1996/97 prices)

(in million Taka)

Agency/sub-sector		Spill-over projects	New Projects	Total Investment	
A.	Investment	Amount	Amount	Amount	%
	Bangladesh Chemical Ind. Corpn.	1,040.00	3,883.37	4,923.37	41.75
	Bangladesh Steel & Engg. Ind. Corpn.	150.00	212.00	362.00	3.07
	Patent, Design & Trademark	-	4.00	4.00	0.03
	National Productivity Organisation (NPO)	-	6.70	6.70	0.06
	Bangladesh Sugar & Food Ind. Corpn.	-	297.00	297.00	2.52
	BEPZA	500.00	560.48	1,060.48	8.99
	BFIDC	-	6.26	6.26	0.05
	Bangladesh Small & Cottage Ind. Corp.	1,000.00	89.89	1,089.89	9.24
	BITAC	-	31.79	31.79	0.27
	BFDC (Bangladesh Film Dev. Corpn.)	-	6.26	6.26	0.05
	BIM	10.00	4.85	14.85	0.13
	Department of Printing & Stationery	20.00	15.67	35.67	0.30
	BJMC	30.00	121.20	151.20	1.28
	Department of Jute	150.00	31.30	181.30	1.54
	Bangladesh Jute Research Institute	-	40.58	40.58	0.34
	BTMC	150.00	138.76	288.76	2.45
	BHB (Bangladesh Handloom Board)	500.00	34.85	534.85	4.54
	Bangladesh Sericulture Board	27.00	58.10	85.10	0.72
	Department of Textiles	1,060.00	255.00	1,315.00	11.15
	Sub-total (A) :	4,637.00	5,798.06	10,435.06	88.48
B.	Other Outlay:	115.80	1,242.84	1,358.64	11.52
	Total (A+B)	4,752.80	7,040.90	11,793.70	100

Table 14.16
Private Sector Investment Outlay During Fifth Plan Period
(at 1996/97 prices)

(in million Taka)

Sl. No.	Sub-sector/Group	Outlay							
		Large & Med.		Small		Cottage		Total	
		Allocation	%	Allocation	%	Allocation	%	Allocation	%
1.	Food & Allied Industries.	11,544.07	6.65	16,461.44	14.12	1,274.55	14.71	29,280.06	9.80
2.	Textile Products.	51,199.23	29.50	40,302.55	34.57	2,463.32	28.43	93,965.10	31.45
3.	Jute Products and Allied Industries.	1,903.11	1.10	641.20	0.55	84.92	0.98	2,629.23	0.88
4.	Forest Products and other Agro-based Industries.	3,804.97	2.19	2,867.93	2.46	1,274.55	14.71	7,947.45	2.66
5.	Paper, Board, Printing & Publishing and Paper Converting & Packaging.	7,673.89	4.42	4,196.97	3.60	169.82	1.96	12,040.68	4.03
6.	Tannery, Leather and Rubber Products	9,502.85	5.53	3,427.52	2.94	424.56	4.90	13,444.93	4.50
7.	Chemical, Pharmaceutical & Allied Industries.	40,332.93	23.24	13,162.16	11.29	254.74	2.94	53,749.83	17.99
8.	Glass, Ceramic & other Non-metallic Mineral Products.	5,129.52	2.96	1,014.27	0.87	339.65	3.92	6,483.44	2.17
9.	Engineering, Electrical & Electronics Industries.	14,403.36	8.30	15,890.19	13.63	2,123.67	24.51	32,417.22	10.85
10.	Service Industries (Warehousing, Transportation, Construction, etc.)	15,354.75	8.85	11,564.98	9.92	-	-	26,919.73	9.01
11.	Trade & Industries Promotion:	209.14	0.12	-	-	-	-	209.14	0.07
12.	Misc. Industries	12,381.37	7.14	7,053.24	6.05	254.74	2.94	19,689.35	6.59
	Total	173,529.19	100	116,582.45	100	8,664.52	100	298,776.16	100

14.11 Sub-sectoral Investment Outlay

14.11.1 Projected Investment Outlay for the Private Sector Textile Industry: The estimated investment requirement for creation of new capacity in spinning, weaving, dyeing

and finishing, export-oriented RMG sub-sector and other textile industry is estimated at Tk.93,965.10 million and shown in the Table 14.17.

Table 14.17
Projected Investment in Private Sector Textile Industry During Fifth Plan Period

(in million Taka)

Textile Sub-sector	1997/98	1998/99	1999/2000	2000/2001	2001/2002	1997-02
A. New Capacity Creation						
Spinning	9,105.55	9,195.25	9,305.10	9,129.80	8,913.57	45,649.27
Weaving	5,625.10	5,205.35	4,923.20	4,712.20	4,410.52	24,876.37
Dyeing & Finishing	2,712.85	2,203.15	2,512.85	2,610.15	3,056.03	13,695.03
RMG	776.33	785.25	809.25	710.40	623.00	3,704.23
Others *	717.35	718.55	683.85	732.10	588.35	3,440.20
Total (A)	18,937.18	18,707.55	18,234.25	17,894.65	17,591.47	91,365.10
B. BMRE						
10 Textile Mills	200.00	150.00	-	-	-	350.00
Specialised Textiles	350.00	325.00	325.00	325.00	325.00	1,650.00
Total (B) :	550.00	475.00	325.00	325.00	325.00	2,000.00
C. Handloom & Sericulture						
Handloom	120.00	120.00	120.00	120.00	120.00	600.00
Total (C) :	120.00	120.00	120.00	120.00	120.00	600.00
Total (A+B+C)	19,607.18	19,302.55	18,679.25	18,339.65	18,036.47	93,965.10

* New capacity creation in other textile industry.

14.11.2 Investment Outlay in Public Sector Textile: The present policy of the government is to privatise public sector textile mills in phases. In pursuance of this policy, 10 textile mills under BTMC were laid off. Among these laid off mills, 7 were sold to private entrepreneurs and 6 of these were handed over to them. The remaining 3 laid off mills are in the process of sale through tenders. Another 11 textile mills from the remaining 30 mills and one engineering workshop under BTMC will be privatised immediately. Until all the mills are privatised BTMC will operate the profitable mills. In view of this, new spindles are being added to 10 BTMC mills under BMRE projects. Another 4 mills will be brought under BMRE programme during the Fifth Five Year Plan period. Besides, Ministry of Textiles (MOT), Bangladesh Handloom Board (BHB), Bangladesh Sericulture Board (BSB), and Department of Textiles (DOT) will carry out promotional activities by implementing several development projects. The proposed outlay for public sector agencies under the Ministry of Textiles is shown in Table 14.18.

Table 14.18
Projected Investment in Public Sector Textile Industry During Fifth Plan Period

(in million Taka)

Public sector	1997/98	1998/99	1999/2000	2000/2001	2001/2002	1997-2002
BTMC	40.20	62.00	66.00	75.36	45.20	288.76
BHB	76.60	102.60	157.40	137.10	61.15	534.85
BSB	19.20	16.20	15.90	16.30	17.50	85.10
DOT	398.65	335.10	326.25	152.25	102.75	1,315.00
MOT	35.60	32.80	4.84	5.25	4.75	83.24
Total	570.25	548.70	570.39	386.26	231.35	2,306.95

14.11.3 At present there are 31 textile mills in the public sector. Most of them are very old and technically out-dated to produce good quality yarn and grey fabrics. All the public sector textile mills are running at loss due to some inherent problems like low capacity utilisation, irregular repair and maintenance, lack of managerial efficiency, excess manpower, high cost of production, etc. Thus replacement of machinery to increase production and meet needs for the export quality fabrics is essential for increased value addition and employment generation for RMG.

14.11.4 Investment Outlay for Jute Industry: In order to achieve the objectives and goals of the Fifth Five Year Plan for jute manufacturing industries under the purview of the Ministry of Jute, an investment outlay of Tk.3,064.57 million at 1996/97 prices has been provided for; of this Tk.435.34 million has been projected for the public sector and Tk.2,629.23 million for the private sector. Agency wise financial outlay for public and private sectors in jute industry including spill-over and new programmes has been shown in Table 14.19.

Table 14.19
Projected Outlay of Jute Industry During Fifth Plan Period

Agency	On-going Projects	New Projects/Programmes	Total Jute Industry
	Amount	Amount	Amount
(in million Taka)			
A. Public Sector			
1. Ministry of Jute	56.00	6.26	62.26
2. Bangladesh Jute Mills Corporation	30.00	121.20	151.20
3. Department of Jute	150.00	31.30	181.30
4. Bangladesh Jute Research Institute	-	40.58	40.58
Sub-Total (A)	236.00	199.34	435.34
B. PRIVATE SECTOR			
1. Bangladesh Jute Mills Association	-	1,200.00	1,200.00
2. Bangladesh Jute Spinners Association	-	717.77	717.77
Sub-total (B)	-	1,917.77	1,917.77
C. Small & Cottage Industries.	-	711.46	711.46
Total (A+B+C)	236.00	2,828.57	3,064.57

14.12 Total Investment Outlay Under Ministry of Industries: An outlay of Tk.6729.60 million including Tk.2,200.00 million for spill-over projects and Tk.4,529.60 million for new projects has been made in the public sector under the Ministry of Industries. Agency wise outlay is mentioned in Table 14.20.

Table 14.20
Public Sector Investment Outlay of Agencies under Ministry of Industries
(1997-2002)

Name of Corporation/ Agency	Outlay for Spill-over Projects	Outlay for New Projects	Total Outlay
(in million Taka)			
Public Sector Agencies			
BCIC	1,040.00	3,883.37	4,923.37
BSEC	150.00	212.00	362.00
BSFIC	-	297.00	297.00
BSCIC	1,000.00	89.89	1,089.89
BITAC	-	31.79	31.79
BIM	10.00	4.85	14.85
NPO	-	6.70	6.70
Patent Office	-	4.00	4.00
Total	2,200.00	4,529.60	6,729.60

14.13 Investment and Employment Target of EPZs: During the Fifth Plan implementation of the policy packages will be closely reviewed and monitored and necessary support services will be provided to attract investors with the ultimate objective of generating more employment opportunities in EPZ areas and also to boost up export. The projections that have been made for the Fifth Plan, with this end in view, are shown in Table 14.21.

Table 14.21
Expected Investment and Employment in EPZs by 2001/2002

Zones	No. of Industries	Investment (million US dollar)	Employment (nos.)	Yearly Export (million US dollar)
Chittagong EPZ	110	350	50,000	600
Dhaka EPZ	90	300	40,000	500
Gazipur EPZ	150	400	60,000	700
Mongla EPZ	100	300	40,000	500
North Bengal EPZ	90	300	40,000	700
Total	540	1,650	230,000	3,000

Source : Bangladesh Export Promotion Zone Authority (BEPZA)

14.13.1 At the end of Fifth Plan 540 industrial units with a total investment of \$ 1,650 million are expected to be established and 230,000 jobs are expected to be created. The yearly expected export at the terminal year of the Plan is estimated to be \$ 3 billion.

14.14 Investment Outlay: An outlay of Tk. 1060.48 million including Tk. 500.00 million for spill over projects and Tk. 560.48 million for new projects has been provided in the Fifth Plan for the EPZ sub-sector.

14.15 Trade and Export Promotion: Within the broad framework of the export development strategy, the main objectives of the export sub-sector are as follows :

- a. to develop marketability of exportables through product diversification and quality improvement;
- b. to establish backward linkage with export oriented industries and service sectors towards utilisation of more local materials;
- c. to attract increased number of entrepreneurs for setting up of export oriented industries and encourage them through incentive packages;
- d. to expand and consolidate existing markets and also create new markets for Bangladeshi exportables; and
- e. to further narrow down the gap between export earning and import expenditure through achievement of export targets.

14.15.1 In order to achieve the aforementioned objectives, the following strategies will be pursued:

- a. remove procedural and regulatory bottlenecks incompatible with the promotion of exports;
- b. provide progressive policy support comparable with those in other competing countries to enable Bangladeshi exporters to be on a sound footing in international trade;
- c. strengthen and improve institutional framework for providing better services to the exporters and the export oriented industries;
- d. improve supportive infrastructure services to improve efficiency and for smooth functioning of export related activities;

- e. adopt appropriate human resource development programme to improve entrepreneurial and managerial capabilities to boost production and marketing; and
- f. formulate and implement programmes to broaden and diversify the range of exportables.

14.16 Allocation for Trade and Export Promotion and Privatisation Programme: In order to achieve the objectives and to implement the programmes of the sub-sector during the Fifth Plan (1997-2002) an outlay of Tk.1,358.64 million has been made. Agency wise investment projection is shown in Table 14.22.

Table 14.22
Other Outlay for Trade Promotion Services

Name of Agencies	Total (in million Taka)
Export Promotion Bureau	1,087.86
Tariff Commission	1.44
Board of Investment	10.00
Ministry of Commerce	3.13
Privatisation Board (Cabinet Affairs Division)	41.25
Industries Division, Planning Commission.	12.25
Ministry of Jute	62.26
Ministry of Textiles	83.24
Ministry of Industries	3.13
Sadharan Bima Corporation	1.58
Statistics Division	12.50
Bangladesh Standard Testing Institute	40.00
Grand Total	1,358.64

14.16.1 Development of industries in the Fifth Plan will be a challenge for the private sector. If this challenge is successfully met, in the Fifth Plan period, the private enterprise will be the trail blazer in lifting the economy from the syndrome of poverty and unemployment in the next two plan periods.

CHAPTER XV

ENERGY

15.1 Introduction

15.1.1 Energy is essential for promoting living standards. It is a pre-requisite for economic growth and technological progress. In Bangladesh, per capita generation of electricity in 1995 was only 92 kwh which is lower in comparison to that in neighbouring countries. In view of the prevailing low generation and consumption of energy, efforts should be made to develop this sector in such a way that the needs of all sectors can be met adequately, efficiently and economically.

15.1.2 Electricity demand grew at an average rate of 11 per cent per annum during 1972-94; per capita generation increased from 15.6 kwh in 1973 to 92 kwh in 1995. Notwithstanding, the progress made to date, only about 15 per cent population have access to electricity.

15.2 Review of Past Development

15.2.1 During the War of Liberation, power installations suffered extensive damage. As a result, at the worst case, peak demand dropped to 30 MW from the pre-liberation level of 225 MW (1970). So, after independence the immediate problem was rehabilitation of power supply. By the end of 1972-73, a rehabilitation and development programme was undertaken in the First Five Year Plan (1973-78). However, because of the shortage of fund the programme was carried over to the Two Year Plan (1978-80). Several projects, initiated before the Liberation War were completed and a number of new projects were undertaken during the periods. As a result, installed generation capacity increased to 822 MW from 545 MW, while the peak demand rose to 462 MW from 222 MW.

Table 15.1
Power Development During 1972-96

Items	1972	1973	1975	1980	1985	1990	1995	1996
Installed Capacity (MW)	550	608	752	822	1,141	2,352	2,908	2,908
Effective Generation (MW)	469	455	557	625	1,018	1,834	2,133	2,105
Maximum Demand (MW)	183	222	396	462	887	1,509	1,970	2,087
230 kV Transmission Line (Km)	-	-	-	-	179	250	419	419
132 kV Transmission Line (Km)	828	828	1,395	1596	1,971	2,235	2,469	3,017
66 kV Transmission Line (Km)	167	167	167	167	167	167	167	167
Distribution Line(Km) (33 kv & below)	9,010	9,686	17,003	20,256	34,796	69,731	103,540	121,817
No. of Consumers	254,584	277,884	403,518	529,660	848,152	1,670,137	2,766,765	3,090,829
Per Capita Generation (kwh)		15.6	22.9	27	46	70	92	95

15.2.2 To reduce the gap between demand and generation capacity, the Second Plan (1980-85) undertook a rapid expansion programme. The most important achievement during this period was the construction of the East-West electrical inter-connector which enabled the transfer of gas-based low cost power from the east to the west. Five power generation plants having a total installed capacity of 330 MW were completed during this period. But generation capacity still lagged behind the demand. The main constraint to the expansion of power supply was shortfall of resources coupled with a huge system loss and a slow response to tariff adjustment against rising fuel cost. By the end of the Second Plan, the system loss stood at 37.5 per cent. An investment programme of Tk. 14,370 million at 1979/80 prices was undertaken. The actual investment was Tk. 20,970 million at current prices. The Second Plan also pursued a policy of substituting imported fuel by natural gas. A significant progress was made in this direction. By the end of 1984/85, total number of electricity consumers stood at about 964,000 compared with 522,000 in 1979/80. Table 15.1 shows the progress of power development in the country during 1972-96.

15.3 Overview of Fourth Plan

15.3.1 Ensuring supply ahead of demand is the ideal situation in case of electricity for meeting manufacturing, irrigation, commercial and domestic needs of any economy. However, it was not possible to do so in Bangladesh. Against a peak demand of 1640 MW in 1990/91 and 1970 MW in 1994/95, the installed capacity was only 2352 MW and 2908 MW respectively. The operational capacity (2133 MW) was again interrupted by occasional power outages owing to fluctuations in gas pressure, transmission and distribution faults. These caused enormous losses to industrial production and commercial activities. Irrigation suffered relatively less due to its use of diesel power and electricity supplied by REB in off-peak hours.

15.3.2 Electricity generation, transmission and distribution require large financial investment. Although Bangladesh has considerable gas reserve and promising potentials, due to high system loss, large account receivables, poor management and inability to rationalise tariff rate and introduce other reforms, concessional loan for the power sector from the multilateral development partners was not available in the Fourth Plan period. Consequently, needed investments for generation, transmission and distribution of electricity could not be made during 1990-95. Hard term suppliers' credit and inadequate government resources made it possible to add only about 581 MW of generation capacity in the following power plants during the Fourth Plan Period:

a.	Raozan (Chittagong) Power Plant (1st unit)	210 MW
b.	Sylhet Combined Cycle Power Plant	90 MW
c.	Baghabari Power Plant	71 MW
d.	Ghorashal Power Plant (5th unit)	210 MW

15.3.3 However, due to non-completion of scheduled rehabilitation of some power stations, generation capability decreased by 271 MW and about 11 MW capability was retired during the period. The net capacity increase was thus 299 MW. In addition, reduced gas supply caused shut-down of some power stations resulting in lower operational supply of electricity.

15.3.4 Organisational changes were made in the area of transmission and distribution of power in the country with BPDB entrusted with generation, transmission and distribution in urban areas, DESA with distribution of electricity in the greater Dhaka area and REB with distribution in the rural areas. Power generation and distribution was opened to both local and foreign private investments. To this end, a Power Cell was created to facilitate private sector investment in electricity production and distribution. A Rural Power Company (RPC) was set up for generation and supply of power exclusively to the REB. Concrete results of these measures are expected during the Fifth Plan period.

15.4 Fourth Plan Targets and Achievements

15.4.1 The Fourth Plan was formulated with a public sector allocation of Tk. 64,500 million at 1989/90 prices for the power sector. This allocation was inadequate in relation to the physical targets set in the Plan document. Due to shortage of both local and external resources, the Plan allocation as well as Plan targets had to be revised. The revised allocation was Tk. 45,360 million at 1989/90 constant prices against which Tk. 67,480 million was spent at current prices. Major targets as well as the achievements during the Plan period are shown in Table 15.2.

Table 15.2
Targets and Achievements of Power Sector During Fourth Plan

Agency	Particulars	Actual Position in 1989/90	Fourth Plan Target	Achievement	
				New Addition during Fourth Plan (1990-95)	Cumulative Position in (1994-95)
BPDB	Installed Capacity (MW)	2,352	2,878	581	*2,908
	Capability (MW)	1,834	2,743	581	**2,133
	Transmission line (km) 230kv, 132 kv, & 66 kv	2,503	3,151	552	3,055
	Grid Substation capacity (MVA) 230kv, 132kv & 66kv	4,150	2,621	2,369	6,519
	Distribution line km (33 kv & below)	30,256 (Excluding DESA)	36,734	4,437	34,693
	Consumer connection (No.)	850,438	1,050,000	225,296	1,075,734
REB	Distribution line km	35,333	61,188	29,853	65,186
	Electrified village (Number)	8,545	14,530	7,939	16,484
	Consumer connection (No.)	495,565	962,962	679,006	1,174,571
DESA	Transmission line (km) 132kv	221	-	104	325
	Grid Substation Capacity (MVA)	433	-	874	1,307
	Distribution line km	5,511	6,765	1,995	7,506
	Consumer connection (No.)	324,134	570,000	192,326	516,460

* 2352 MW+581 MW new - 25 MW retired/standby = 2908 MW

** 1834 MW+581 MW new - 11 MW retired - 271 MW derated/decrease for maintenance & rehabilitation = 2133 MW

15.5 Operational Performance During Fourth Plan

15.5.1 Load demand : The forecast peak demand of 2,485 MW for the terminal year of the Fourth Plan could not be met due to shortage of available generation capacity. The peak demand served by the end of the Plan period was 1970 MW. This gave an annual growth rate of 4.8 per cent.

15.5.2 Energy generation : Energy generation could not reach its target. The targeted generation in the Plan period (1990-95) was 55,735 GWh and the achievement was 46,962 GWh (84 per cent). The achievement in the final year of the Plan period was 10,806 GWh against a target of 13,577 GWh. Because of shortage of available generation capacity as stated earlier actual demand could not be met.

15.5.3 Energy sale : Electricity sales also remained at a low level due to high system loss and for want of adequate generation throughout the period. The energy sale in the final year (1994/95) of the Fourth Plan was 8,371 GWh (82 per cent of target) against a target of 10,183 GWh.

15.5.4 System loss : The system loss in BPDB (including DESA) and REB was 41.11 per cent and 16.27 per cent respectively in the first year (1990/91) of the Fourth Plan. The system loss of DESA in 1991/92 was 35.55 per cent. The combined system loss envisaged in the Fourth Plan was 25 per cent. To reduce the system loss some measures such as creation of Dhaka Electric Supply Authority, introduction of incentive/punishment scheme to improve overall performance and introduction of new commercial operation system were taken. These

measures brought some improvement, but not up to the expectation. The system loss of BPDB, REB and DESA came down to 22.54 per cent, 15.04 per cent and 30.00 per cent respectively in June 1995. These figures are based on generation/purchase and sale of energy by individual entities. In June 1995, BPDB's gross generation was 10,806 million units and sale was 8,371 million units. Purchase and sale by DESA in the same period were 4,162 and 2,913 million units respectively, and by REB 1,199 and 1,018 million units respectively. This warrants considerable improvement in this area.

15.5.5 System imbalance : System balance could not be ensured during the Fourth Plan. Because of non-availability of loan from development partners, the on-going projects suffered. No new power projects (except those under suppliers' credit) could also be started and the scheduled rehabilitation programme of some existing power stations could not be undertaken. The expansion and distribution system as envisaged in the original Plan document also slowed down. Some surplus generation capacity could not be utilised fruitfully due to bottlenecks in the grid-stations/sub-stations and shortage of gas supply.

15.5.6 System reliability : Five Power stations with a total generation capacity of 581 MW were put into operation during the Plan period. A few units were also put into operation after rehabilitation in the terminal year. Still there was shortage of generation capacity. Consequently, load-shedding was resorted to. The annual load-shedding duration ranged from 113 hours in 1991 to 763 hours in 1995. The total load-shedding over the Plan period was 2,844 hours (6.49 per cent of total duration of the Plan period), i.e., on an average about 24 days per year. The reason for load shed of DESA was tremendous load growth in the industrial and commercial sectors. As a result, the system reliability during the Plan period was not satisfactory.

15.6 Power Sector Reforms

15.6.1 An inter-ministerial working group was constituted on the 3rd February, 1993 to review the necessity and feasibility of private investment (along with public sector) in the power sector. It transpired to the working group that mere private investment in power generation is not the solution for the power sector to come out of the whole gamut of problems and deficiencies in the sector. Given the magnitude of the inefficiencies and the sector's large capital requirement, the working group felt that there was a need to undertake basic reforms to address fundamental problems in the sector. The working group reviewed operational, structural and other deficiencies of the sector, examined various options with regard to reforms and emphasised the necessity for private investment and participation on an equal footing in the power sector and finally recommended the reform programme to be undertaken.

15.6.2 Institutional issues : Power generation and its supply have remained a state monopoly. The government owns, operates and regulates the power sector entities. This has sometimes resulted in overlapping and undemarcated responsibilities with lack of accountability in terms of sector entities, operational performance and service standards. As a result, the performance of the utilities remained far from satisfactory.

15.6.3 The responsibilities for generation, transmission and a large part of distribution of electricity are integrated and vested in the same authority. This makes it difficult to identify the areas of poor performance. All policy decisions/approvals involving planning and installation of additional plants, recruitment of personnel, pay and allowances, major procurement and rehabilitation are taken by the administrative ministry. Both BPDB and

DESA carryout execution. Opening up generation for the private sector, keeping transmission and distribution facilities in the public sector does not really attract private investment.

15.6.4 Management issues : Major impediments to BPDB's and DESA's efficient operations include lack of management and commercial independence and an unclear definition of the corporate structure and responsibilities.

15.6.5 Lack of accountability and discipline among the employees of BPDB and DESA are major constraints. Rivalry of trade unions affiliated to different political parties makes the environment even more difficult in BPDB and DESA. Incentive/punishment schemes have been introduced in both the entities to improve the situation but the results remain yet to be seen and marked.

15.6.6 The performance of management of PBS(REB) has been better. This can be partly attributed to transparent operating procedures that were designed before the formation of the organisation. There is no labour union in REB/PBSs. There is no incentive for good performance and also no punishment for the poor performers as the PBS is based on cooperatives.

15.6.7 Financial and economic issues : The present tariff level is low in relation to the financial requirements of the operating entities. BPDB's present average tariff is only about 61 per cent of the long run marginal cost (LRMC). Further, both PDB and DESA provide implicit subsidies to the PBSs through a bulk supply tariff which is about 52 per cent of LRMC. All these adversely affect the financial viability of the utilities. Some categories of consumers enjoy low tariff at the cost of those in the productive sector.

15.6.8 Since the power supplying entities have turned to be financially non-profitable because of inadequate tariffs, high system loss and low collections, investment from own resources as well as from the development partners has become insignificant. The fund requirements in the power sector are large but there are competing demands on government resources constraining public investment in this sector. During the Fourth Plan period, the estimated investment need was Tk. 69 billion at 1990 constant prices, against which the allocation was only Tk. 45 billion. The investment requirement in power sector (both public and private) during the Fifth Plan period is estimated at Tk. 117.36 billion at 1996/97 constant prices.

15.6.9 Technical issues : Power supply is constrained by shortage in generation capacity and inadequate transmission and distribution system. The problem has been compounded by the shortage of gas supply. As a result, BPDB has to shed loads during peak hours through out the country.

15.6.10 REB was created to extend distribution of electricity to the rural areas through PBSs. However, in absence of a clear-cut demarcation of service areas, problems have arisen in the transfer of 33/11 kv sub-station lines and consumers from BPDB and DESA to the PBSs. Further, in areas served by PBSs, there are still 'pockets' of urban centres that are still served by BPDB/DESA.

15.7 Operational Performance During 1995/96 and 1996/97

15.7.1 During the period of July '95 to June '97 no new generation capacity was added to the system, that is the installed capacity remained at 2908 MW, the same as of 1994/95. The Barisal- Patuakhali 132 kv line (37 km) was energised during this period. A total of 2366 km distribution line (33 kv, 11 kv & below) was added to the system raising the length of the

distribution line to 37,059 km through implementation of various distribution projects. The consumer number in BPDB system increased to 1,210,132 in June 1997 from 1,075,734 in 1994/95.

15.7.2 Load shedding continued during the period of 1995/96 and 1996/97 due to shortage of available generation capacity. For this, actual peak demand could not be supplied. As per PSMP of 1995 the projected peak demand was 2419 MW in 1996/97. But the peak demand supplied was only 2114 MW (10.07.1996). During this period load shedding varied from a minimum 10 MW to a maximum 674 MW. System loss in BPDB system decreased marginally. During 1995/96 and 1996/97 the ADP allocation and (provisional) expenditures for BPDB were as follows:

Table 15.3
ADP Allocation to and Expenditure of BPDB During 1995/96-1996/97

Fiscal Year	(in million Taka)			
	Revised ADP	Allocation	Expenditure	(provisional)
	Total	Project Aid	Total	Project Aid
1995/96	5,929.5	2,770.2	7,433.0	3,599.4
1996/97	6,201.7	2,000.4	4,790.4	1,597.6

15.8 Need for Major Reforms

15.8.1 BPDB has been trying for the reduction of system loss for the last 10 years which persisted between 41 and 31 per cent. BPDB was reorganised and DESA was created for performance improvements but desirable results have not been achieved because DESA was created without addressing the fundamental institutional deficiencies. Although there have been some improvements, it is not expected that desirable results can be achieved and sustained without major reforms in the power sector.

15.8.2 The objectives of the proposed power sector reform programme will be to:

- a. achieve commercial characteristics and efficiency in the power sector so as to reduce system loss, attain financial viability in order that it no longer requires subsidies;
- b. increase production and distribution of electricity for the vast majority of the population of Bangladesh which is yet unserved and to meet the growing demands of industry, commerce and agriculture;
- c. increase the operating efficiency of the existing public sector entities through greater competition, managerial autonomy and accountability and full commercialisation/corporatisation;
- d. improve the reliability and quality of the existing power supply system; and
- e. create an environment which will attract private capital and entrepreneurs, both domestic and foreign, to supplement public sector investments and initiatives in improving the performance of the sector.

15.9 Options for Reforms

15.9.1 Cost centres : The recent successful experiences in many countries offer a variety of options for reforms starting with the establishment of separate cost and/or profit centres within the existing utilities for commercialisation and corporatisation, and eventually, to complete privatisation. Along with it, it is also possible to contract out specific activities of the utility to private entrepreneurs (e.g. meter reading, billing, collection, routine and periodic maintenance, etc.) or to offer long-term franchises to manage and operate some substantial

portions of the utility's assets (e.g., a generating plant, a portion of the distribution network, etc.). It is essential that regardless of ownership (public or private), the utility has complete, detailed and up-to-date information on the cost of owning and operating the various parts of its business. No reform is possible without the establishment of separate cost centres for all identifiable and separable parts of the utility.

15.9.2 Unbundling : Once a decision is taken on the establishment of the cost centres, the next set of options to look at will be the structure of the utility (also known as unbundling). The utilities can be restructured (or unbundled) along functional lines with generation, transmission and distribution being operated by separate entities. For example, BPDB can be restructured into separate entities - one handling generation, another operating the transmission system, and a separate and independent company responsible only for distribution. This has recently been introduced in the UK. Only in high state of development, this system can work. Alternatively, distribution can be handled by four zones within the BPDB while DESA and REB/PBSs can continue to operate the distribution system in their respective areas. In this event, rationalisation of distribution entities will be needed. PBSs may operate as they are doing now under their area boards. A further alternative will be to separate the generation and transmission functions from distribution and operated by a single company (eg; Thailand). The principal advantage of restructuring along functional lines will be in appraising cost of generation, transmission and distribution separately which can be reflected in contracts between the functional entities. In addition, if the power sector is structured around functional areas, it will attract private capital to one or more of these functions where the expected returns will be high or the risks relatively low. For instance, while the private entrepreneurs may not like to invest in the existing utilities as a whole, they may wish to invest in new generation facilities. It is assumed, however, that an enabling investment environment which includes a detailed and transparent legal and regulatory framework will be in place to encourage and attract private investment. Investments by the private sector will allow the government to divert funds to meet other socially pressing objectives.

15.9.3 Following the decision to establish cost/profit centres and restructuring the entities along functional lines, the logical next step will be to corporatise the new entities. For each new functional entity, a company can be formed as a public limited company with a clear demarcation of the roles and responsibilities of the government (ownership), the board of directors (policy and monitoring), and the management of the company (operations). The board members should be appointed for fixed terms (with a possibility for renewal). Some of the Board members, including the chairman, should be from the private sector and compensated properly in accordance with private sector practices. The board should appoint the senior managers of the company and delegate to them full managerial autonomy for their day-to-day operations. Through performance contracts, the board (and through them the managers) should be held accountable for efficient operations.

15.9.4 Corporatisation is normally a preparatory step for increased private participation. While there are many ways to achieve this, the most common one can be through the sale of shares in the company. The advantage of this, at least from the government's standpoint, is that while the government continues to retain control of the companies, private capital is mobilised to support the government's development objectives for the sector. However, in order to attract private capital in this manner, it is essential that a capital market exists and that these companies are properly managed and earn a reasonable return on their investments. Another frequently used method for increasing private participation is to contract out specific

activities of the utility to private entrepreneurs or to offer long-term franchises to manage and operate some portions of the utility's assets.

15.9.5 With successful corporatisation and gradual increase in private participation, the final step to be considered in the reform process is the full privatisation. For an existing utility, this will mean an outright sale of its assets. For expansion of the system, this can take several forms such as build-own-operate (BOO) scheme, hire/purchase agreements, etc.

15.9.6 An important point to consider, prior to starting the reform process, is the need to create an appropriate and transparent regulatory system. It should preferably be in place prior to the unbundling exercise so that the system grows along with the implementation of the reform process, while facilitating the same.

15.10 Recommended Reform Programme

15.10.1 In order to overcome the constraints encountered in the viable/desirable operation of the power sector and to achieve the objectives enumerated above, various options to reforms can be considered. Options for reform will be concentrated on the following areas:

15.10.2 Restructuring of DESA : The corporatised entity should be endowed with appropriate management and financial autonomy and commercial independence so that accountability and monitoring of performance can be ensured and improved.

15.10.3 The new company should have its own terms and conditions of employment and have the right to select employees. The present employees of DESA who do not get employed in this restructured company should be provided with appropriate severance package.

15.10.4 Restructuring of BPDB : BPDB should be restructured along the functional lines. In the first phase, the functions of generation and transmission should be separated from those of distribution of electricity and two separate corporatised entities, one for carrying out generation and transmission functions and the other for carrying out distribution functions in those areas that are now being served by BPDB, should be established. These two (new) public limited companies should be formed under the existing Company Act and the ownership should remain with the government. These new companies will have the same features as those of the company to be created out of DESA as described above. In the longer term, generation and transmission functions may also be needed to be separated.

15.10.5 Rural electrification : The rural electrification programme through the co-operatives has been fairly successful and, therefore, should continue without changing the structure. However, its area of operation should be rationalised with that of the proposed distribution companies so that duplication of investment can be avoided, services can be improved and the utilities may become viable. The recent government decisions on the demarcation of service areas of BPDB, REB and DESA should be reviewed and the following criteria may be considered for rationalisation of distribution areas:

- a. The supply area should be continuous and one utility should not have pockets of supply areas within another utility, so that optimum utilisation of distribution facilities may be ensured and manpower for operation and maintenance may be reduced.
- b. The supply area should be of sufficient size to facilitate planning of efficient distribution network.
- c. The utilities/distribution units should have a good consumer mix.

15.10.6 Regulatory framework and change of laws : With the present undifferentiated role of the government as owner, operator and regulator, there is a little regulation with respect to sector entities performance standards and service codes. On the other hand, the tariffs are not adequately related to economic and financial requirements. Recommendations have been made to separate the operation on commercial basis and to attract private investment. In order that the consumers are ensured of an adequate supply of electricity at a reasonable cost, the operational safety is ensured and the power utilities remain economically and financially viable, an independent regulatory body should be established. To begin with, the regulatory body may be attached with the Ministry of Energy and Mineral Resources (MEMR). The regulatory tasks should include, among others, the following :

- a. framing of rules and codes of practice for operation and maintenance;
- b. establishment of performance standards and uniform system of accounts;
- c. approval of construction standards for safe installation;
- d. approval of tariffs;
- e. ensuring enforcement of industry standards, public safety, as set forth under (a), (b) and (c) as well as demand management; and
- f. issuing exclusive service franchises to the distribution companies, either public or private, and license to private generators.

This will require the existing laws creating the BPDB and DESA as well as the Electricity Act to be amended.

15.10.7 Tariff regulation : Tariffs are inadequately related to economic and financial criteria. BPDB/DESA are financially burdened with the cost of providing subsidised electricity supply to PBSs, the size of lifeline block is excessive, and their tariff adjustment process is ad hoc and non-transparent.

15.10.8 To support the development of a viable and self-sustaining power industry in Bangladesh, tariff setting needs to be rationalised, which can be achieved by having a regulatory body with the clear terms of reference. This regulatory body (initially attached to MEMR) will set tariffs in accord with explicit economic and financial criteria. Specifically, the following aspects will need to be addressed :

- a. **Tariffs :** In view of the possible formation of separate generation, transmission and distribution companies, a tariff study should be carried out on long run marginal cost basis to find out the cost of supply at different voltage levels, at various geographical locations and consumer classes. The tariff study will also design the structure including retail tariffs considering social aspects but avoiding distortion as much as possible. The size of the present lifeline block is too large. It should be either reduced to restrict its application to poor consumers or totally abolished.
- b. **Transparency :** To improve financial discipline, transparency in financial relations and to measure the true financial relationships between the generation/ transmission/ distribution companies, subsidies between various categories of utility companies should be made more explicit. Eventually, any such subsidy to PBSs or for meeting public service obligations, if justified, should be funded by the government.
- c. **Indexation :** To reduce uncertainty and ensure predictability, the regulatory body may consider indexed rate regulation. One major advantage of indexed regulation is that, after the initial or base prices are established, adjustments occur virtually automatically in accordance with some defined index (e.g., fuel prices, currency values, discounted inflation rate, etc.) that have been approved by the regulatory body.

15.10.9 Private participation : In view of the large capital requirement in the power sector and limitations of government fund, private sector investment will be necessary for rapid development of the power sector. In order to attract private sector participation, actions on the following fronts should be taken:

- a. **Generation :** Specific power generation projects identified at the national level will be offered for private investment. Competitive tenders on the basis of Build-Own-Operate (BOO) or Build, Operate and Transfer (BOT) will be invited. The government may also negotiate with the private parties who will express interest in investing in generation projects.
- b. **Distribution :** The government will invite private parties, including co-operative societies of the utility sector employees, to participate in the distribution of power in one or more localities on an experimental basis. In doing so, careful evaluation of various proven modalities for participation (e.g., franchise, contract, etc.) will have to be made.
- c. **Contracting of services :** The government will consider contracting out some functions currently performed by BPDB and DESA, particularly meter reading, billing and collections.
- d. **Wheeling arrangement :** The electricity generated by private generators may be supplied to the grid system of the Generation and Transmission Company on agreed terms and conditions. The private/public generators may also sell directly to large consumers through the transmission and distribution facilities of other distribution companies provided the facilities are adequate and the commercial terms and conditions of such wheeling arrangements are acceptable to all concerned.

15.10.10 Some of the steps already initiated/implemented towards privatisation and reform programmes are briefly outlined below:

- a. **Implementation of power sector reform :** Power sector reform programmes are being implemented. Some of the proposed reform programmes have already been initiated by the utilities. Power Cell has already prepared the Private Sector Power Generation Policy of Bangladesh which was approved by the government. The Cell has also prepared standard security package document, that is, Implementation Agreement (IA), Power Purchase Agreement (PPA) and Fuel Supply Agreement (FSA) for Independent Power Projects. A study on re-structuring of the power sector has also been completed and a final report with recommendation of reforms proposed to be undertaken has been prepared. A new tariff structure based on long run marginal cost of supply in the restructured electricity industry has been proposed to be implemented.
- b. **Power grid company of Bangladesh :** PGCB, a subsidiary company under BPDB has been set up. Initially, it will build, own and operate the Comilla-Meghnaghat-Rampur and Meghnaghat-Haripur 230 kV transmission line and related grid substations. In course of time, all transmission assets of BPDB will be transferred to PGCB.
- c. **Dhaka electric supply company :** DESC, a new distribution company has been set up under Dhaka Electric Supply Authority. DESC will own and operate assets for the distribution network initially at Mirpur and in course of time all of DESA's distribution assets will be transferred to DESC.

- d. **Meghnaghat power company** : MPC has been formed. Installation of a 300-450 MW Combined Cycle Power Plant by private sector power investors on BOO basis is under process.
- e. **Rural power company** : RPC has been formed under Rural Electrification Board. Initially, a 60 MW Gas Turbine Power Plant will be installed and operated by RPC at Mymensingh.

15.11 Fifth Plan

15.11.1 In order to achieve an annual economic growth rate of 7 per cent, alleviate poverty and realise desirable socio-economic and human development, it is essential that the minimum electricity growth rate is maintained at a factor of 1.5 of GDP growth. Adequate and reliable supply of electricity at a reasonable cost is a pre-requisite to attain this goal. Hence, there is a great need and urgency to expand the electrification programmes. It is recognised that the pace of power development has to be accelerated in order to achieve the overall economic development projections of the country and avoid looming power shortages. Specially, for investment in expansion of industry, power development has become prerequisite.

15.12 Objectives

15.12.1 The development objectives of the power sector in the Fifth Plan period will be to :

- a. facilitate economic development through adequate and reliable supply of electricity at economic cost;
- b. ensure reliable and uninterrupted power supply through maximum utilisation of the existing capacities, adding generation capacities by optimising energy mix and balanced expansion of transmission and distribution network;
- c. reduce the cost of supply through implementation of least cost expansion plan and efficient system operation with a view to making the electricity available to the consumers at a reasonable price;
- d. make the utilities self-reliant through efficient management, reasonable restructuring of electricity tariff and favourable financial arrangement so that reasonable portion of capital expenditure can be financed out of internally generated funds;
- e. improve management and engineering capability of the utilities;
- f. raise resource management efficiency, reduce system loss and improve financial performance of the power sector;
- g. ensure environmentally sound, sustainable power development with minimum damage to environment;
- h. encourage private sector participation in power development;
- i. expand power supply in the rural areas to boost rural economy and thereby alleviate poverty and ensure women's participation in the rural areas; and
- j. give special attention to meet the power shortage in the north-western region and to line up power connection to deep tubewells installed for agricultural use.

15.13 Strategies

15.13.1 These objectives will be achieved through a package of policies, strategies and necessary institutional reforms which, *inter alia*, will include:

- a. generation, transmission and distribution of more electricity at least cost through optimisation of fuel mix; to this end special attention will be given to use coal deposits;

- b. augmentation of the capacities through rehabilitation of power plants, transmission lines and grid substations;
- c. balancing of transmission and distribution networks to match generation capacity and extension of transmission and distribution networks to connect growth centres, both urban and rural, and to meet irrigational needs;
- d. addition of more 230 kv and 132 kv transmission lines for efficient transfer of power from generating stations to the major load centres;
- e. encouraging private investment in power sector, particularly as joint venture or on BOT/BOO principles through various incentive packages; to meet immediate need in 2 or 3 strategic locations public sector generation will be taken up if private investment is found lacking;
- f. generation of nuclear power as an appropriate option for a reliable, economic, safe and long term generation mix in consideration of the inadequacy of indigenous fuels for meeting electricity demand on a medium to long term perspective; Rooppur Nuclear Power Project has been included in the public sector development programme for many years, it has not been possible to implement it mainly due to constraints of financing; though the initial cost of a nuclear plant is high (estimated to be about 40 to 50 billion taka for a 600 MW plant), its low operation and maintenance cost makes the average generation cost comparatively cheap; efforts will be made to start implementation of the project with a 600 MW nuclear power plant during the Fifth Five Year Plan; the private entrepreneurs will also be encouraged to participate in the implementation of the project;
- g. dissemination of various forms of renewable energy technologies like solar, wind and mini-hydro, specially in rural areas and other remote and isolated location of the country;
- h. development of biogas: biogas technology is believed to have good potentials as a source of energy in Bangladesh. BCSIR has developed technologies though their dissemination has been very limited; during the Fifth Plan, efforts will be made to popularise the use of biogas technology in the country;
- i. introduction and dissemination of improved cooking stove: replacement of traditional stoves by an improved version having better energy conversion efficiency will help conserve biomass in the rural areas; moreover, use of the technology in the urban area, will help reduce consumption of fuel wood, thereby reducing deforestation; technologies are available and efforts will be made to popularise them during the Fifth Plan;
- j. application of new and renewable energy technologies; and
- k. making appropriate institutional, fiscal, legal and administrative arrangement for the successful implementation of the above strategies.

15.14 National Energy Policy

15.14.1 The objectives of the National Energy Policy (NEP) are to:

- a. provide energy for sustainable economic growth so that the economic development activities of different sectors are not constrained due to shortage of energy;
- b. meet the energy needs of different zones of the country and socio-economic groups;
- c. ensure optimum development of all the indigenous energy sources;
- d. ensure sustainable operation of the energy utilities;
- e. ensure rational use of total energy sources;

- f. ensure environmentally sound sustainable energy development programmes causing minimum damage to environment; and
- g. encourage public and private sector participation in the development and management of the energy sector.

15.15 New and Renewable Energy Technologies

15.15.1 Biomass : Electricity coverage being only 15 per cent of the population and natural gas reaching only 3 per cent of the households, biomass is the major source of energy in Bangladesh. Over three-fourths of the total population of the country depend on biomass for cooking, crop drying and winter heating. So in terms of population coverage, biomass stands most important of all energy sources. Biomass includes trees, crop wastes, cow dung etc. Unfortunately, Bangladesh does not have adequate supply of biomass due to low forest coverage, a large portion of the country being affected each year by natural calamities like flood, cyclone and river erosion. The present forest coverage is only around 17 per cent. However, using standard tree density criteria, the forest coverage comes down to only 7 per cent compared to 25 per cent which is usually considered to be the average a country should have to maintain energy and environmental balance. As response to this serious problem, social forestry, homestead forestry and linear planting (along roads, embankments and railways) have been given high priority in the public expenditure. The policies, programmes and projects undertaken to augment the supply of biomass have been mentioned in the forestry sub-sector. It can briefly be said here that afforestation on all available land has been a social movement in Bangladesh for over a decade and it can be said that, by and large, it has been successful. If the current trend can be sustained, it will largely offset the deficit in the supply of biomass for the majority of the population who are critically dependent on it. Along with social forestry, popularisation of improved cooking stove, bio-gas plants, and utilisation of solar energy, especially in the offshore islands, will contribute to both conservation of energy through more efficient use of biomass and increasing the supply of energy through solar power. Power sector policies, programmes and projects have, therefore, been aimed at this direction. The dominant role of biomass in the energy supply mix of the country is likely to continue.

Improved bio-mass fuel burning devices have been introduced in order to save bio-mass fuels and to improve the environmental conditions surrounding the energy consuming devices. Projects/programmes for improved stoves for urban cooking, rural cooking and improved devices will be undertaken for bio-mass fuel consuming industries. Necessary support and incentives will be made available to the entrepreneurs from the credit institutions. Action research programme, training programme, extension and dissemination programme will be provided. In addition to that, promotion of awareness about bio-mass fuel conservation and improved devices will be encouraged.

The government has laid emphasis on the development and augmentation of rural and renewable energy during the different Plan periods. Agencies like Rural Electrification Board (REB) and the Local Government Engineering Department (LGED) are involved in dissemination of various types of renewable energy technologies. The Department of Forest and other extension agencies are also involved in planned plantation with a view to not only improving the situation of forest coverage of the country but also in augmenting the supply of biomass on a long term perspective. The Grameen Bank and the NGOs like BRAC, Proshikha and others are involved in deployment of available technologies through their respective networks. REB as well as a number of private sector enterprises are involved in marketing of solar photo voltaic (PV) based technology.

Augmentation of bio-mass supply through intensive afforestation in especially selected locations like reserved forest as well as village and community forestry programmes has gained momentum. These programmes are being implemented by the related extension agencies. If sustained, this will have a significant impact not only on maintaining an acceptable level of forest coverage of the country, but also facilitate sustainable supply of fuel wood. Under energy conversion till date, 417 bio-mass plants including 198 of BCSIR have been set-up by various agencies. An elaborate programme of bio-gas plants technology diffusion was envisaged during the Fourth Plan period. REB and associated agency, under the technical guidance of BCSIR, will undertake the responsibilities for setting up of additional 5000 bio-gas plants in selected areas of the country.

15.15.2 Mini-hydropower : According to the report of the Working Committee on Mini-hydropower Generation of Bangladesh, there is potential for producing 10 GWh of electricity annually. Concrete steps will be undertaken during the Fifth Plan period to realise this potential.

15.15.3 Solar energy : The average daily solar radiation varies from 5.05 kWh/sqm in winter to 8.76 kWh/sqm in summer. At present solar energy is mainly used as a convenient and low cost means of drying crops, fish and salt. Some photo voltaic units have been installed in different parts of the country mainly for demonstration. Capital cost for solar photo voltaic technology for the generation of electricity being costly, its prospects are to be ascertained for specific end uses and locations. One immediate positive step to encourage use of solar energy will be to allow duty free import of photo voltaic cells.

15.15.4 Wind power : Average wind speeds in the country are low (less than 3 m/s). There is a prospect for wind power generation using low speed wind turbines in selected areas and for specific end-uses. In the Fifth Plan period a pilot project will be undertaken to use wind to generate power in a selected local area.

15.15.5 Tidal and wave power : The prospects of tidal and wave power in coastal areas need to be assessed. A feasibility study will be undertaken in the Fifth Plan period to find out ways and means to use tidal and wave power.

15.16 Load Management

15.16.1 The annual load factor of the national electricity grid is about 57 per cent. The characteristics of demand is such that the evening peak is very sharp. In order to improve the performance of the system, reduce investment as well as to rationalise the energy use, there is a need to undertake appropriate measures for the management of loads. Recently, the government has adopted some load management measures to reduce electricity consumption during peak hours such as early closure of commercial shops, prohibition of using irrigation pumps during evening peak hours, etc. These measures, however, are yet to be implemented fully.

15.17 Load Forecast

15.17.1 Power being the basic infrastructure for higher level of economic growth, the high demand forecast of 4051 MW by the terminal year of the Fifth Plan has been envisaged. To meet this demand, public sector investment will not be adequate. Considerable private investment will be needed. However, since other sectors of the economy cannot grow at the projected rate without necessary power supply, the public sector financial outlay may have to be adjusted upwards in the course of Plan implementation should there be inadequate response from the private sector for power generation. On the basis of the High Forecast, the

projected peak demand, generation capability and reserve margin up to FY 2002 are shown in the Table 15.4.

Table 15.4
Projected Maximum Demand for Power During Fifth Plan

Year	Maximum Demand (MW)	Generation Capability (MW)	Firm Capacity (MW)	Reserve Margin (MW)	Reserve Margin as per cent of Max. Demand (%)
1997/1998	2806	2813	2352	7	-
1998/1999	3109	3464	2983	355	11.42
1999/2000	3447	4342	3681	895	25.96
2000/2001	3736	5156	4196	1420	38.00
2001/2002	4051	5739	4779	1688	41.67

15.17.2 This projected maximum demand of 4051 MW will call for total generating capability of 5739 MW including reserve margin of 1688 MW by 2001/2002. A total of 3319 MW generation capacity is planned to be added to the system raising the installed capacity to 5875 MW. This will need an investment of around Tk. 100,000 million which can only be possible if the private sector power investors participate in power generation. Following completion of 8 projects already undertaken by the public sector (SL. 1-5, Table 15.5), capacity addition in the public sector during the Plan period will be 1389 MW only. This will leave a capacity gap of 1930 MW. This gap is expected to be filled up by private sector/ joint venture investments. In case, the private sector does not come forward in time, alternative ways and means will be devised in the shortest possible time to meet the anticipated demand.

Table 15.5
Projected Capacity Addition to Power Generation During Fifth Plan

Sl. No.	Name of the Power Plant	Fuel	Capacity MW	Expected date of commissioning
A	PUBLIC SECTOR			
1.	210 MW Ghorasal Thermal Power Station Extension (6th unit)	Gas	210	March, 1998
2.	210 MW Siddhirganj Thermal Power Station	Gas	210	March, 2000
3.	109 MW Haripur Combined Cycle Power Plant	Gas	109	March, 2000
4.	60 MW Shahjibazar Gas Turbine	Gas	60	FY 2000
5.	210MW Chittagong Thermal Power Station (2nd unit)	Gas	210	September 1997
6.	Sylhet 90 MW Combined Cycle Power Plant (2nd unit)	Gas	90	FY 2001
7.	Barapukuria 300 MW Coal Based Thermal Power Station	Coal	300	FY 2001-2002
8.	East Zone 2×100 MW Gas Turbine	Gas	200	FY 2001-2002
	Sub total : A		1389	
B.	PRIVATE SECTOR/ JT. VENTURE			
1.	4×100 MW Barge Mounted Power Plant	Oil/Gas	400	FY 1999
2.	Mymensingh 60 MW Gas Turbine	Gas	60	FY 1999
3.	100 MW Baghabari Gas Turbine	Oil/Gas	100	FY 2000
4.	Meghnaghat 450 MW Combined Cycle Power Station	Gas	450	FY 2001
5.	Haripur 360 MW Combined Cycle Power Station	Gas	360	FY 2000
6.	210 MW Khulna Thermal Power Station	F. Oil/Gas	210	FY 2002
7.	350 MW Power plants in west zone	Gas	350	FY 2000-2002
	Sub total : B		1930	
	Grand total : (A+B)		3319	

15.18 Physical Programme

15.18.1 The physical programme for the Fifth Plan includes 35 on-going projects and 30 new projects (excluding TA projects). The ongoing projects and some of the new projects will be completed and the benefit will be obtained during the Plan period. A 300 MW Barapukuria Coal Based Thermal Power Plant, a 300-450 MW Meghnaghat Combined Cycle Power Plant and four 100 MW Barge Mounted power plants will be taken up for implementation during the Plan period.

15.18.2 With the implementation of these projects, necessary additional facilities for generation, transmission and distribution will be created during the Plan period. Installed generation capacity is expected to go up from 2908 MW (June, 97) to 5875 MW at the end of the Plan period against the projected power demand of 4051 MW. This will have a reserve margin of 1688 MW (41.67 per cent) over the maximum demand. The generation programme includes 10 on-going projects and 5 new projects. Scheduled completion of the public sector projects will add 1389 MW of electricity by the terminal year of the Plan.

15.18.3 In the Fifth Plan, 627 km of 230 kv line and 847 km of 132 kv transmission line including 166 km second circuit stringing have been proposed. The Plan aims at expansion of 230 kv and 132 kv transmission lines and substations to remove bottlenecks in the transmission system. Transmission projects included in the programme have been tested by computer simulation for load flow, voltage drop and stability. The programme includes 3 on-going projects and 9 new projects. All on-going projects and 9 new projects are scheduled to be completed during the Plan period. A list of the Transmission Projects to be implemented during the Fifth Plan is shown in Table 15.6.

Table 15.6
Power Transmission Projects to be Implemented During Fifth Plan

Sl. No.	Name of the Project	Line Length (km)	Expected Year of Completion
1.	Rehabilitation, Renovation & Augmentation of Grid System incl. Ashuganj-Jamalpur 132 kv Second Circuit.	166	1999
2.	Comilla-Chittagong 230 kv Transmission Line Project.	150	1999
3.	Comilla-Meghnaghat-Rampura & Meghnaghat-Haripur 230 kv Transmission Line & National Load Despatch Centre.	110	2000
4.	Khulna-Ishurdi-Bogra-Barapukuria 230 kv trans. line & 132 kv line from Barapukuria to Saidpur & Rangpur.	367	2001
5.	Three Transmission Lines	95	
(a)	Thakurgaon-Panchagarh 132 kv single ckt line.	45	2000
(b)	Naogaon-Joypurhat 132 kv single ckt line.	40	2000
(c)	Chuadanga-Jhenaidha-Magura 132 kv single ckt line	73	2000
6.	Tangail-Madhupur-Jamalpur 132 kv single ckt line.	100	2001
7.	Dohazari-Cox's Bazar 132 kv second ckt stringing.	88	2001
8.	Chandpur-Comilla 132 kv second ckt stringing.	70	2000
9.	Kabirpur-Tangail-Shirajgonj 132 kv tr. line	85	2000
10.	Comilla-Bara Aulia 132 kv transmission line	140	1999
11.	Barisal-Bagerhat-Khulna 132 kv transmission line	110	2000
12.	Bhandaria-Mothbaria-Patharghata 132 kv transmission line	55	2000

15.18.4 Like the transmission sub-sector, thrust has been given to the distribution sub-sector in the Fifth Plan. Importance has been given to town distribution projects as well as the rural electrification projects. The secondary town distribution projects aim at meeting the fast growing demand in the urban areas, improving reliability and quality of supply and reducing system loss. In the distribution programme 7 on-going projects and 3 new projects of BPDB, 11 on-going and 7 new projects of REB, and 5 on-going and 2 new projects of DESA have been included in the Plan period.

15.18.5 The physical programme for the Fifth Plan aims at achieving a transmission line of 1408 km under BPDB and 66 km under DESA, and distribution line of 5,377 km under BPDB, 50,000 km under REB and 3714 km under DESA. The details of physical projections are shown in Table 15.7.

Table 15.7
Summary of Physical Projections for Power Sector During Fifth Plan Period

Agency	Particulars	Bench Mark Position (1996/97)	Projection (Additional)	(1998-2002) Cumulative Position
BPDB	Capability (MW)	2,148	3,319	5,739 *
	Transmission line (km)			
	230 kv	419	627	1,046
	132 kv	2,506	781	3,287
	Substation capacity (MVA)	6,505	1,940	8,445
	Distribution line (kv) 33 kv and below	37,059	5,377	42,436
	Consumer connection (No.)	1,250,000	3,00,000	1,550,000
REB	Distribution line (km)	85,111	50,000	135,111
	Electrified village (No.)	20,520	12,000	32,520
	Consumer connection (No.)	1,712,439	1,000,000	2,712,439
DESA	Transmission line (km)	511	66	577
	Distribution line (km) 33 kv & below	6781	3,714	10,495

* 2,148+3,319 (new) - 531 (net increase through maintenance & rehabilitation.) - 259(rtd.) = 5,739 MW.

15.19 Financial Programme

15.19.1 An investment outlay of Tk. 88,361 million including project aid of Tk. 58,275 million both at 1996/97 prices has been made in the public sector during the Fifth Plan for the implementation of the physical programme for the power sector. Agency wise break up of this allocation is shown in Table 15.8.

Table 15.8
Agency-wise Public Sector Financial Outlay For Power Development
(at 1996/97 prices)

(in million Taka)

	Name of Agency	Local Currency	Project Aid	Total
A:	Spill over projects			
	BPDB	7290	17648	24938
	REB	2891	6505	9396
	DESA	3466	5080	8546
	Sub-total	13647	29233	42880
B:	New projects			
	BPDB	7555	17683	25238
	REB	6731	8410	15141
	DESA	2153	2949	5102
	Sub-total	16439	29042	45481
	Total (A+B)	30086	58275	88361

15.19.2 In addition to ADP financing, resources will be raised through bonds to finance implementation of projects by PDB, DESA and REB.

15.19.3 The private sector is also expected to make substantial investment (to the tune of Tk. 29,000.00 million) both in generation and distribution of power during the Fifth Plan period. Of this amount, about 80 per cent is expected to be in generation and 20 per cent in transmission and distribution.

CHAPTER XVI

OIL GAS AND NATURAL RESOURCES

16.1 Introduction

16.1.1 Indigenous energy resources consist of known reserves of natural gas, limited hydro-electric power and traditional fuels coming from fuelwood, crop residuals and animal dung. About 55 per cent of the country's overall energy supply is in the form of traditional fuels with the balance being met by natural gas (24 per cent), imported oil and coal (19 per cent) and hydro-electricity (2 per cent).

16.1.2 The present per-capita consumption of non-renewable energy resources in Bangladesh is about 64 Kilogram of Oil Equivalent (KGOE) which is one of the lowest in the world. Per-capita energy use in KGOE is 123 in Sri Lanka, 236 in India and 267 in Pakistan. Of the total non-renewable energy consumption, about 60 per cent is derived at present from indigenous resources and the rest is met from imported petroleum and coal. Moreover, the entire reserves of exploitable indigenous primary energy resources are located in the east zone, thereby resulting in a gap in energy supply between the east and west zones. Mining of newly found coal in the west zone is expected to start by the turn of the century which will help reduce the gap partially. Of the various natural resources available, natural gas in particular :

- a. supplies primary commercial energy for electricity generation to accelerate the pace of agricultural and industrial development and reduces the kitchen drudgery at the level of individual households;
- b. helps in narrowing the deficit in the balance of payments by reducing import bill for oil, coal, etc.;
- c. mobilises resources for the national exchequer; and
- d. provides raw materials for the production of urea fertiliser and fuel for electricity generation.

16.1.3 The development of the oil and gas sector is vital for further strengthening of the national economy. Expansion of the energy sector since the 1980's is mainly attributed to increased natural gas production. Currently, natural gas accounts for about 70 per cent of the commercial energy consumption compared to about 35 per cent in 1980. The development of Bangladesh's natural gas resources has also contributed to the reduction in deforestation and to an increase in tax revenue for the government through the levies on gas sales. During 1985-1992, gas production increased at an average annual rate of about 10 per cent. It is estimated that minimum growth rate of about 10 per cent per annum in gas production will be required to meet the average GDP growth target of 7 per cent per annum during the Fifth Plan period. However, the existing gas infrastructure has limited capacity and needs to be expanded as per requirement. Additional investment is, therefore, required to enable Bangladesh to utilise its available gas reserves and to increase exploration activities for new gas and oil fields. For further long-term gas supply commitments, particularly for the planned power plants, the government is encouraging private sector participation in the oil and gas exploration activities through the Production Sharing Contract (PSC) with the International Oil Companies.

16.2 Potentials of Natural Resources

16.2.1. Natural Gas: Natural gas is currently the only indigenous non-renewable energy resource of the country which is being produced and consumed in significant quantities. Gas, the main source of commercial energy, plays an active role towards the growth of the economy. Currently, about 90 per cent of power generation is based on natural gas and the whole of the urea fertiliser requirements of the agricultural sector is met by using gas as feed stock. Natural gas output now accounts for about 70 per cent of the country's commercial energy supply. Current gas reserve (proven) has been estimated at about 22.90 TCF of which 13.60 TCF is considered as recoverable. So far 2.72 TCF has already been consumed and as of September 1996, the recoverable reserve was 10.87 TCF. New discovery in Sangu (offshore), Shahbazpur, Shaldanadi and other blocks may augment the gas reserve to several times the present reserve. This will enable generation of more electricity and setting up of new urea plants against the Bangladesh's share of the PSC's already signed. A brief description of the newly discovered gas fields is given below :

16.2.2 Saldanadi Gas Field : Saldanadi gas field is situated along the India-Bangladesh border under Kashba Thana of Brahmanbaria district. The structure was selected for exploratory/appraisal drilling after evaluation of seismic data collected during 1991/92 field season by BAPEX. Accordingly, drilling was undertaken in 1996 and a prospective gas reserve was discovered at a depth of 2,511 metres. After reviewing the data, a preliminary estimate of gas reserve was given at 0.202 TCF.

16.2.3 Shahbazpur Gas Field : Shahbazpur field is located in the central part of Shahbazpur island of Bhola district. The location was selected for exploratory drilling after evaluation of seismic data collected during 1986/87 field season. Shahbazpur well was spudded in December, 1993 and in 4 months, a depth of 3,631 metres was reached. Due to encountering of over pressure, the well had to be abandoned after flowing gas through coil tubing from interval 3,201-3,210 metres. Subsequently, it was decided to drill a side-track hole. After drilling of side-tracking hole down to 3,342 metres, commercial gas flow was ensured. Analysis of results obtained from vertical and side-track drillings indicated an in-place reserve of 0.5138 TCF.

16.2.4 Shangu Gas Field : In 1994, Bangladesh Government signed a Production Sharing Contract (PSC) with Cairn Energy and Holland Sea Search for oil and gas exploration in Chittagong and its adjacent coastal areas. The international company conducted a comprehensive seismic survey in the Bay of Bengal in 1995 and identified a prospective area of hydrocarbon reserve located 40 km away from Shangu estuary. The first well was drilled down to the depth of 3,500 metres and four gas zones were reached. Examination of two zones indicated the presence of significant amount of gas and Shangu was declared a gas field. Then the second well was drilled to estimate the gas reserve and a reserve of 0.848 TCF was determined and to exploit the gas reserve, development of the field was planned. To make it commercial, plan was prepared to drill additional production wells, construct platform and install pipelines and processing plants. After successful completion of all these activities, it is expected that the production of natural gas from this field will be possible from April, 1998.

16.2.5 Patharia Oil and Gas Exploration Well : Patharia area is located in the north-eastern part of Bangladesh under Baralekha Thana of Moulvibazar district. After evaluation of seismic data and gravity survey, the location was selected for exploratory drilling. Drilling of one exploratory well with Saudi assistance was planned during the Third Plan period.

Patharia well was spudded in 1989. The well was designed to be drilled down to a depth of 5,000 metres. However, due to several changes in casing points and hole deviation, it could reach only down to 3,438 metres. Then the drilling was terminated for deterioration of casing due to frequent reaming, slow drilling rate and risk factor in continuation of drilling.

16.2.6 Oil : Exploration activities carried out so far could not discover any significant oil deposit. The only oil deposit so far discovered in the country is in Haripur which produced a total of about 0.65 million barrels of crude oil till 1994. The oil production has since ceased because of reduction of pressure and influx of water in the oil zone. Comprehensive exploration efforts need to be mounted in this field.

16.2.7 Coal : Discovery of coal dates back to late fifties, when an exploratory oil well was drilled through coal beds in Bogra. Subsequent explorations resulted in the discovery of the Jamalgonj coal deposit at a depth of about 1,000 metres from the ground level and having an estimated reserve of more than 1,000 million tons of coal. Feasibility studies have indicated that the development of this deposit is not yet feasible under the prevailing international market price. However, with the increase in gas price, these deposits may become competitive. After evaluation of a detailed geological and geophysical survey, Geological Survey of Bangladesh (GSB) identified 13 locations in the region of greater Rangpur and Dinajpur districts as the prospective basins for coal exploration. Exploratory wells were drilled in 5 basins out of which high quality bituminous coal deposits were found in 3 basins. In addition, BHP, a foreign company, also discovered a coal reserve in one basin. In 1984/85, Geological Survey of Bangladesh located another coal deposit at Khalashpir (Pirgonj) of Rangpur district at a shallower depth (150 metres), with an estimated reserve of 450 million tons of coal. This deposit requires to be appraised in respect of its potential.

16.2.8 Besides, minable coal deposit was also discovered in Barapukuria area of Parbatipur, Dinajpur at a reasonably shallow depth (240 metres) with an estimated reserve of about 300 million tons. Based on this, a project for construction of an underground mine has been undertaken at an estimated investment of Tk. 8,873.60 million to produce an annual output of 1 million tons commencing from 2000/01. Recently, another coal deposit has been discovered by Geological Survey of Bangladesh in Dighirpara area of Dinajpur district covering an area of about 15 sq. km. As only one well has been drilled, the actual deposit of coal could not yet be determined.

16.2.9 The GSB has planned to conduct comprehensive exploration activities by the year 2000 in the following seven basins :

- a. Badargonj-II (Rangpur)
- b. Basudevpur (Rangpur)
- c. Barapukuria-I (Dinajpur)
- d. Barapukuria-II (Dinajpur)
- e. Daudpur (Dinajpur)
- f. Dongapara (Dinajpur)
- g. Shamnagar (Dinajpur).

16.2.10 Peat : Deposits of peat occur at shallow depths in different low lying areas of Bangladesh. According to the Geological Survey of Bangladesh, the reserve of dry peat is about 170 million tons. The major deposits are in greater districts of Faridpur (150 million tons), Khulna (8 million tons) and Sylhet (13 million tons). Peat requires drying before making briquettes for use as fuel. A pilot project for extraction of peat and making briquettes

was implemented by Petrobangla, but the results were not encouraging and extraction was assessed as economically not viable. However, in future, this resource may be viable as and when prices of other fuels rise.

16.2.11 Hardrock and Limestone : Hardrock was discovered by GSB in Madhyapara area of Dinajpur District in 1964 at a depth of 285 metres from surface. An agreement was signed with North Korea in 1993 for the opening of an underground hardrock mine with a target production of 1.6 million tons per annum. The hardrock mine is expected to come into operation by the year 2000/01. Madhyapara hardrock will be used for river training , heavy construction work, railway ballast, highway, etc. The granite slabs excavated from this mine can also be used as polished tiles and pavings. Presently these are imported. Considerable import substitution and increased revenue earning may, therefore, be expected from this rock. Limestone has been found at Joypurhat and some other places of Sylhet district. The production of sub-surface limestone of Joypurhat is yet to materialise.

16.3 Review of Past Performance (1973-1997)

First Five Year Plan and Two Year Plan (1973-1980)

16.3.1 The need for development of natural gas as a source of energy was recognised in the First Plan (1973-78). In this Plan, priority was given on the gas transmission and distribution related works with a view to accelerating the use of natural gas as fuel and industrial raw material. One of the objectives of the Two Year Plan (1978-80) was to accelerate the pace of exploration activities and encourage expanded use of gas, particularly as a substitute of imported petroleum. An allocation of Tk. 2,360.00 million was made during the First Plan and Two Year Plan periods for development of the sector. However, actual expenditure during the period stood at Tk. 2,870 million.

16.3.2 An intensive effort was made during this period to find new hydro-carbon sources, particularly in the off-shore areas, but with limited success. Gas deposits were found in two wells out of eleven exploratory wells drilled, of which 9 were off-shore wells drilled by the international oil companies (IOCs). Nine production wells drilled in 4 fields with an estimated production capacity of 210 MMCFD, produced only 122 MMCFD of natural gas in 1979/80. Total transmission line extended up to 224 km in 1979/80. During this period, the main physical achievement was the connection of Habigonj gas field with the Titas field by the 12" transmission line over a stretch of 56 km and initiation of gas transmission line from the Bakhrabad field to Chittagong. Total distribution line of 1,608 km was constructed and 119,400 gas connections were given upto 1979/80. Crude oil storage tanks with a capacity of 80,000 tons and refined petroleum storage tanks with a capacity of 25,000 tons were installed during 1973-80.

Second Five Year Plan (1980-1985)

16.3.3 Implementation of the Second Plan started with the objective of maximising the utilisation of indigenous natural gas and saving foreign exchange through substitution of imported fuel. The Plan envisaged to raise the supply of gas to 128 BCF in 1984/85 from 44.5 BCF in 1979/80 in order to enhance the share of natural gas in commercial energy consumption from 37 per cent in 1979/80 to 68 per cent in 1984/85. At the same time, exploration activities were geared up in search of oil and gas.

16.3.4 During the Plan period, drilling of 6 exploration wells were completed against the planned target of 9 wells. Out of these, 4 wells were found to have gas reserves. The

important developments during the period were the activation of Bakhrabad gas field to supply gas to Chittagong area and connection of this field with the Titas system by a new transmission line near Dhaka. Transmission system was expanded by 307 km altogether which enabled gas supply to rise from 44.5 BCF in 1979/80 to 94.6 BCF in 1984/85. The share of gas in commercial energy rose from 37 per cent in 1979/80 to 56 per cent in 1984/85. At the end of the Plan period, 240,000 customers were given gas connection against the target of 258,000 customers which raised the total gas connection to 359,400 customers in the year 1984/85.

16.3.5 The country continued to be entirely dependent on imported POL. The total quantum of POL product consumed during the Second Plan was 6.8 million tons at an average rate of about 1.4 million tons per year. Of this, about 70 per cent was derived from imported crude oil refined at the Eastern Refinery Ltd. (ERL) and the rest, the middle distillates like diesel and kerosene were imported. ERL also set up an LPG recovery plant with a designed capacity of 17,000 tons per annum. Production of LPG was 7,000 tons in the year 1984/85. At the end of the period, the economics of ERL were upset by the fall in world oil price. As spot purchases of POL products became cheaper, refining of crude through ERL was reduced to below 1 million tons against its capacity of 1.5 million tons. Moreover, naphtha was exported at a cheap price when some middle distillates were being imported at a higher cost. So a study was undertaken for ascertaining the feasibility of secondary conversion of some of the ERL products into more needed middle distillates. The drop in world prices, however, helped BPC to improve its financial position as the domestic prices of POL products remained unchanged and BPC was able to make up its past losses.

16.3.6 During this period, about 1,025 sq. km of geological mapping, 2,560 sq. km of geological surveys, 1,520 km of drilling and 3,000 geochemical analyses were completed. A new shallow depth coal deposit at Dinajpur was discovered as a result of geological survey during this period.

16.3.7 An amount of Tk.6,150 million (at 1979/80 prices) was allocated to the sector in the Plan while the actual expenditure amounted to Tk. 9,550 million. The excess expenditure was met from Petrobangla's own resources.

Third Five Year Plan (1985-90)

16.3.8 The Third Plan envisaged to maximise the use of natural gas to reduce pressure from fuel import bill, explore the major gas fields to assess the proven reserves, conduct exploration for oil and gas, construct transmission and distribution lines to provide additional gas to various customers, improve product-mix of Eastern Refinery and conduct survey for mineral discoveries. In order to achieve these objectives, the Plan set a target to drill 18 development/appraisal wells and 5 exploration wells for hydrocarbon and construct 3,760 km of transmission and distribution lines. It was planned that the oil consumption would be contained within 1.6 million tons in 1989/90. GSB envisaged to continue extensive geological mapping and survey works including drilling of 6 more boreholes to delineate the Barapukuria coal deposit during the Plan period .

16.3.9 During the Third Plan, 16 out of 18 planned development/appraisal wells were drilled, 2,700 km transmission and distribution lines out of planned 3,760 kms were constructed and only 2 out of 5 exploration wells were completed. During the Plan period, additional gas connections were given to 165,600 customers as against the target of 160,000. Gas supply was raised from 94.6 BCF in 1984/85 to 165 BCF in 1989/90. Oil consumption and hence the

import bill could not be contained on account of underestimation in demand projections and lagging behind of the expected substitution of diesel and kerosene through rural electrification and other programmes. The addition of a secondary conversion plant to Eastern Refinery could not even be initiated. Physical activities of GSB were almost completed which included drilling of 6 boreholes for coal exploration. Training courses to 500 professionals and technicians of BOGMC, GSB etc. were provided by Bangladesh Petroleum Institute under the Plan. The discovery of oil in sylhet gas field in December, 1986 and the discovery of a large coal field at Khalashpir, Rangpur at a depth of 250 meters in April, 1989 were two remarkable achievements during the Plan period.

16.3.10 Out of the total allocation of Tk. 13,150 million, the amount utilised was about Tk. 12,000 million during the Plan period in the public sector. Besides the public sector, Tk. 1,250 million was spent for hydrocarbon exploration by two IOCs.

Fourth Five Year Plan (1990-95)

16.3.11 The Fourth Plan was launched with the objectives of ensuring the supply of increased quantum of commercial energy mainly from indigenous resources and optimising its utilisation. The agency-wise physical targets and actual achievements were as follows :

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16.3.12 Exploration Survey and Drilling for Hydrocarbons : Intensive geophysical and geological survey were to be undertaken over discovered as well as new areas. The target was 7,500 lkm. of survey during the Fourth Plan. In effect, actual seismic survey amounted to only 1,712 lkm. with an additional 1,000 lkm of geological survey.

16.3.13 Drilling of 5 exploration wells was planned to be executed by BAPEX. In practice, no exploration drilling was completed during the Fourth Plan. The main reasons were financial constraint, non-availability of project equipment and lack of expert personnel in BAPEX. PSC partners were expected to drill at least 10 exploration wells during the Plan period. No PSC was actually made operational and no drilling took place .

16.3.14 During FFYP, 45 new production wells were targeted (net no. of wells was to be 41 as four wells were expected to be shut-off). By the end of the Fourth Plan, 42 wells were completed (net 39 wells, 3 wells were shut off). The Plan target was to have 35 wells in operation. Against this target, 33 wells were put into operation upto June, 1995, while two others came on stream shortly thereafter. Peak demand for gas was estimated to increase by 300 MMCFD to 950 MMCFD by 1994/95; in reality, peak demand was registered at 850 MMCFD by 1994/95. Annual production of gas was planned to increase from 165 BCF to 275 BCF by the end of Fourth Plan. Actual production of gas reached to 247 BCF.

16.3.15 Transmission and Distribution Line and Customer Connections : During the Plan period, some major transmission pipe lines were completed and commissioned. These included North-South Pipe Line, Brahmaputra Basin Pipeline and Pipeline to Raozan power plant. In addition, a condensate pipeline of 190 km length was completed. However, the Ashugonj-Bakhrabad pipeline suffered due to delay in financing and other complications. The target was to add 700 km transmission line by the end of the Plan period.

16.3.16 To reach the consumers, the distribution network was planned to be expanded with the addition of 2,500 km pipeline. This would bring the total distribution network to 7,500 km. In effect, distribution network under the three franchise areas increased by 2,950 km so

that the total figured at 7,950 km. Concomitant with the growth of the network, customer connections also grew rapidly. The Plan envisaged an addition of 195,000 new connections to bring the total to 600,000. Actual number of connection to customers reached 631,710 by the end of the Plan period.

16.3.17 Development Projects : During the Plan period, a total of 16 projects were completed, of which 10 were investment projects and 6 were technical assistance projects. These projects together created employment opportunity for about 800 persons during implementation and about 650 persons during operation. The oil and gas sub-sector contributed Tk. 36,000 million to the government in the form of CD/VAT, corporate tax, dividend, etc. during the Plan period.

16.3.18 Plan Allocation : Against a Plan allocation of Tk.23,980 million the actual utilisation was Tk. 15,320 million which was about 64 per cent of the Plan allocation and 80 per cent of RADP allocation.

16.3.19 Bangladesh Petroleum Corporation : BPC undertook five development projects (4 spill-over and 1 new) during the Fourth Plan involving a total investment of Tk. 5,339.90 million with a foreign exchange component of Tk. 3,121.50 million to attain improved operational flexibility and also to ensure easy availability of petroleum products at the door step of the people. During the years under review, RADP allocation was Tk. 3,381.50 million out of which an amount of Tk. 3,056.90 million was utilised. Among the five projects, three were completed as scheduled at a cost of Tk 3,609 million.

16.3.20 With the completion of BMRE of ERL, the refinery attained its original processing capacity of 1.5 million tons of crude oil per annum. Besides, a three MW steam turbine generator, a cooling tower, dolphin type oil jetty and modern fire fighting facilities were also installed to improve power generation and cooling system of the refinery and to facilitate crude reception and naphtha export. After completion of the secondary conversion plant at ERL, excess furnace oil (FO) produced in the Refinery was upgraded to High Speed Diesel (HSD) which saved foreign currency by way of import substitution of HSD.

16.3.21 Geological Survey of Bangladesh : GSB is entrusted with the responsibility of carrying out basic geological studies including geological, geotechnical and geophysical drilling, etc. in the country for the exploration of mineral resources except oil and gas.

16.3.22 The organisation already completed 3,289 sq.km mapping works including geological, geotechnical, photogeological and geochemical mapping. About 5 km of seismic, 3,312 lkm. of geophysical logging, 50 sq.km. of resistivity and 440 sq.km. of gravity magnetic survey have also been completed within this period. Two drill holes have been drilled in the Dighipara of Dinajpur and Badarganj of Rangpur district respectively and a coal field has been discovered with a good quality bituminous coal at a depth of 1,076 metres below the surface. During the Fourth Plan, GSB spent only Tk. 2.15 million against an allocation of Tk. 2.25 million for implementation of the project - Detailed Geological Exploration in Selected Areas of Bangladesh.

16.3.23 Bangladesh Petroleum Institute : BPI was established in January 1981 as a development project under the Ministry of Energy and Mineral Resources. BPI was mainly assigned to train 250 professionals annually in the petroleum sector. It imparted training over the years to professionals and technicians engaged in the petroleum sector. During the Fourth Plan period, a total of 550 persons were trained through 21 courses, seminars and workshops

on various aspects of exploration, production and development of oil and gas fields, safety and management. BPI also sent abroad 7 of its professionals on short courses and on the job training (4 to 8 weeks) and 3 of its professionals on long term courses including post graduation. It also procured books, a number of training aides and class room tools to facilitate its training activities. BPI was allocated Tk. 154.60 million out of which Tk. 113.90 million (73.69 per cent) was utilised.

16.3.24 Sectoral Allocation and Utilisation During Fourth Plan : A total of Tk. 30,250.00 million at current prices was allocated to the oil, gas and mineral resources sector, out of which Tk. 22,800 million was released through RADP. The actual utilisation was Tk. 18,936.30 million during the Plan period which was 62.6 per cent of the Plan allocation and 83 per cent of RADP allocation.

16.4 Performance During 1995/96 and 1996/97

16.4.1 The OGNR sector is highly important in determining the growth prospect of the economy. Over the two year period, the major objectives in this sector were to ensure a reliable and uninterrupted supply of commercial energy, mostly natural gas. During this period, emphasis was given on the development of the private sector in the oil and gas exploration activities mainly through Production Sharing Contract (PSC). Activities undertaken during this period related to the seismic survey, exploration, expansion of gas transmission and distribution network, development of coal and hardrock mine, etc. During this period, 564 Lkm of seismic survey was conducted and 2 exploration wells were drilled by BAPEX. Both exploration wells (Shahbazpur and Saldanadi) led to discovery of gas. During 1995/96, 15 km transmission pipelines and 575 km distribution and other pipelines were constructed. During 1996/97 fiscal year, 326 km distribution and other pipelines were laid until December, 1996. The Ashugonj-Bakhrabad pipeline (30" dia 59 km) connecting Surma basin production area and Bakhrabad franchise area was completed. Gas production during 1995/96 reached 265 BCF increasing from 247 BCF in 1994/95. Production of the same was 261 BCF in 1996/97. Remarkable achievement of these two years were the discovery of three new gas fields among which two were on-shore and one off-shore. The off-shore field was discovered by one international oil company under PSC and two on-shore fields were discovered by BAPEX.

16.4.2 An allocation of Tk. 4,534.90 million was provided through ADP for 43 projects of the sector in 1995/96. Actual expenditure during the year was Tk.4,080 million. In 1996/97 Tk.4,858.20 million was allocated to 37 development projects of the sector.

16.5 An Overview (1973-1996)

Oil and Gas Exploration

16.5.1 During the period 1973-96, drilling of 24 exploratory wells including 7 off-shore wells was completed. Individual depth of wells varied from 1,560 metre to 4,977 metre. The number of wells drilled by national organisations were 14, while ten wells were drilled by the foreign companies. National organisations discovered 7 gas fields, and one oil field. Foreign companies discovered 2 gas fields including one in the off-shore area. It may be stated that oil and gas exploration activities had been very limited. Only one well per year, on an average, was drilled in the last 23 years.

16.5.2 As far as gas fields are concerned, the exploration/discovery ratio in Bangladesh till now is 3:1 i. e. 17 gas fields were discovered out of 54 exploration wells since 1910, which is

one of the highest in the world. Reserves were estimated at 22.90 TCF of which 13.60 TCF are recoverable. Out of 17 discovered gas fields, 8 were brought into production. It is important to note that almost all the exploration activities were undertaken in the shelf area in the north eastern part of Bangladesh .

16.5.3 To expedite petroleum exploration, a new Model Production Sharing Contract (PSC) was formulated in 1988. In 1989, the area of the country was divided into 23 blocks of which 17 blocks including 6 off-shore blocks were offered to the international oil companies (IOCs) for competitive bidding. In 1993, the government announced a new petroleum policy to seek participation of IOCs in hydrocarbon exploration and production through PSC.

Production of Natural Gas Condensate and Crude Oil

16.5.4 At present gas is being produced from 8 fields, namely, Titas, Bakhrabad, Habiganj, Rashidpur, Kailashtilla, Sylhet, Narsingdi and Feni. Production from two fields, namely, Chatak and Kamta has been suspended owing to various technical reasons. Gas production increased from 23.58 BCF in 1972/73 to 292 BCF in 1996/97, while sales went up from 20 BCF in 1972/73 to 285 BCF in 1996/97. Of the total volume of sales, 46.74 per cent was consumed by the power sector, 35.57 per cent by fertiliser, 9.65 per cent by other industries including tea estates, and the rest 8.04 per cent by commercial and domestic users. Total revenue from sales of gas and gas associated fuel amounted to Tk. 11,618 million in 1993/94.

16.5.5 In 1993/94, production of crude oil from only one oil field at Haripur was 5,395 metric tons. But it decreased steadily during the last few years and was suspended in July, 1994. Current production of gas associated condensate amounts to about 1,000 barrels a day which is expected to rise to about 3,500 barrels a day when the wet gas fields of Kailashtilla and Beanibazar, Jalalabad are commissioned.

16.5.6 The present demand for petroleum products of the country is about 2 million tons of which 50 per cent is for diesel, 25 per cent for kerosene, 8 per cent for motor spirit, 10 per cent for fuel oil and the rest 7 per cent is for other minor products, whereas 1.4 million tons of refined petroleum products are produced by the only refinery of the country of which 20 per cent is diesel, 30 per cent kerosene, 15 per cent LPG and gasoline (motor spirit and naphtha) and 35 per cent fuel oil. This shows that the country has excess gasoline and fuel oil while there is a shortage of diesel and kerosene. The consumption rate of petroleum products is growing slowly but steadily at the rate of 2.5 per cent to 3 per cent per annum. Import of refined petroleum products, therefore, remains, quite essential. To meet the present and future demand for petroleum products of the country, addition to the present refinery capacity will be needed.

Transmission and Distribution of Gas

16.5.7 During the last few years, the operational networks of the transmission and distribution companies have been considerably expanded through the construction of gas pipeline and associated DRS and MRS installations. About 9,600 km of pipelines have been constructed upto June 1996 of which about 1,600 km are high pressure transmission lines.

16.6 Institutional Development

16.6.1 Petrobangla : The gas sector in Bangladesh is dominated by the Petrobangla Group consisting of eight state-owned companies responsible for the exploration, production and delivery of natural gas as well as exploration and development of oil and solid minerals including coal. The Petrobangla Group consists of the holding corporation (Petrobangla), one

exploration and drilling company, two production companies, three distribution companies and one liquid natural gas company. In 1993, the government approved the establishment of the Gas Transmission Company Ltd. (GTCL) to operate the national gas grid.

16.6.2 Bangladesh Petroleum Corporation : BPC was set up in 1976 with the objective of importing, refining and marketing of petroleum oil and lubricant products. It operates through seven subsidiary companies.

16.6.3 Geological Survey of Bangladesh : GSB, the national geoscientific organisation, established in 1962, is responsible for geological, geophysical, geochemical mapping and drilling activities related to finding out solid mineral resources in the country. It evaluates the known mineral resources, conducts studies, renders advisory services and supplies relevant information regarding hydrogeology, engineering geology, urban and environmental geology, etc.

16.6.4 Bangladesh Petroleum Institute : BPI was established in 1992 as a research and training institute with the objective of imparting training to professionals and technicians in the oil and gas sector and carrying out research works.

16.6.5 Hydrocarbon Unit : A hydrocarbon unit was established in 1994 in the Ministry of Energy and Mineral Resources to perform the activities relating to state control over government owned corporations and companies, monitoring exploration/production licences, approval of PSCs, monitoring crude oil refining, petroleum products distribution policy, fixing of price of petroleum products, preparation of budgets, all administrative matters and control of financial matters.

16.7 Major Constraints

16.7.1 The gas sector in Bangladesh is wholly dominated by Petrobangla. The sector has a large potential for increased contribution to the country's economic growth. However, a number of constraints restrict the appropriate development of the sector. The country is dependent on foreign aid. Lack of necessary capital is limiting the development of the sector. Exploration, gas field development, transmission and distribution activities are highly technical and capital intensive activities. The problem of the sector is accentuated by the dependence on expatriate consultants. In spite of providing a large number of short and long-term training, both local and foreign, to a number of technical, professional and administrative personnel in different fields of gas sector activities in the last one decade, substitution of foreign consultants by the local consultants has not been effective in sectoral planning, designing and implementation of programmes/projects. Also, there has been inadequate transfer of technology through technical assistance projects. The deficiency in the development of manpower has also been caused by inappropriate selection of trainee clientele. These have to be overcome through appropriate sectoral manpower planning.

Considerable delays in project implementation occur due to the following :

- a. too many stages of approval at different levels for appointment of consultants/contractors and procuring machinery/equipment/materials both within the government and the development partners;
- b. imposition of too many conditionalities by the donors at different stages of credit negotiation, signing of agreement and effectiveness of credit; and
- c. change in the scope of works and linking the implementation of priority projects with the conditionalities of low priority projects.

16.8 Fifth Five Year Plan (1997-2002)

16.8.1 Objectives : The main objectives for the development of oil, gas and natural resources sector during the Fifth Plan will be to :

- a. substitute imported oil by indigenous fuel, mainly natural gas, to the extent possible and feasible;
- b. meet most of increased demand for commercial energy through the development of indigenous gas;
- c. intensify exploration and appraisal activities for augmenting the hydrocarbon resources base;
- d. make a balanced development of different components of gas activities, namely, exploration, production, transmission and distribution in sync with downstream uses, etc.;
- e. involve private sector in oil and gas development activities particularly in exploration under production sharing contract (PSC), transportation and sale of gas based liquids, LPG, condensate (diesel/motor spirit/kerosene, etc.);
- f. gradually adjust gas price to its economic cost of supply in the interest of its optimal use;
- g. build a national gas grid for equitable regional distribution;
- h. conserve energy resources and help maintain the ecological balance;
- i. extract coal, hardrock and other solid mineral resources;
- j. conduct geological and geophysical surveys in order to explore and discover new sources of indigenous energy resources;
- k. strengthen research and development in the energy sector;
- l. provide cylindered liquid natural gas for the rural people; and
- m. use surplus gas for downstream activities.

16.8.2 Policies and Strategies : The following policies and strategies will be adopted for realisation of the above objectives :

- a. in order to accelerate development activities, efforts will be made to gradually involve the private sector in exploration, production, transportation and sale of oil and gas;
- b. a shift towards better mix will be made so that dependence on a single energy source like natural gas is minimised, and other energy resources are exploited;
- c. natural gas fields rich in condensate and propane/butane will be developed to reduce the import bill for oil; emphasis will be given to supply liquid natural gas to the indigenous rural people by cylinder;
- d. gas pipeline in the west zone through the Bangabandhu Bridge for effective regional balance in energy supply will be laid in;
- e. measures will be taken to use coal discovered in the west zone for electricity generation;
- f. efforts will be made to expand the gas and condensate transmission and distribution networks to the extent possible/feasible;
- g. gas supply to industrial estates will be ensured;
- h. timely maintenance of the gas production wells to avoid supply dislocation caused by sanding/water intrusion as happened in the Bakhrabad well will be ensured;
- i. conservation and economic use of natural gas will be promoted through adoption of appropriate technology and tariff measures; price of natural gas will be rationalised into economic price considering the heating value parity;

- j. extraction of hardrock and other solid minerals including thorium, uranium and beach sand minerals will be geared up;
- k. special incentive package for oil and gas exploration in the west zone will be given;
- l. efforts will be made to encourage establishment of privately owned and managed distribution companies for marketing of natural gas available from transmission pipelines to unserved urban centres;
- m. measures will be taken to establish a regulatory authority which will be manned by competent persons for licensing energy utilities, setting prices and consideration of related issues;
- n. environmental impact assessment will be made mandatory for energy development projects;
- o. dependence on external assistance will be reduced gradually by internal financing to the extent possible;
- p. a comprehensive programme of training linked with career development of professionals will be implemented;
- q. research and development activities will be increased for productivity and cost-effective advances in the energy sector;
- r. geological and geophysical activities will be geared up;
- s. measures will be taken to provide tax incentives to those entrepreneurs who will come forward to set up natural gas based industries; and
- t. international oil companies with whom PSCs have been signed for exploration of oil and gas will be encouraged to invest downstream in power generation activities, fertiliser factories, petro-chemical complex, etc.

16.9 National Programmes

16.9.1 The demand for primary commercial energy is expected to increase from 10 million ton oil equivalent (MTOE) in 1997 to 15 MTOE by 2002 showing an average growth rate of 8.57 per cent. At this growth rate, per capita primary commercial energy consumption will rise from 81 KGOE in 1996/97 to 109 KGOE in 2001/02. This increased demand will mostly be met by indigenous natural gas raising its share to 70 per cent of the total primary commercial energy consumption. The peak demand of natural gas is expected to increase from 1,100 MMCFD in 1996/97 to about 1,700 MMCFD in 2001/02 and average demand from 900 MMCFD in 1996/97 to about 1,360 MMCFD in 2001/02 giving an annual average growth rate of about 10 per cent. Endeavours will be made to put coal to use so that partial energy demand can be met from this alternate indigenous resource. To augment gas supply, both intensive and extensive exploration for hydrocarbon will be carried out aiming at adding new reserves during the period 1997-2002 in both public and private sectors and under PSCs.

16.9.2 To contain the import of oil more or less at the present level, all efforts will be made to substitute this with indigenous natural gas and coal to the extent possible and extract LPG from natural gas to reduce the import of kerosene. The import of diesel and kerosene will be further reduced by expanding rural electrification programme for irrigation and lighting. In spite of all these efforts, the import of POL is estimated to grow at an average rate of 9 per cent annually. It is expected that the consumption of POL in 2001/02 will be about 3.49 million tons compared with the consumption of 2.38 million tons in 1996/97.

16.10 Programmes in Public Sector

16.10.1 Survey/Exploration for Hydrocarbon : The geological and geophysical surveys will be intensified to discover and delineate new hydrocarbon bearing structures and to

determine the extent and potential of existing gas fields. It is expected that a total of 3,000 lkm of seismic survey and about 1,200 lkm of geological survey will be undertaken during this period. At the same time, programme of drilling 7 exploration wells will be implemented during the Plan period in the public sector. For exploration of hydrocarbon, in the private sector, particularly the multinational companies will be encouraged to invest under PSCs.

16.10.2 Production/appraisal wells : Drilling of production wells in Rashidpur/Habiganj gas fields and drilling of appraisal-cum development and workover wells in Titas fields have been planned for 1997-2002. The major work in this respect will include the drilling of appraisal and production wells in Saldanadi and Shahbajpur (2+2=4), Rashidpur (4 wells), Habiganj (4 wells), Titas (3 wells), and workover of about 10 wells together with the drilling and establishment of 480 MMCFD process plant.

16.10.3 Transmission and distribution line : A number of on-going lines will be completed and new ones taken up during 1997-2002. The major ones will include Monohardi-Narshingdi-Shiddhirgonj pipeline (59 km), Rashidpur-Ashugonj loop line (82 km), Beanibazar-Kailashtilla pipeline (23 km) and pipeline over Bangabandhu Bridge and on the west bank (80 km). In total, more than 350 km of transmission line is expected to be completed. Besides, about 2,000 lkm distribution line will be constructed in three franchise areas to supply gas to users.

16.10.4 Coal : At the present rate of growth in energy demand, partial energy demand mostly for thermal power plants beyond 2000 will be met by coal. Development of the Barapukuria coal mine is under implementation projecting a production of 1 million tons of coal per year from 2000 for 65 years. In addition, Khalashpir (Rangpur) coal deposit is being studied for possible extraction. Studies will also be undertaken to extract coal bed methane from the Jamalgonj coal deposit.

16.10.5 Hardrock : The present annual demand of hardrock is 1.5 million tons. The hardrock project is projected to yield of 1.65 million tons per annum.

16.10.6 Development of LPG / NGL : Necessary arrangements will be made for production of LPG/NGL from the wet gas fields of Sylhet region. It is expected that about 125,000 tons of additional LPG/NGL/ condensate will be produced annually by the end of the Plan period.

16.10.7 Major programmes of petrobangla : The following will be the major programmes of Petrobangla in the Fifth Plan period :

Oil and Gas Exploration Drilling	7 wells
Geological and Geophysical Survey	3,000 km
Appraisal/Development Drilling	13-15 wells
Gas Transmission Lines	375 km
Gas Distribution Lines	2,000 km

In addition to these, contingent on negotiations with the relevant oil exploration companies, additional exploration may be undertaken.

16.10.8 Bangladesh petroleum corporation : BPC's main activities will be concentrated on the completion of BMRE of the existing refinery, construction of lighterage and dolphin jetties, second crude oil distribution unit at ERL, Mongla Oil Installation and LPG import, storage, receiving, bottling and distribution facilities. In addition, a second refinery will be set up during the Plan period to meet the rising demand for POL products.

16.10.9 Geological Survey of Bangladesh : Extensive and intensive geological and geophysical surveys supported by drilling for mineral discovery, engineering, water resources and tectonic studies will be undertaken by GSB. It will also conduct research for identifying rocks and minerals and establishing rock sequence in the country. GSB will take up activities relating to the delineation of Khalashpir coal and completing its early feasibility study. A few important proposals of GSB are as follows :

Major Programmes	1997-2002
Detailed geological mapping for minerals	7,000 lkm
Research or stratigraphy	10 sections
Research and exploration for metallic deposits	200 samples
Gravity and magnetic survey	1,000 sq. km
Seismic/Resistivity survey	200 sq. km.
Drilling of exploration wells (15 Nos.)	7,000 metres

16.10.10 Gas Demand Forecast and Other Proposals : Gas demand forecast and other proposals for 1997-2002 period are given in Tables 16.1, 16.2 and 16.3 . Gas demand forecast for power generation and fertiliser production has been made on the basis of already committed projects and future demand estimated from power sector master plan (PSMP). Demand forecast for other sectors has been estimated considering historical trend of consumption (around 10 per cent per annum) by the sectors over the last ten years.

Table 16.1
Gas Demand Forecast During 1997-2002

Items	1996/97 (Benchmark)	1997/98	1998/99	1999/2000	2000/2001	2001/2002
Peak demand (MMCFD)	1100	1240	1380	1470	1550	1700
Average demand (MMCFD)	900	1000	1120	1200	1250	1360
Annual production capacity (BCF)	292	350	495	506	500	500
Annual gas supply (BCF)	285	350	410	438	455	495

Source : Petrobangla.

16.10.11 As stipulated in the energy policy, gas supply will be required to be limited to a maximum of 1,000 MMCFD or 365 BCF/Year provided significant increase in the natural gas reserve does not take place. If remarkable addition to reserve occurs, the situation may significantly improve in the coming years and the production capacity shown above may well be attainable. It is expected that from 1998/99 there will be no supply constraint and gas supply will be based on available demand.

Table 16.2
Customer-wise Average Gas Demand During 1997-2002

Sector	(in MMCFD)				
	1997/98	1998/99	1999/2000	2000/01	2001/02
Power *	540	638	680	712	766
Fertiliser	280	285	305	305	305
Domestic	70	79	84	92	102
Commercial	17	17	18	21	24
Industrial + B.F+ T.E*	95	101	113	120	163
Total	1002 (365 BCF)	1120 (410 BCF)	1200 (438 BCF)	1250 (455 BCF)	1360 (495 BCF)

Source : PSMP/GSMP * Brick Fields + Tea Estates

Table 16.3
Field-wise Appraisal/Production Wells During 1997-2002

Locations	1996/97 (Benchmark)		2001/2002	
	Production wells	Wells under operation	Production Wells	Wells under operation
1. Titas	11	11	14	14
2. Bakhrabad	8	8	8	8
3. Habiganj	6	6	10	10
4. Feni	2	2	2	1
5. Belabo	1	1	1	1
6. Meghna	-	-	1	1
7. Sylhet	1	1	2	2
8. Kailashtilla	4	3	4	4
9. Rashidpur	4	4	8	8
10. Bianibazar	-	-	2	2
11. Fenchugonj	-	-	2	2
12. Jalalabad #	-	-	2	2
13. Semutang #	-	-	1	1
14. Sangu #	-	-	4	4
15. Saldanadi	-	-	2	2
16. Shahbazpur	-	-	2	2

Source : Petrobangla, # Under PSC Investors

16.10.12 Financial Outlay (1997-2002) : A total of Tk 26,039.60 million at 1996/97 prices has been projected under the Plan for development of oil, gas and natural resources in the public sector. In addition, Tk. 8,726.07 million is expected to be invested by the private sector. Agency- wise break-up of the financial outlay is as follows:

Table 16.4
Public Sector Outlay for Development of Oil Gas and Natural Resources in Fifth Plan
(in million Taka)

Agency	Allocation
Petrobangla	19,990.60
BPC	5,978.70
GSB	70.30
Total	26,039.60

Table 16.5
Projected Physical Attainments in Oil Gas and Natural Resources in Fifth Plan

Sl. No.	Description	Base Year 1996/97	Proposed 2001/02	Addition	Remark
1.	Peak Demand for Gas (mmcf)	1,100	1,700	--	
2.	Annual Supply of Natural Gas (bcf)	285	365/400	115	Subject to gas reserve
3.	Customer (Nos)	650,000	790,000	140,000	--
4.	Exploration wells for Hydrocarbon	55	77-82	22-27	Subject to new PSC operations
5.	Production wells (Operation)	36	64	28	Both Public & PSC
6.	Transmission lines (km)	1,600	1,975	375	--
7.	Distribution lines (km)	8,000	10,000	2,000	--
8.	Geological & seismic survey (lkm)		7,000	7,000	3000 public sector, 4000 in PSC
9.	Production of Cond/NGL (tons/yr)	50,000	175,000	125,000	Jalalabad, Beanibazar & Kailashtila fields to be commissioned
10.	Production of Coal (100,000 tons)	nil	10	10	--
11.	Production of LPG (tons/yr)	nil	15,000	15,000	NGL plant needed to be commissioned

16.11 Participation of Private Sector

16.11.1 One of the policies of the government is to involve the private sector in the development of hydrocarbon resources of the country through participation of international oil companies (IOC) under production sharing contract. This policy will continue during the Fifth Plan. With the known recoverable reserve of gas, it will not be possible to give additional gas connections beyond 2000 without constraining the supply to the already connected consumers. With the projected demand and known recoverable resources of gas, the country will start facing gas shortage after 2010 if no gas fields are discovered. In order to accelerate exploration efforts, international oil companies will be encouraged to participate in hydrocarbon development. During the last forty years, IOCs/private companies discovered 10 gas fields in the country. On the other hand, the state owned organisation discovered 9 gas fields through implementation of different projects. For exploration of hydrocarbon the whole country has been divided into 23 blocks of which 17 are offered for IOCs for competitive bidding. Three production sharing contracts have been signed for development of discovered gas fields and further exploration and development of new fields. It is envisaged that the supply of gas under PSCs may be available from end- 1998.

16.11.2 In order to regulate the operation of private and public sector entities in the sector, the government is in the process of creating a Gas Regulatory Authority. In line with the policies of privatisation and commercialisation of the sector, the entire gas industry is being segregated into production, transmission and distribution lines. Each operation is entrusted with separate companies to be operated on profit and loss basis. Instead of regulating the price of natural gas, the government is considering to align the domestic price of gas to its international price/long run marginal cost of gas. To this end a committee has already submitted a report on gas pricing, decision on which is awaited.

16.12 Environmental Aspects

16.12.1 Following the decision taken in the Earth Summit held in Rio-de-Janeiro, Brazil in 1992 and in line with the environmental policy of Bangladesh, measures will be taken to assess the environmental impact of the development projects, especially of the new ones. The

Government of Bangladesh has developed an environmental policy which requires assessment of environmental impact of all new industrial projects. In fulfilment of the policy to conduct environmental impact assessment, the government has initiated appropriate action programmes. Over the past decades, the gas sector practically caused no environmental problem since gas produces no hazardous smoke detrimental to environment. Rather, it has been protecting the environment by replacing traditional fuel wood and kerosene.

16.12.2 Recently the government has planned to extract coal and use it in producing electricity in the energy-deficit west zone of the country. Though coal pollutes the environment to some extent, it will also help save the environment by reducing the deforestation process in the west zone. Besides, as this coal is of high quality with low sulphur content, it will cause comparatively low environmental damage. However, to contain possible adverse environmental effects, the government has established an Environment and Safety Division in Petrobangla to assess and monitor the environmental effect of the development projects and suggest mitigation measures. The newly created division will also develop environment and safety management system.

16.12.3 As regards pollution effect of oil refinery, consideration of environment was not taken much into account at the time of construction of oil installations and oil refinery. As a result, the installation does not have adequate environment protection measures and the amount of oily water/sludge going into the surrounding canals, ponds and river and the off-gas pollute the environment around the refinery flare. In order to release minimum carbon-dioxide gas in the atmosphere and to meet the requirement of refinery, adequate measures will be undertaken during the Plan period.

16.13 Linkage With Other Sectors

16.13.1 Since the demand for gas is a derived demand, gas sector development issues, policies and strategies are closely related to and ultimately dependent on the end-user's sectoral objectives and policies, particularly those of power generation and industries (including fertiliser) sub-sectors. In fact demand estimate and investment programme of oil, gas and mineral sector are made on the basis of existing demand and drawn up development plan of the major consuming sectors. Efficient use of gas and commercial energy depend on the operational efficiency of power and fertiliser units, which vary widely from plant to plant due to technological obsolescence and age of the installed plants. Generally keeping this in consideration, the challenge will be to ensure development of downstream production units so as to completely avoid any mismatch of supply and use.

16.14 Internationalisation of Gas Trade

16.14.1 Bangladesh has an estimated gas reserve of 22.90 t.c.f of which 13.6 t.c.f is considered recoverable. With the intensification of oil and gas exploration under the PSCs, this reserve is going to increase significantly in the years to come. With a success ratio of 3:1, it will not be a surprise if we experience a doubling or tripling of the existing reserve very shortly. On the other hand with the current demand scenario and its growth, intensive oil and gas exploration requires a sharp expansion of the gas market even beyond borders. It may be mentioned that due to asymmetric gas reserve vis-à-vis the internal demand in our neighbouring countries, cross border gas trade is a highly promising option for Bangladesh. According to an estimate, by the year 2005, gas demand-supply gap will be 20.8 BCMY in India, 16.1 BCMY in China, 10.6 BCMY in Thailand and 7.5 BCMY in Pakistan. Surrounded by such energy deficit economies, Bangladesh has a great potential for export of gas. The corner stone of a medium to long run strategy of the government may be an internationalisation of gas trade to make the sector economically viable and harness the resources needed for its development. Care will be taken to export gas if so required within the framework of a pragmatic policy of ensuring national interest.