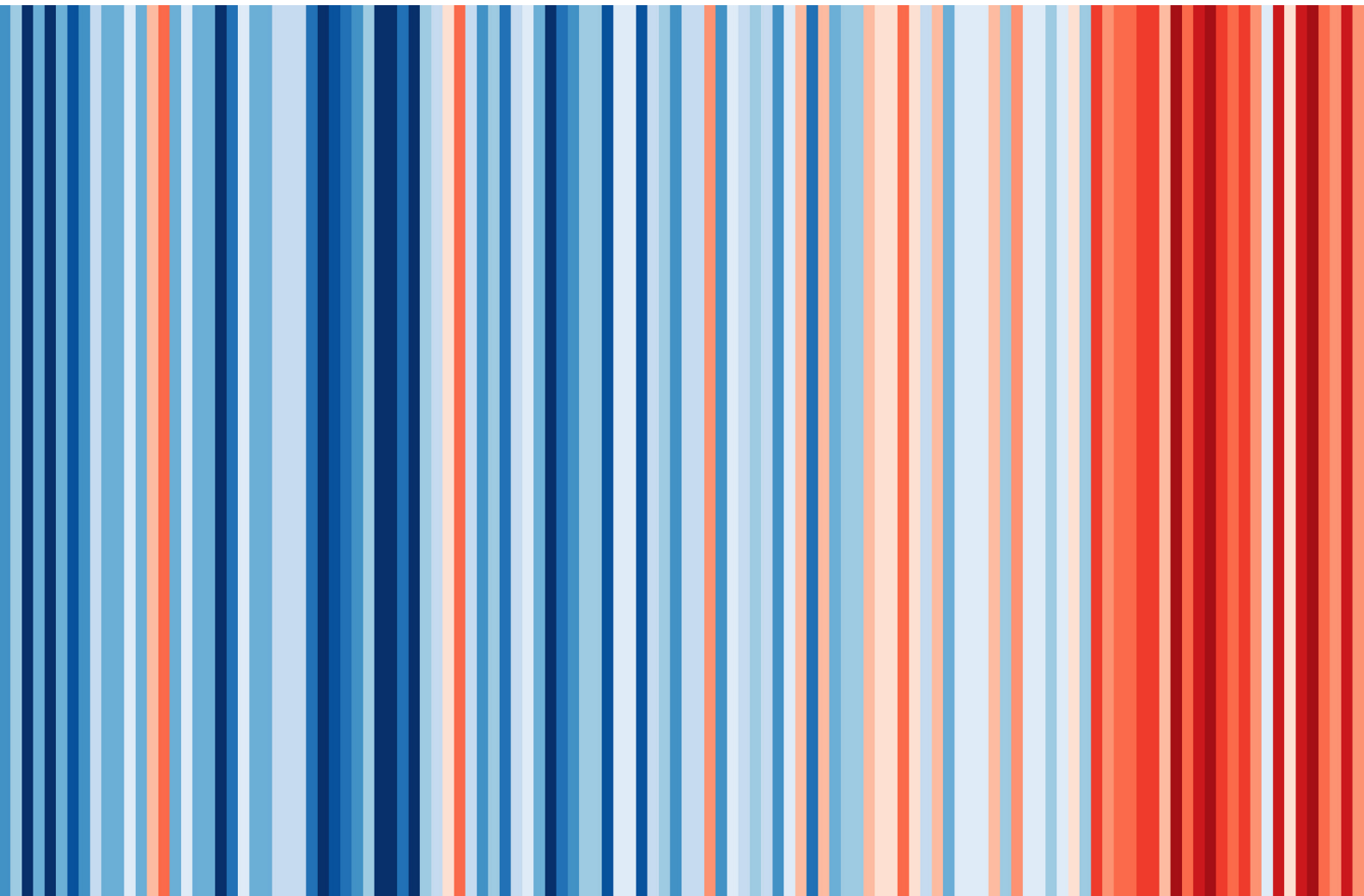
The Kyrgyz Republic

Updated Nationally Determined Contribution 2021



The stripes on the cover represent the «Warming Stripes»
for the Kyrgyz Republic for the period 1901 to 2020.
Source: https://showyourstripes.info/

Kyrgyzstan is extremely vulnerable to climate change and economically dependent on the most climate-sensitive sectors of its economy due to geographic, regional and socioeconomic conditions.

The effects of climate change, manifesting themselves in the form of frequent natural disasters, diseases, infrastructural damage, and a reduction of water resources as a source of energy generation and irrigation, may jeopardize Kyrgyzstan's achievements in sustainable development.

Kyrgyzstan attaches utmost importance to climate change adaptation and resilience at all levels.

Being a relatively low emitter of greenhouse gases, Kyrgyzstan nevertheless declares its intention to increase its climate commitments and by 2025 will reduce its GHG emissions by 16.63% under the "Business as Usual" scenario, and with international support by 36.61%. By 2030, Kyrgyzstan can reduce GHG emissions by 15.97% of the GHG emission levels under the "Business as Usual" scenario, and by 43.62% with international support.

These results will be achieved by increasing renewables, energy efficiency, sustainable transport and providing alternatives to decrease the use, and improve the quality, of the coal used.

While reaffirming its commitment not to deviate from the stated goal of greenhouse gas emission reduction, Kyrgyzstan calls for climatic justice at both domestic and international levels.

KUTMANOVA
Dinara
Chair
State Committee
on Ecology and Climate of the Kyrgyz Republic

Acronums	
AFOLU	Agriculture, forestry and other land use
BAU	Business as usual
BGP	Biogas plants
CH_4	Methane
CO_2	Carbon dioxide
COP	Conference of the Parties
CSR	Construction standards and regulation
EAEU	Eurasian Economic Union
EBRD	European Bank for Reconstruction and Development
FAO	Food and Agriculture organisation
GDP	Gross domestic product
GHG	Greenhouse gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GWP	Global warming potential
HFC	Hydro fluorocarbons
HPS	Hydroelectric power station
IFAD	International Fund for Agricultural Development
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental panel on climate change
IPPU	Industrial processes and product use
IRENA	International Renewable Energy Agency
KR	Kyrgyz Republic
LCD	Low-carbon development
LCS	Low-carbon strategy
LULUCF	Land use and Land use change, and forestry
MRV	Measurement, Reporting and Verification
N2O	Nitrous oxide
NAMA	Nationally Appropriate Mitigation Actions
NAP	National adaptation plan
NDC	Nationally Determined Contribution
NE	Not estimated
NGHGI	National greenhouse gas inventory
NGOs	Non-governmental organizations
PA	Paris Agreement
PPP	Purchasing power parity
QA/QC	Quality assurance и quality control
RES	Renewable energy sources
SDGs	Sustainable Development Goals
SITC	Standard international trade classification
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations International Children's Emergency Fund
WAM	With additional measures
WM	With measures

NDC KYRGYZSTAN

Updated Nationally Determined Contribution of the Kyrgyz Republic

SUMMARY

The updated Nationally Determined Contribution (NDC) of the Kyrgyz Republic has been prepared in compliance with the following decisions of the Conference of Parties of the United Nations Framework Convention on Climate Change and the Paris Agreement: Decision 1/CP.21[1]; Decision 4/CMA.1[2]; Decision 9/CMA.1[3]; and Decision 18/CMA.1[4]

The NDC is drafted with consideration given to a comprehensive state approach and is approved by a decree of the Coordination Council on Issues of Climate Change, Environment and Green Economy headed by the Prime Minister of the Kyrgyz Republic. Under the overall coordination of the State Committee for Ecology and Climate of the Kyrgyz Republic and with the participation of an inter-agency working group, as well as with the involvement of experts and representatives of the scientific community, civil society, private sector and the youth, an open process of the discussion of these national commitments was ensured. The drafting of the updated NDC was supported by the United Nations Development Programme in the Kyrgyz Republic as part of the UNDP's global initiative Climate Promise and the NDC Partnership.

During the course of preparing the NDC, at various stages, contributions to the drafting thereof were made by IRENA, GIZ, EBRD, the UK Government, the European Union, UNITAR, UNICEF, FAO, IFAD, and other UN agencies and international development partners.

The NDC represents the Kyrgyz Republic's plan to fight climate change and its contribution to the global effort to reduce greenhouse gas (GHG) emissions. It indicates directions for a low-carbon transformation untill 2030, with consideration given to national priorities and the Sustainable Development Goals. The Kyrgyz Republic recognizes the importance of the adoption of the Low-Carbon Development Strategy and the National Adaptation Policy.

The overall mitigation goal of the Kyrgyz Republic is to unconditionally reduce GHG emissions by 16.63% by 2025 and by 15.97% by 2030, under the business-as-usual scenario. Should international support be provided, GHG emissions will be reduced by 2025 by 36.61% and by 2030 by 43.62%, under the business-as-usual scenario.

The achievement of the NDC is underlain by mitigation actions and policies covering five sectors. However, the primary mitigation capacity is concentrated in the Energy, Agriculture, Forestry and Other Land Uses sectors.

In the **Energy sector**, around 60% of all GHG emissions in the country are concentrated. The mitigation capacity in this sector will be realized thanks to a decrease in the consumption of fossil fuels and an increase in the generation of energy based on renewable energy sources,

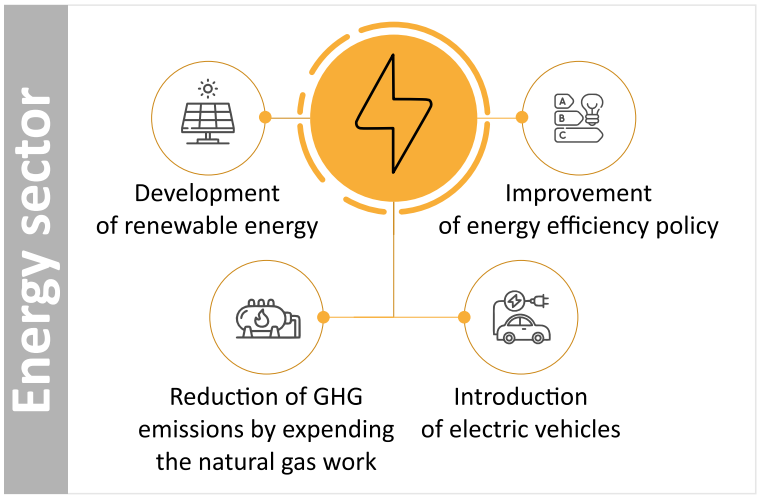
[1] https://unfccc.int/resource/docs/2015/cop21/rus/10a01r.pdf and https://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf

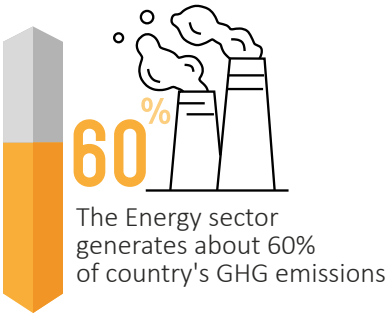
[2] https://unfccc.int/sites/default/files/resource/cma2018_03a01R.pdf and Decision 1/CP.21- https://unfccc.int/sites/default/files/resource/cma2018_03a01E.pdf

[3] https://unfccc.int/sites/default/files/resource/cma2018_03a01R.pdf and https://unfccc.int/sites/default/files/resource/cma2018_03a01E.pdf

[4] https://unfccc.int/sites/default/files/resource/CMA_2018_3a02R.pdf and https://unfccc.int/sites/default/files/resource/CMA2018_03a02E.pdf

as well as the modernization of energy supply systems. The promotion of a set of activities in energy efficiency will also contribute to the GHG emission reduction.





In the **Agriculture sector**, a GHG reduction will be achieved through:

reducing the livestock headcount, increasing productivity and improving the pedigree stock

as well as by expanding the area of cultivated organic crop farming lands

increasing efficiency of the application of manure as a fertilizer and generation of biogas

In the **Forestry and Other Land Uses sector**, the proposed measures to preserve and increase the area of forests, as well as the proposed expansion of perennial plantations have both adaptation and mitigation potential in the sector.

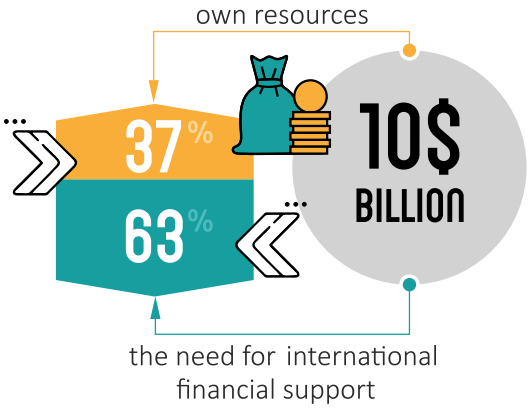
The NDC also contains a list of **adaptatinon measures** that will reduce economic losses from climate change impacts and cover the most vulnerable sectors: Water Resources and Agriculture, Energy, Emergencies , Public Health, Forest and Biodiversity, as well as new intersectoral sections: Climate-Resilient Areas and Green Cities.

By 2025, a foundation will be laid for the National System of Monitoring, Reporting and Verification to assess the effectiveness of the implementation of mitigation and adaptation actions and the funding thereof.

The updated NDC will include integrated provisions facilitating the achievement of gender equality, as well as an improvement in the protection of vulnerable groups such as youth, low-mobility groups and the population living below the poverty line. The Implementation Plan for the Updated NDC and the suggested adaptation and mitigationactions carry dual benefits and contribute to the achievement of the Sustainable Development Goals.

The overall estimated cost of the implementation of mitigation and adaptation actions will total at around **USD 10 billion** including **37%** coming from own resources (funding by

the private sector, international donors, and the national budget) and **63%** sought in the form of investments of international financial assistance. For a lower middle-income country susceptible to frequent natural disasters and suffering from major adverse impacts of the ongoing global COVID-19 pandemic, investments of such a scale are significant. Therefore, foreign financial support aimed at the implementation of mitigation and adaptation actions will render a positive transformation effect on the national economy and a contribut to the global efforts to fight climate change.



NATIONAL CIRCUMSTANCES

Despite the difficult internal political conditions, significant infrastructure projects in the energy sector have been implemented in the country during 2010 – 2020. This enabled the wider use of the Kyrgyz Republic's hydropower potential. Integration into the Eurasian Economic Union (EAEU), together with easier access to the trade and labor markets of the EAEU countries and the adoption of a regulatory framework, has intensified competition in the domestic market with manufacturers and suppliers from EAEU member states.

The disruption of the socio-economic development of the Kyrgyz Republic in recent years was due to the above-mentioned political processes and international development environment, the financial crisis, and, of course, the COVID-19 pandemic. To restore economic and social stability after the COVID-19 pandemic in the Kyrgyz Republic, a package of priority measures was adopted, which included elements of «green recovery». In addition to measures of social support for the population and assistance to business entities, the action plans of the Cabinet of Ministers of the Kyrgyz Republic covered important areas related to mitigating and adapting to climate change such as the construction and rehabilitation of the drinking water supply and irrigation systems, and the creation of favorable conditions for attracting investments to promote projects on renewable energy sources (RES).

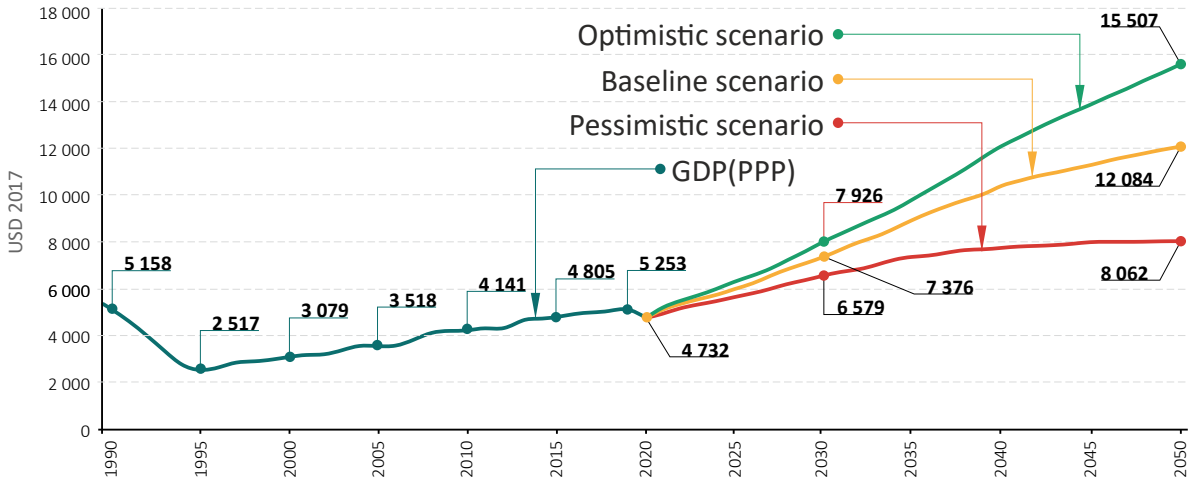
Natural cycles play an important role in the development of RES and other sectors vulnerable to the effects of climate change, and generally form a negative background. The mountainous landscape, in the context of climate change, influences the high vulnerability of the socio-economic and ecological systems to the impacts of natural disasters. Crises in the energy sector, irrigation, and other sectors of the national economy, induced by low water levels, intensify the need to use resource-saving technologies.

The country has developed and is implementing the following strategic documents related to the NDC: National Development Strategy of the Kyrgyz Republic for 2018-2040, Climate Investment Program of the Kyrgyz Republic and Program for the Development of a Green Economy in the Kyrgyz Republic for 2019-2023. The further development and promotion of the climate agenda will be accompanied by active actions by the Cabinet of Ministers of the Kyrgyz Republic. The importance of climate action and the need to improve the national climate policy has received institutional confirmation in the creation of the State Committee on Ecology and Climate of the Kyrgyz Republic, which is an authorized state body for environmental safety and climate sustainability, and whose chairman is a member of the Cabinet of Ministers of the Kyrgyz Republic.

Based on the analysis of the dynamics of the main factors determining the development of the Kyrgyz Republic, population growth and economic development, three scenarios of changes in the Kyrgyz economy were modeled in terms of GDP (PPP) in 2017 USD. In the long term, moderate economic growth rates are predicted, even in the most optimistic ("high") scenario. The projected average annual GDP growth in the «high» scenario will be about 4.5%, 3.5% in the «average», and 2% in the «low». At the same time, all three scenarios assume a slight slowdown in real GDP growth until 2040.

According to forecasts, the population in the Kyrgyz Republic may increase by 1.8–3.5 million people by 2050 and range from 8.3 to 10 million people.

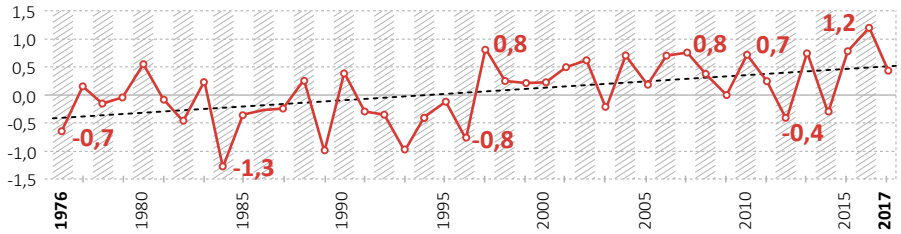
Dynamics of GDP (PPP) per capita for the period 1990-2017 and projection for three scenarios until 2050, in USD 2017



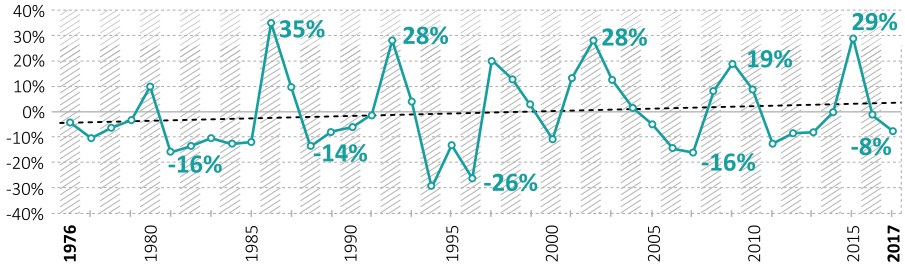
Climate change in the Kyrgyz Republic:

Results of the latest study on observed climate change in the Kyrgyz Republic[5] and analyses of the main climate factors showed the following changes for the country as a whole:

Deviations of the average annual air temperature from the climatic norm in the period 1976-2017, °C



Deviation of precipitation from the climatic norm in the period 1976-2017,%



[5] Kretova Z. «Climate change in the Kyrgyz Republic». IFAD Project Livestock and Markets Development 2019

The analysis and forecast of climate change were made based on an ensemble of 25 general circulation models of the atmosphere and ocean of the international project CMIP6. According to its conclusions, the following is expected: an increase in the annual air temperature in the range of 1.5 to 1.9°C, with the largest increase in temperature in the summer- in the range of 1.7 to 2.2°C; the preservation of interannual variability of precipitation with a slight tendency to increase in all seasons of the year; and an increase in the annual amount of precipitation in the range from 5 to 6 %, with the largest increase in winter from 9 to 13 %; and in summer a slight increase in precipitation in the range of 2 to 3%.

MITIGATION

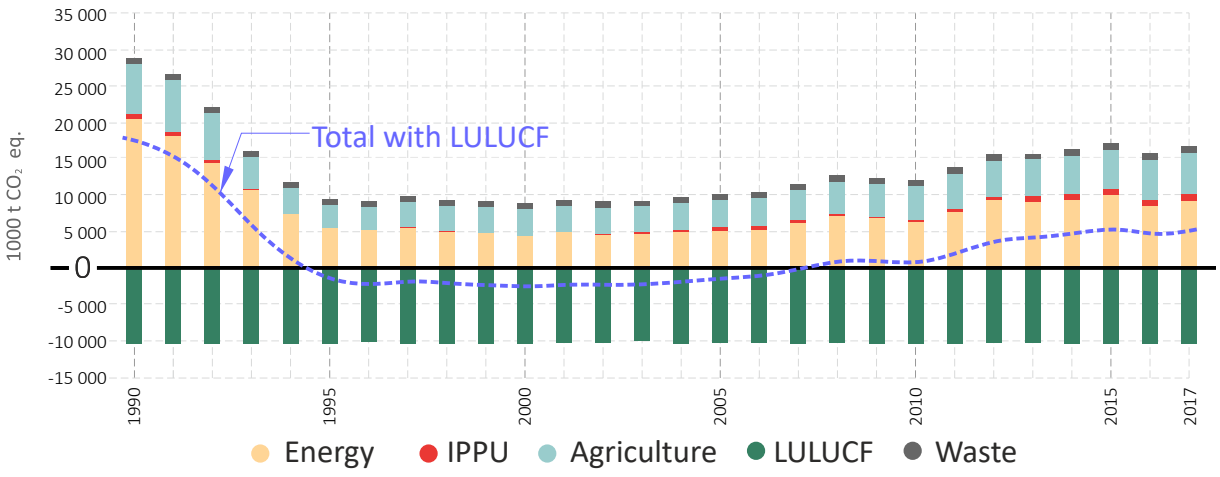
The mitigation measures of the Kyrgyz Republic were developed on the basis of data from the 4th National Greenhouse Gas Inventory (4NGHGI), carried out according to the IPCC 2006 methodology, which was new for the country[6]. 4NGHGI for the period 1990-2017[7] covers all GHG emissions and removals in the country: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and hydrofluorocarbons (HFC), and also provides total GHG emissions and removals converted to CO_2 equivalent according to GWP values[8] from the IPCC Second Assessment Report[9]. Accordingly, the effect of the presented mitigation measures is also calculated in CO2 equivalent and covers all sectors: Energy, Industrial processes and product use (IPPU),

Agriculture, Forestry and Other Land Use (AFOLU) and Waste. The time horizon for mitigation measures planning in the updated NDC is defined for the period up to **2025 and 2030**. At the same time, the design of GHG emissions projections was carried out for the period **2017-2050**. **2017** is defined as the baseline year for mitigation actions and the year with the most up-to-date GHG emissions data. The calculation of emission reductions from mitigation measures was carried out in relation to the BAU of net GHG emissions.

Situation: Results of the fourth National GHG Inventory

In 2017, the total GHG emissions in the Kyrgyz Republic amounted to 15,868.040 thousand tons of CO_2 equivalent, and removals – 10,367.314 thousand tons of CO_2, and net GHG emissions were 5,500.727 thousand tons of CO2 equivalent. In 2017 compared to 1990, total and net GHG emissions decreased by 43.93%, and by 69.49% respectively. GHG emissions and removals trends in the period 1990-2017 by sectors are presented in the diagram below

GHG emissions and removals trend by sources, 1990-2017



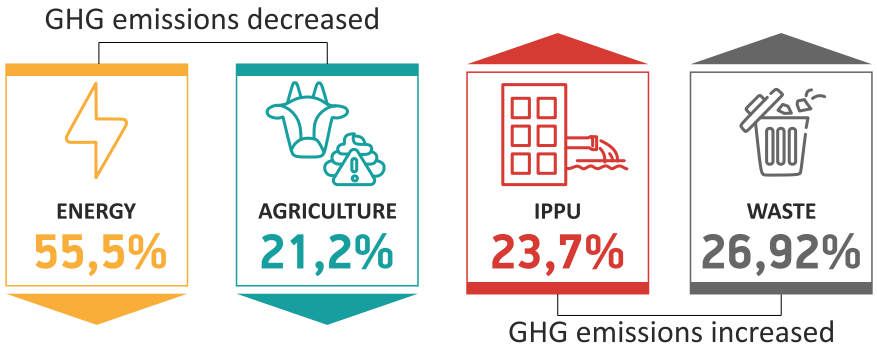
[6] IPCC. 2006. Guidelines for National Greenhouse Gas Inventories.

[7] SCEC, GEF-UNEP. Inventory of GHG emissions and removals in the Kyrgyz Republic for the period 1990-2017 At the moment it is at the stage of approval.

[8] Global Warming Potential

[9] https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_sar_wg_I_full_report.pdf

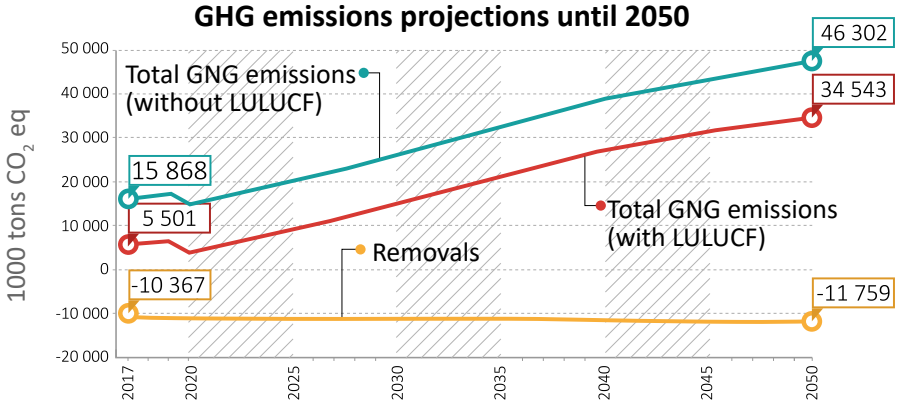
In 2017 compared to 1990, GHG emissions decreased: in the energy sector - by 55.53% and in the agriculture sector- by 21.18%. However, GHG emissions increased in the IPPU sector by 23.69%, and in the Waste sector- by 26.92%. Furthermore, the CO_2 absorption in the LULUCF sector remained almost unchanged (increased by 0.91%).

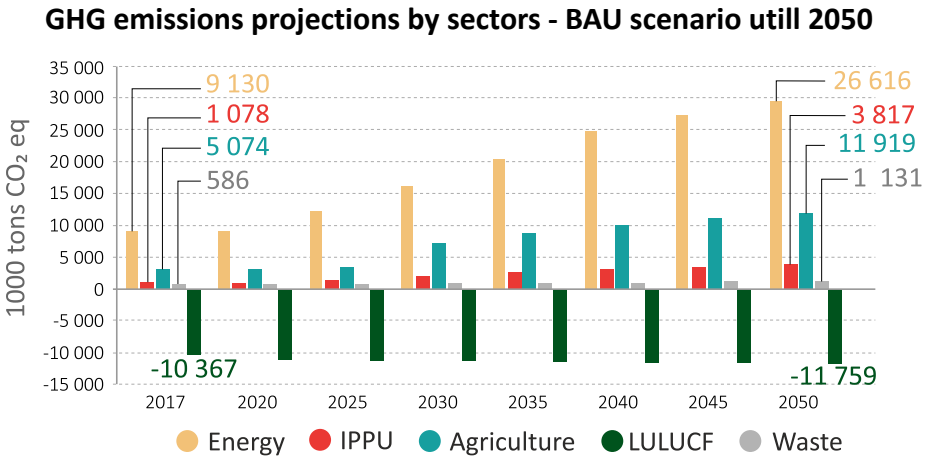


However, in the period 2007-2017, there was a tendency of growth in GHG emissions, which necessitates the strengthening of additional measures to develop a longterm national strategy for low-carbon development.

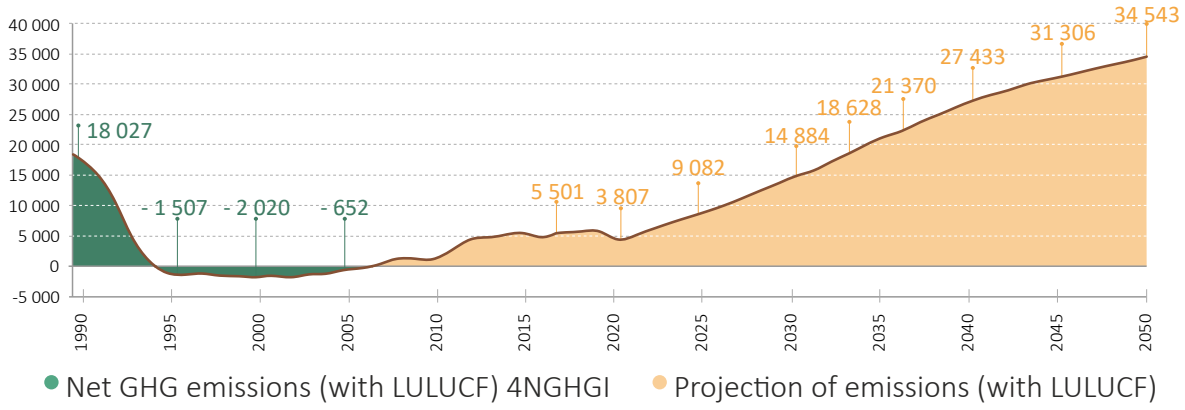
GHG emissions projections:

The projection of GHG emissions was developed based on the correlation of a long time series of the main factors of development (economic and demographic) with the total GHG emissions. Based on the correlation equations of the linear trend of GHG emissions and GDP (PPP), the trends of GHG emissions in the Kyrgyz Republic were modeled according to the baseline scenario «business as usual» (BAU) for the period up to 2050.



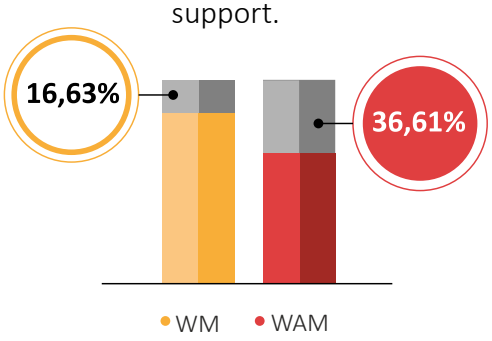


Trends of GHG emissions (with LULUCF) (1990-2017) and GHG emissions projection until 2050, 1000 t CO_2 eq.

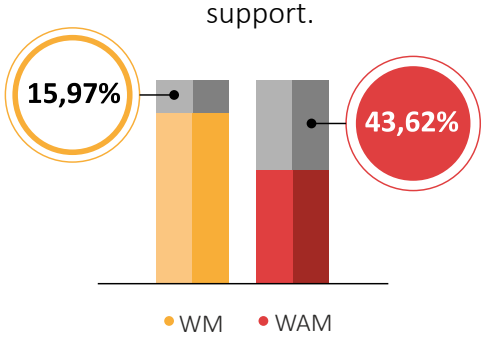


The general mitigation goal of the Kyrgyz Republic as a contribution to the achievement of the goal of the Paris Agreement:

In 2025, GHG emissions will be reduced by **16.63%** on the GHG emission level under the BAU scenario, and by **36.61%** subject to international support.



n 2030, GHG emissions will be reduced by **15.97%** of the GHG emission level under the BAU scenario, and by **43.62%** subject to international support.



This goal will be achieved through mitigation measures that cover key areas of the Kyrgyz economy as presented below. All measures are distributed according to two scenarios:

1 **"With measures" (WM),** which includes measures that will be implemented by the Kyrgyz Republic without any conditions, i.e., own resources

2 **"With additional measures" (WAM)** that can be implemented subject to international support.

Updating the indicators is possible by:

- improving the quality of the national GHG inventory;
- updating activity data;
- methodological approaches of a higher tier;
- updating emission factors;
- updating indicators used in the development of the BAU scenario;
- updating the target indicators of mitigation and adaptation measures;
- and corrective actions after QA/QC procedures.

A fair and ambitious updated NDC based on national circumstances:

In 2017, the total GHG emissions in the Kyrgyz Republic amounted to 0.032% of the total global GHG emissions, and net emissions totaled 0.011%. This situation is largely the result of the widespread use of hydroelectric power plants. However, the expected climate changes may lead to a decrease in water flow and a reduction in hydropower potential.

The ambition and fairness of the overall mitigation goal for the Kyrgyz Republic is consistent with national conditions and efforts to implement the measures laid down in the updated NDC. The Kyrgyz Republic is a country with a low average income per capita[10]. In 2017, GDP per capita in terms of PPP in the Kyrgyz Republic was USD 3,735, or 22% of the global level of this indicator (USD 17,100)[11]. To meet growing needs, the economy of the Kyrgyz Republic will develop, and GHG emissions will also increase.

The updated and strengthened NDC of the Kyrgyz Republic represents progress compared to INDC, since in 2030 the emission reductions relative to the BAU scenario increase from 11.49% to 15.97% (+4.49%), and subject to international support from 29,00% to 43.62% (+14.62%). Mitigation measures by sector are presented in Annex 1, with the target values reflecting the estimated GHG emission reductions in 1000 t CO_2 equivalent.

The overall results of mitigation measures of the Kyrgyz Republic to reduce emissions and increase GHG removals relative to the projected net emissions of the Kyrgyz Republic under the BAU scenario and quantitative values of reductions as a contribution to achieving the goals of the Paris Agreement in 2025 and 2030 are presented in the tables below.

2025

Sector	Contribution from internal resources (WM)		Contribution through international support (WAM)		Total contributions from internal and international resources	
	Reduction in 1000 tons of CO_2 eq.	% reduction relative to BAU	Reduction in 1000 tons of CO_2 eq.	% reduction relative to BAU	Reduction in 1000 tons of CO_2 eq.	% reduction relative to BAU
Energy	1 215,120	13,38	1 810,941	19,49	3 026,061	33,32
IPPU	NE	NE	NE	NE	NE	NE
Agriculture	95,777	1,05	NE	NE	95,777	1,05
LULUCF	199,561	2,20	3,470	0,04	203,031	2,24
Waste	NE	NE	NE	NE	NE	NE
Total	**1 510,458**	**16,63**	**1 814,411**	**19,98**	**3 324,868**	**36,61**

[10] In the classification of countries by income of the World Bank- https://databank.worldbank.org/views/reports/reportwidget.aspx?Report_Name=CountryProfile&Id=b450fd57&tbar=y&dd=y&inf=n&zm=n&country=KGZ

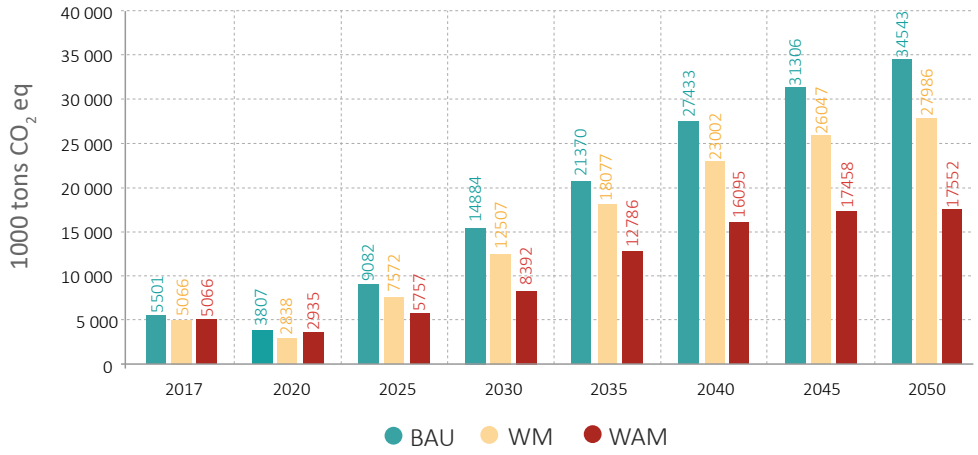
[11] https://www.worldometers.info/gdp/gdp-per-capita/

2030

Sector	Contribution from internal resources (WM)		Contribution through international support (WAM)		Total contributions from domestic and international resources	
	Reduction in 1000 tons of CO_2 eq.	% reduction relative to BAU	Reduction in 1000 tons of CO_2 eq.	% reduction relative to BAU	Reduction in 1000 tons of CO_2 eq.	% reduction relative to BAU
Energy	1 899,783	12,76	4 111,827	27,63	6 011,610	40,39
IPPU	NE	NE	NE	NE	NE	NE
Agriculture	165,436	1,11	NE	NE	165,436	1,11
LULUCF	311,771	2,09	3,470	0,02	315,241	2,12
Waste	NE	NE	NE	NE	NE	NE
Total	**2 376,990**	**15,97**	**4 115,297**	**27,65**	**6 492,287**	**43,62**

The projections of net GHG emissions in the Kyrgyz Republic until 2050 under three scenarios, as a result of the implementation of measures, are presented in the diagram below.

GHG emissions projections under three scenarios until 2050, 1000 t CO_2 eq.



The availability of conceptual strategic documents on low-carbon development and a system of national accounting and data collection on climate action contributes to the implementation of mitigation measures, as well as the development of sectoral NAMAs[12].

[12] Nationally Appropriate Mitigation Actions

The necessary financial support for the implementation of mitigation measures (USD million 2021)

The implementation of the above measures will be supported by both internal and external financial resources, which are intended to be mobilized from various international sources of climate finance. The estimated needs for the implementation of measures and the achievement of the mitigation goal of the Kyrgyz Republic are presented in the table below.

Sector	Resources required*	Own** funds: scenario WM	International support: scenario WAM***
Energy	7 155,807	2 857,100	4 298,707
IPPU	0,551	0,106	0,445
Agriculture	19,257	12,139	7,118
LULUCF	63,007	36,233	26,774
Waste	3,820	0,500	3,320
Total	**7 242,442 (100%)**	**2906,078 (40%)**	**4 336,364 (60%)**

* The required resources were calculated by national experts based on the cost of specific actions of the NDC Implementation Plan under the "Mitigation" section.
** Own resources refer to funds from the national budget in the amounts determined for the specified sector, as well as funds from the private sector, international donors, and current public investment programs.
*** International support refers to funds not currently supported by funding sources that need to be mobilized during the implementation period of the NDC.

ADAPTATION

The commitment and ambition of actions in the field of adaptation to climate change while updating the NDC is underlined by the process of updating the National Adaptation Planning (NAP) in the Kyrgyz Republic by the Cabinet of Ministers jointly with UNDP with the support of the Green Climate Fund.

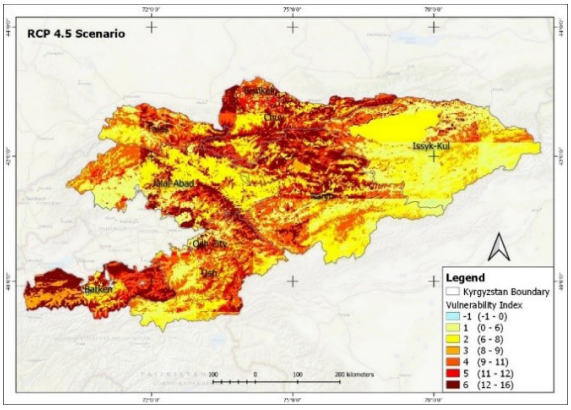
Adaptation measures are designed and presented in accordance with the three global adaptation goals of the Paris Agreement (Article 7): (1) strengthening adaptive capacity, (2) strengthening resilience to the negative impacts of climate change and (3) reducing the vulnerability of populations and systems to the impacts of these influences. The section includes sectoral and cross-sectoral measures that prioritize adaptation investments. They are developed through a risk and vulnerability assessment, a review of national and sectoral development policies, and a broad consultation process involving stakeholders from all sectors, involving the private sector, civil society, academia, women's associations, and youth NGOs.

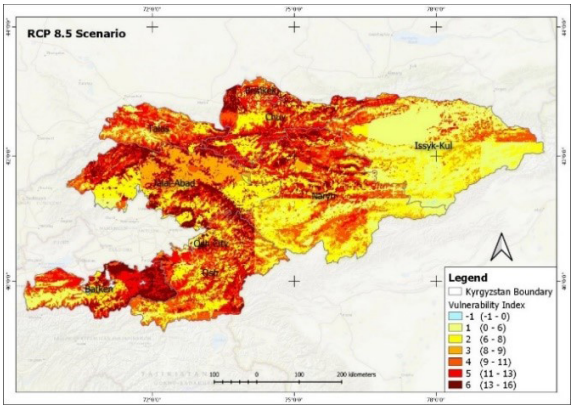
The developed measures of the NDC will be the basis for the ongoing NAP process, the results of which will be integrated into the next NDC in 2025. In this regard, the time horizon for NDC adaptation measures is set until 2025. The implementation of many adaptation measures depends on the successful mobilization of external funding. In this regard, some actions can only be initiated, but not fully completed within the planning horizon.

The NDC contains a list of adaptation measures that will reduce the economic losses identified by NDC1 and covers all the most vulnerable sectors: water resources, agriculture, energy, emergencies, public health, forestry and biodiversity, as well as new intersectoral sections "Climate Resilient Areas and Green Cities" and "Improving the Adaptation Reporting System".

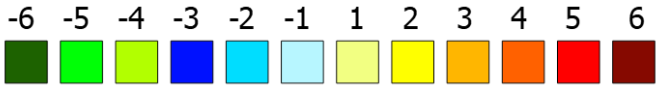
Vulnerability and Risk Assessment:

To develop adaptation measures in the process of updating the NDC, a comprehensive assessment of the impact of climate change was carried out[13] in the territory of the Kyrgyz Republic. This estimate was based on a comparison of the average parameter values for the period 1960-1990 and simulated data for two scenarios of the evolution of anthropogenic greenhouse gas emissions into the atmosphere RCP 4.5 and RCP 8.5 for 2050 under the BAU scenario (see Vulnerability Maps below).





Grades are given using the percentile class system. The score ranges from 6 to-1 for the most negative (increased vulnerability) impact to-1--6 for the positive (decreased vulnerability) impact with gradation on the maps by color:



The mapping of the assessment of risks and vulnerabilities of the territory of the Kyrgyz Republic to climate change was carried out on the basis of both climatic parameters and parameters not directly related to climate- geophysical and socio-economic. A comprehensive assessment of vulnerability to climate change was obtained by summing the scores obtained from the three main assessments: the assessment of the combined impact of climate change, the combined assessment of geophysical vulnerability and the combined assessment of socio-economic sensitivity.

To ensure the effective implementation and appropriate monitoring of the achievement of the set goals of adaptation measures, an Implementation Plan for the updated NDC was developed. Adaptation measures are presented in **Annex 2**.

Required financial resources for the implementation of adaptation measures (USD million 2021)

Sector	Total requirement*	Own resources**	Need for additional international support***
Water resources	1 977,65	577,06	1 400,59
Agriculture	276,00	83,00	193,00
Energy	64,92	25,19	39,73
Health care	144,05	2,66	141,39
Reducing the risks of climate emergencies	309,90	121,90	188,00

[13]"Assessment of Risks and Vulnerability to Climate Change. National Report for NDCs of the Kyrgyz Republic", HYDROC and UNDP, 2021

Sector	Total requirement*	Own resources**	Need for additional international support***
Forest and biodiversity	46,15	3,97	42,18
Climate resistant areas and green cities	12,65	1,90	10,70
Improving the adaptation reporting system	1,60	0,60	1,00
Total	**2 832,87 (100%)**	**816,28 (28,82%)**	**2 016,59 (71,18%)**

* The required resources were calculated by national experts based on the cost of specific actions of the NDC Implementation Plan under the "Adaptation" section.
** Own resources refer to funds from the national budget in the amounts determined for the specified sector, as well as funds from the private sector, international donors, in current public investment programs.
*** International support refers to funds not currently supported by funding sources that need to be mobilized during the implementation period of NDC.

Adaptation measures with co-benefits to GHG emissions reduction

Mitigation and adaptation actions are often complementary. Mitigation measures can increase adaptive capacity, and adaptation measures can reduce GHG emissions. Mitigation can be beneficial for climate change adaptation to some extent through its contribution to disaster risk reduction and community resilience, crop and livestock restructuring, the development of irrigation technologies, the use of ecological transport and highly efficient heating and cooling systems, and action on the development of renewable energy sources.

At the same time, adaptation to climate change is also beneficial for mitigation. The most significant contribution to mitigation is made through actions in agriculture and the development of mountainous and hard-to-reach areas, in particular afforestation and reforestation activities.

Adaptation measures with co-benefits to GHG emissions reduction are presented in **Annex 3**.

MONITORING AND EVALUATION

Over the past few years, the coordination mechanism for the preparation of the NDCs has undergone significant changes, and the institutional framework for promoting climate change issues has been strengthened. As a result of structural changes, the status of a state body responsible for developing policy in the field of environmental protection was raised and the **State Committee on Ecology and Climate of the Kyrgyz Republic** (SCEC) was established. Under the chairmanship of the Chairman of the Cabinet of Ministers of the Kyrgyz Republic, a new coordination structure under the **Coordination Council on Climate Change, Ecology and the Development of a Green Economy** with a broader scope of climate issues was formed. It is designed to fulfill the tasks of ensuring the overall coordination and integrated strategic management of the processes of fulfilling the obligations of the Kyrgyz Republic to achieve the SDGs, measures to mitigate and adapt to climate change, as well as the development of a «green» economy in the Kyrgyz Republic. The **Climate Finance Center under the SCEC** has been identified as the secretariat of this Coordination Council.

The institutional structure for the implementation of the NDC also includes sectoral government bodies that oversee the development and implementation of policies in vulnerable

sectorsq which are also a source of information and statistical data (National Statistical Committee of the Kyrgyz Republic, industrial enterprises, and other organizations).

The strategic legislative framework for the development and implementation of climate change policy is determined by the **National Development Strategy of the Kyrgyz Republic for 2018-2040**, approved by the Decree of the President of the Kyrgyz Republic of October 31, 2018 No. 221, the Decree of the President of the Kyrgyz Republic dated March 19, 2021 No.77**«On measures to ensure environmental safety and climate sustainability»**, as well as sectoral policy documents in the field of emergencies, health care, forestry and biodiversity, agriculture, industry, energy, waste and water resources management.

At the same time, based on the results of the analysis, the regulatory and legal framework in the field of GHG emissions requires significant adjustments. In particular, it is necessary to revise the fundamental sectoral Law of the Kyrgyz Republic No. 71 dated May 25, 2007, «On state regulation and policy in the field of emission and absorption of GHGs» which defines the framework for organizing the process of inventory and monitoring of GHGs. The revision of Law No. 71 will begin the institutionalization and formation of a reliable national system for climate change monitoring and evaluation: mitigation MRV (assessment of progress in GHG emissions reduction and GHG emissions projections), further monitoring and evaluation of the effectiveness of the implementation of adaptation and mitigation measures and their financing, the preparation of subsequent NDCs at the legislative level, as well as the creation of conditions for strengthening the capacity of all stakeholders involved in the process.

It is assumed that until 2030 (see **Annex 4.2**) the work will be completed, and the relevant information will be submitted to the UNFCCC Secretariat.

The monitoring and evaluation of the degree of implementing the NDC will be based on the developed Implementation Plan[14], which combines mitigation and adaptation measures and contains assessment indicators that will become an integral part of the implementation of the NDC. It presents the agreed upon actions for the implementation of the measures, defines the framework of responsibility, calculates the indicative need for financial resources for their implementation, identifies current national capacities and shows the need for additional international support. To this end, the relevant sections on the implementation of NDC measures will be integrated into National Communications and Biennial Update Reports, and then in the Biennial Transparency Reports.

.GENDER ASPECTS OF THE IMPLEMENTATION OF THE NDC MEASURES

Integrating a gender approach into the analysis and decision-making processes in the field of sustainable development and climate change is important due to the fact that women and men react differently to changes in the state of the environment and may be affected in different ways according to the consequences of climate change. In households, especially those in rural areas, the main burden in the field of the availability and delivery of water for domestic needs and the provision of fuel for heating and cooking falls primarily on women and children. As climate change increases, these challenges become more complex.

Women often face difficulties when it comes to accessing financial resources, capacity building activities and technology transfers. Women are often underrepresented in climate change decision-making at all levels. This severely limits their ability to contribute to the

[14] http://cfc.kg/

implementation of solutions and apply their knowledge.

However, existing statistics and research do not fully identify gender aspects in all areas. It is necessary to consider the role of women in the development of policies, not only as recipient of policy, but also as important agents of its development and implementation. At the institutional level, activities are carried out to achieve gender equality, including gender analysis and the development of gender-responsive measures as part of the movement towards sustainable development. During the development of the NDC, the following issues were identified that need to be addressed:

- development of indicators for the effectiveness of public policies with increased integration of the principle of gender equality.
- the gap in living conditions between urban and rural areas, as well as steady trends in the deterioration of infrastructure in the regions.
- women are often a key part of communities, families, and local economies. As a result, it is women who primary feel the destructive consequences of environmental changes and largely determine the community's ability to adapt to them.
- the gender imbalance in the decision-making system on access to natural resources such as water, land, etc. at the level of local self-government structures.
- institutional mechanisms for the transmission of knowledge and ensuring safety in local communities (feldsher-midwife stations, hospitals, schools, etc.) are financed on a leftover basis and are not ready for the challenges associated with climate change.
- the lack of gender aspects analysis of the consequences of climate change and other aspects of the environmental crisis leads to the lack of a clear picture of the distribution of risks for various social groups of the population.
- the lack of constructive mechanisms for the equitable access to natural and social resources, in the context of the challenges of climate change, can lead to social conflicts.

Based on studies of national communications for the period from 2050 to 2100, a peak in the decline of water availability in the region is predicted. Thus, it is necessary today to see women as important active actors in the system of resource allocation and conflict reduction, which will help to mitigate the severe consequences of climate change.

NDC AND SDGs

The developed Implementation Plan for the Updated NDC and its proposed adaptation and mitigation actions have a co-benefit and contribute to the achievement of the Sustainable Development Goals (SDGs). According to the National Voluntary Review of SDG Achievement in the Kyrgyz Republic prepared in 2020 by the Government of the Kyrgyz Republic, the SDG are included in state policy and reflected in the National Development Strategy for 2018-2040, which were based on a human-centered approach. The conceptual idea of the strategic documents is to ensure a high quality and decent standard of human life within the framework of the concept of sustainable economic growth.

The Kyrgyz Republic adheres to a global commitment of "leave no one behind," with a special focus and priority attention on the most vulnerable groups of the population[15].

According to this review, progress towards the SDG targets has different percentages and is at different stages of action taken by the Cabinet of Ministers of the Kyrgyz Republic and other

[15] Government of the Kyrgyz Republic, Ministry of Economy. UNDP, GIZ. National Voluntary Review of the Achievement of Sustainable Development Goals in the Kyrgyz Republic. –B., 2020

stakeholders in the country. The implementation of the actions to respond to climate change, presented in the NDC, will contribute to the achievement of the sustainable development goals of the Kyrgyz Republic. Climate change adaptation actions in the updated NDC contribute most to the achievement of Goal 13- take urgent action to combat climate change and its impacts and Goal 11- make cities inclusive, safe, resilient and sustainable. Climate change mitigation actions in the updated NDC have the greatest contribution to the achievement of Goal 7- ensure access to affordable, reliable, sustainable and modern energy for all and Goal 12- ensure sustainable consumption and production patterns.

The contribution of NDC measures to the SDGs of the Kyrgyz Republic is presented in **Annex 4.1**.

CONCLUSION

The responses to the challenges of climate change are complicated by the low level of awareness of climate risks, both in public administration and among the population. A key challenge for the coming period is to build public understandings of the seriousness of the climate threats facing the country. The Kyrgyz Republic has already taken a number of steps in this direction: an analysis of the situation in the field of climate change education has been carried out, strategic priorities of climate change education have been developed, and a number of pilot projects have been implemented. At the same time, there is a need for comprehensive capacity building and awareness-raising measures for all sectors of society.

An essential feature of climate policy is its intersectoral nature, requiring a high level of coordination between all stakeholders, inqluding government agencies, development partners, the private and non-governmental sectors, both among themselves and in their internal structures, considering the formation of institutional and intellectual potential, as well as the strengthening of the comprehensive expertise on climate issues: climateecology, climate-economics, climate-finance, and climate-sectoral issues.

The Kyrgyz Republic has taken certain steps towards the development of national and sectoral climate change strategies. However, there is a need to ensure consistency in the numerous strategies, plans and funding opportunities currently available in the country. Green projects were identified as one of the possible climate policy initiatives, as well as the promotion of green technologies, which requires the formation of a favorable environment for their use, and at the initial stage will require significant subsidies for their sufficient financial attractiveness.

This NDC represents the long-term vision and plans of the Kyrgyz Republic. It will help consolidate fragmented climate change policies and serve as a guide for their implementation. The NDC is one of the key tools for mainstreaming the long-term agenda and actions that need to be taken to ensure long-term sustainability. This document will serve as a starting point for starting a substantive dialogue with development partners, and climate organizations to attract the resources the country needs.

Annexes to updated NDC

Annex 1. Mitigation measures

Objectives and mitigation measures of the updated NDC are presented for all sectors of GHG emitters and sinks. The target indicators are presented in the context of mitigation sectors, while reflecting the calculated GHG emission reductions as a contribution to the achievement of the Paris Agreement targets in 2025 and 2030.

Sector	Energy		
Goals	**Measures[16]**	**Target indicators, 1000 tons of CO_2 eq.**	
		2025	**2030**
1. Reduction of GHG emissions	1.1. Reducing coal consumption through gasification of households in the country (WM)[19]	809,979	971,247
	1.2. Replacement of light vehicles with internal combustion engines for electric vehicles (WAM)	444,990[17]	423,181[18]
	1.3. Improving Traffic Management and Cycling Infrastructure Development (WM)	253,037	747,963
	1.4. Reduction of electricity losses during transmission (WM)	13,668	13,668
	1.5. Reduction of electricity losses during distribution (WM)[19]	10,888	30,275
	1.6. Replacement of buses with diesel/gasoline fuel engines by buses with gas-powered engines in Bishkek (WM)	7,967	14,734
	1.7. Reconstruction and improvement of the heat supply system of the city of Bishkek (WM)	3,357	3,357
	1.8. Replacement of diesel/ gasoline fuel engines buses with buses with gas-powered engines in Osh city (WAM)	2,749	4,416

[16] The presented measures were collected and discussed during the consultations of the first round of sectoral technical meetings. The calculation methodology was presented, discussed and agreed upon in a second round of technical meetings with sector stakeholders.
[17] Evaluation by UNDP.
[18] Evaluation by UNDP.
[19] The scenario in which this measure relates is shown in brackets.

Sector	Energy		
Goals	Measures[16]	Target indicators, 1000 tons of CO_2 eq.	
		2025	2030
	1.9. Expansion of the trolleybus fleet by replacing buses with internal combustion engines in Bishkek (WAM)	0,882	0,882
	1.10 Replacement of buses with diesel/gasoline fuel engines by buses with gas-powered engines on suburban routes in Bishkek (WAM)	Not estimated (NE)	2,501
2. Improvement of energy efficiency	2.1. Scaling up the installation of energy efficient stoves in households (WAM)	772,449	886,314
	2.2. Improving energy efficiency of small boiler houses by replacing coal-fired boilers with gas-fired ones (WAM)	402,203	1 223,697
	2.3. Construction of new buildings according to energy efficient CSR (WM)	14,552	16,866
	2.4. Energy efficiency improvement of existing Buildings (WAM)	NE	10,868
3. Development of RES	3.1. Expanding the use of biogas plants (BGP)[20] (WAM)	187,666	1 311,980
	3.2. Increasing the capacity of existing HPSs (WM)	98,935	98,935
	3.3. Electricity generation at existing private small hydropower plants (WM)	2,737	2,737
	3.4. Expansion of the application of solar heat collectors (WAM)	NE	78,400
	3.5. Construction of new hydropower plants (WAM)	NE	64,606
	3.6. Construction and launch of new small hydropower plants (WAM)	NE	49,796
	3.7. Development of geothermal energy (heat pumps) (WAM)	-	38,590

[20] The development of the use of Biogas Plants (BGP) includes the potential of entities dealing with organic waste in all sectors, but must be accounted for in the reporting for the Energy sector under the general category "Fuel Combustion" and refers to the scenario "With additional measures".

Sector	Energy		
Goals	Measures[16]	Target indicators, 1000 tons of CO_2 eq.	
		2025	2030
	3.8. Solar power development (WAM)	NE	13,000
	3.9. Wind energy development (WAM)	NE	3,594
4. Strengthening the national MRV system and introducing new technologies	4.1. Improving Policy and Legislation for LCD (WAM)	NE	NE
	4.2. Development and implementation of a sector MRV system (WAM)	NE	NE
	4.3. Capacity building of staff and awareness of the population, taking into account the interests of women, youth and vulnerable groups (WAM)	NE	NE
	4.4. Conducting a Technology Needs Assessment for the Development of Multi-Scale RES (WAM)	NE	NE

Explanations:

All of the listed measures with mitigation potential fall into two categories according to scenarios: (a) With measures (WM), which are supported by financial resources and (b) With additional measures (WAM), for the financing of which it is necessary to mobilize international support. Note that the measure to expand the use of biogas plants in agriculture, at landfills and wastewater treatment plants in cities, as well as in the food industry is represented by an estimated mitigation potential, the implementation of which is expected to begin in 2025.

The cumulative total volumes of the estimated GHG emission reductions (in 1000 tons of CO_2 eq.) For scenarios and time periods up to 2050 are presented in the table below.

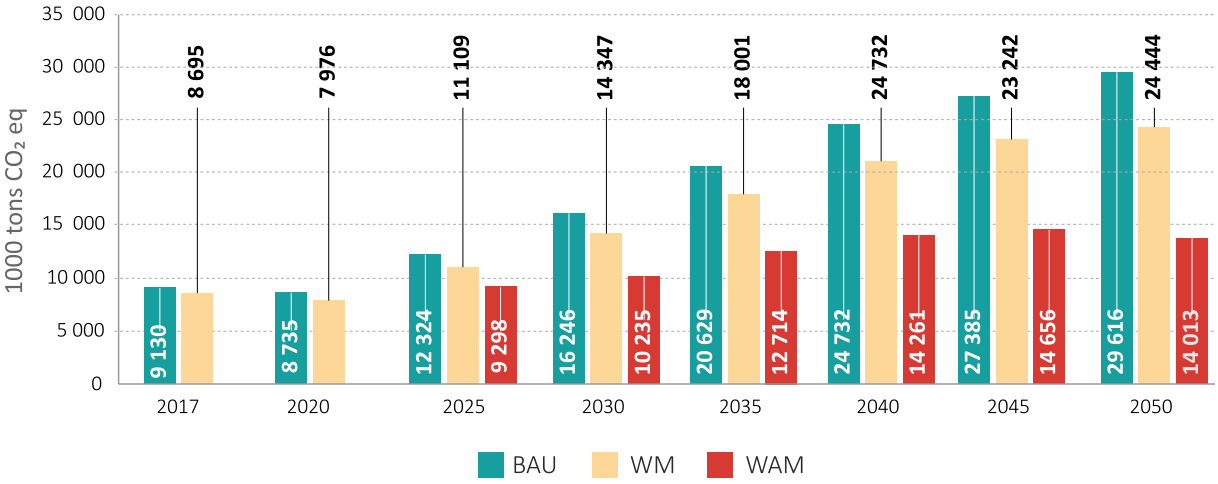
Years	With measures	With additional measures
2017-2020	2 364,245	-
2021-2025	5 241,245	1 812,705
2026-2030	7 895,081	13 962,476
2031-2035	11 527,208	24 030,845
2036-2040	15 768,299	29 868,526
2041-2045	19 881,387	38 936,204
2046-2050	23 731,817	48 382,842

The indicated CO_2 reduction will reduce the GHG emissions of the sector in relation to the projection of sectoral emissions of the BAU scenario (see the table by years)

Years	WM scenario,% of BAU	WAM scenario,% of BAU
2020	8,70	-
2025	9,86	14,69
2030	11,69	25,31
2035	12,74	25,63
2040	14,43	27,91
2045	15,13	31,35
2050	17,46	35,22

The dynamics of GHG emissions from the tnergy sector until 2050 under three scenarios are presented in the diagram below.

GHG emissions projections in Energy sector under three scenarios until 2050



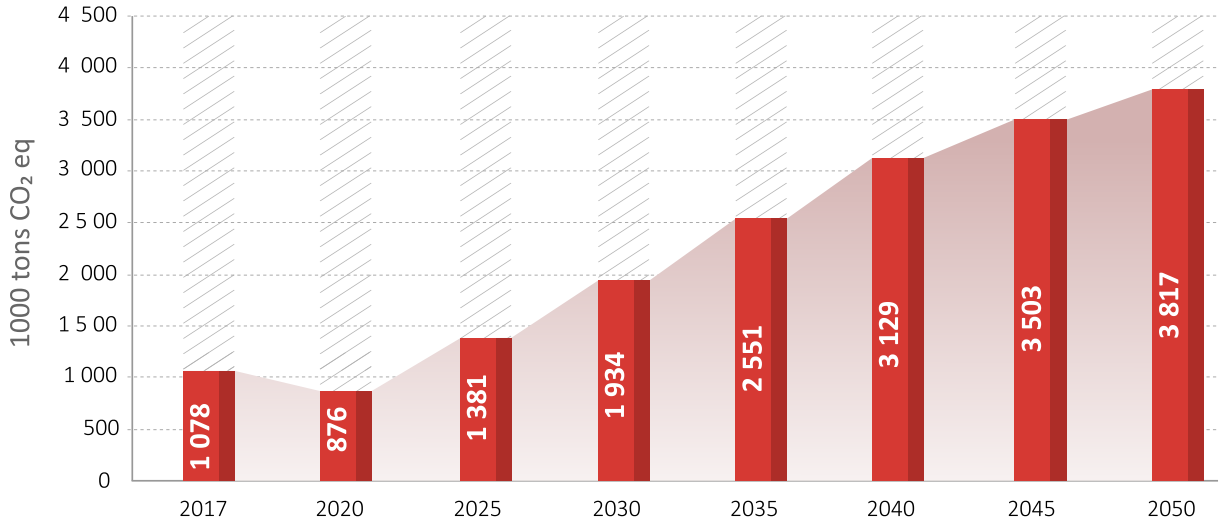
Sector	IPPU		
Goals	Measures	Target indicators, 1000 tons of CO_2 eq.	
		2025	2030
1. Development of RES	1.1. Development of biogas plant based on food industry waste (WAM)	Considered in the indicators of the Energy sector	Considered in the indicators of the Energy sector
2. Strengthening the national MRV system and the introduction of new technologies	2.1. Improving accounting systems, policies and legislation for MRV (WAM)	NE	NE
	2.2. Development and implementation of a sector MRV system (WAM)	NE	NE

Sector	IPPU		
Goals	Measures	Target indicators, 1000 tons of CO_2 eq.	
		2025	2030
	2.3. Capacity building of staff and awareness of the population, taking into account the interests of women, youth and vulnerable groups (WAM)	NE	NE
	2.4. Conducting a Green Manufacturing Technology Needs Assessment (WAM)	NE	NE

Explanations:

During the stakeholder consultations, no mitigation measures have been proposed that would directly lead to reductions in GHG emissions between 2020 and 2030 in the IPPU sector. The only proposal for the introduction of biogas plants using organic waste from the food industry as raw material belongs to the energy sector. All measures fall under the category of regulatory measures aimed at improving reporting and establishing an MRV system for collecting data and exploring the possibilities of new technologies to reduce GHG emissions in the sector. Therefore, the dynamics of future emissions from the sector will be aligned with the BAU scenario (see chart below).

IPPU sector GHG emissions projections until 2050



Sector	Agriculture		
Goals	Measures	Target indicators, 1000 tons of CO_2 eq.	
		2025	2030
1. Reduction of current GHG emissions	1.1. Expansion of arable land for organic farming (WM)	70,824	96,915
	1.2. Increase in the productivity of the breed herd for a gradual reduction in livestock (WM)	24,952	68,521
	1.3. Improvement of manure utilization (WAM)	NE	NE
2. Increasing the absorption of GHG in the Agriculture	2.1 Horticulture and agroforestry development (WAM)	Considered in the LULUCF sector	Considered in the LULUCF sector
3. Development of RES	3.1. Development of biogas plants on large livestock complexes and farms (WAM)	Considered in the Energy sector	Considered in the Energy sector
4. Strengthening the national MRV system and introducing new technologies	4.1. Improvement of policy and legislation for LCD (WAM)	NE	NE
	4.2. Development and implementation of a sector MRV system (WAM)	NE	NE
	4.3. Capacity building of staff and public awareness, considering the interests of women, youth and vulnerable groups (WAM)	NE	NE
	4.4. Conducting a climate smart agriculture Technology Assessment (WAM)	NE	NE

Explanations:

Direct reductions in GHG emissions in the "agriculture" sector are possible as a result of a decrease in the number of livestock, a decrease in methane emissions from enteric fermentation of animals,a decrease in methane and nitrous oxide emissions from manure management, andan increase in the area of arable land allocated for organic farming, which implies a reduction in nitrous oxide emissions from the use of nitrogen fertilizers. The third mitigation measure associated with agriculture is the use of manure in biogas plants, but these reductions are associated with the burning of biogas, i.e., fuels and are accounted for in the

energy sector in the diagram above.

The consultations showed that there are many measures in the sector to improve livestock productivity to ensure food security. However, no data on quantitative commitments to reduce the number of livestock due to these measures and to increase the area for organic farming were received. Therefore, to calculate the reductions, modest indicators of the Green Economy Development Program were adopted to increase the area of organic farming using the growth progression presented there from 7,975 hectares in 2022 to10,775 ha in 2050. In terms of reducing the number of low-yielding dairy herds, it was assumed that, starting from 2022, it will begin to decrease by 0.5% annually until 2050, with replacement by more thoroughbred animals.

These measures, which have mitigation potential, will be implemented at the expense of the internal resources of the Kyrgyz Republic and therefore belong to the WM scenario, which are supported by own financial resources. The development of biogas plants in the sector belongs to the WAM scenario and is assessed in the energy sector.

The total GHG emission reductions under the "With measures" scenario until 2050 are presented in the table below.

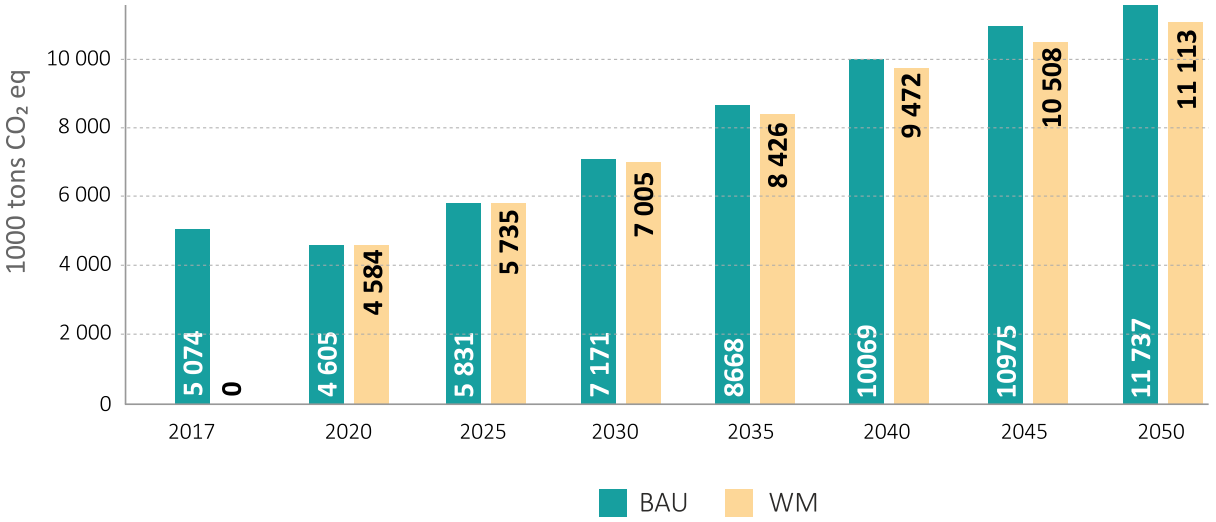
Years	**1000 t CO_2 eq.**
2017-2020	49,498
2021-2025	299,595
2026-2030	666,216
2031-2035	1 050,020
2036-2040	1 459,582
2041-2045	2 049,564
2046-2050	2 800,368

The indicated GHG emission reductions will reduce the emissions of the sector relative to the projection of sectoral emissions under the BAU scenario (see the table below):

Years	**WM scenario, % of BAU**
2020	0,47
2025	1,64
2030	2,31
2035	2,78
2040	3,25
2045	4,26
2050	5,32

The dynamics of GHG emissions in the agriculture sector under two scenarios is presented in the diagram below

GHG emissions projections in Agriculture sector under two scenarios until 2050



Low results of planning mitigation measures in the agriculture sector are primarily due to the multi-structured nature of the agricultural production system of the KR. At the same time, there is a serious mitigation potential in animal husbandry for biogas production, in horticulture and agroforestry on agricultural lands to in increasing CO_2 absorption.

Sector	LULUCF		
Goals	Measures	Target indicators, increase in removals relative to 2017, 1000 tons of CO_2 eq.)	
		2025	2030
1. Increasing carbon sinks into forests	1.1. Creation of new forest cultures (WM)	-199,561	-311,771
2. Increasing carbon sinks in perennial plantations	2.1 Expansion of the area of perennial plantations (WAM)	-3,470	-3,470
3. Strengthening the national MRV system and introducing new technologies	3.1. Improvement of policy and legislation for LCD (WAM)	NE	NE
	3.2. Development and implementation of a sector MRV system (WAM)	NE	NE
	3.3. Capacity building of staff and public awareness, considering the interests of women, youth and vulnerable groups (WAM)	NE	NE
	3.4. Technology Assessment (WAM)	NE	NE

Explanations:

The LULUCF sector is the sector that absorbs CO_2 from forests and perennial plantations on arable land. During consultations with the sector's stakeholders, measures related to the country's forestry were classified as own measures provided for by the national forest policy of the Kyrgyz Republic. The total increase in absorption of the sector under both scenarios of WM and WAM (in 1000 tons of CO_2) relative to the BAU scenario of the sector are presented in the table below.

Years	With measures	With additional measures
2017-2020	194,728	10,410
2021-2025	773,385	17,350
2026-2030	1 334,434	17,350
2031-2035	1 895,483	17,350
2036-2040	2 456,532	17,350
2041-2045	3 017,580	17,350
2046-2050	3 578,629	17,350

It should be noted that the distribution of measures according to the WM and WAM scenarios was the result of consultations with stakeholders, at which it was decided to attribute all measures implemented by the country's forestry industry in accordance with the national forest policy to the WM scenario, and measures related to an increase in the area of perennial plantations to the WAM scenario.

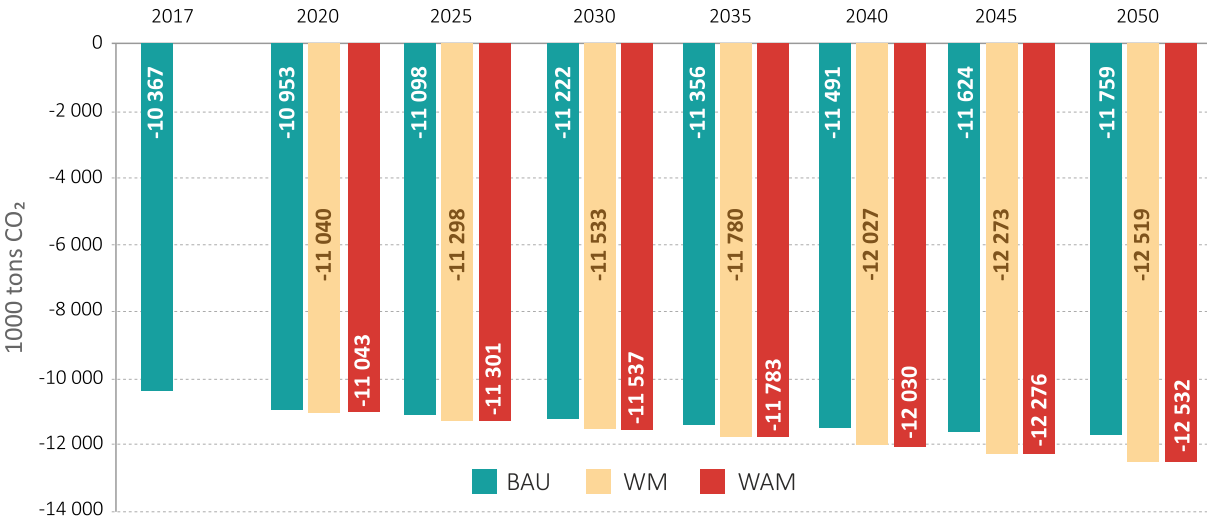
The indicated CO_2 removals will also slightly increase the mitigation potential of the LULUCF sector in relation to removals and the projected sectoral removals under the BAU scenario (see the table below).

Years	With measures,% of BAU	With additional measures,% of BAU
2020	0,80	0,03
2025	1,80	0,03
2030	2,78	0,03
2035	3,73	0,03
2040	4,67	0,03
2045	5,58	0,03
2050	6,47	0,03

This sector has a significant mitigation potential for increasing GHG removals, which can be realized by ambitious plans to in establishing new areas of forest and perennial plantations in the country.

The dynamics of CO_2 removals in the sector under three scenarios is presented in the diagram below.diagram below.

GHG Removals projections in LULUCF sector under three scenarios until 2050



Sector	Waste		
Goals	Measures	Target indicators, 1000 tons of CO_2 eq.	
		2025	2030
1. Reduction of current GHG emissions	1.1. Implementation of systems for the separate collection and disposal of waste (WAM)	NE	NE
	1.2 Waste recycling development (WAM)	NE	NE
2. Development of RES	2.1. Implementation of biogas plants at solid waste dumps (WAM)	Considered in the energy sector (potential is shown below)	Considered in the energy sector (potential is shown below)
	2.2. Implementation of biogas plants at wastewater treatment plants (WAM)	Considered in the energy sector	Considered in the energy sector
3. Strengthening the national MRV system and introducing new technologies	3.1. Improvement of policy and legislation for LCD (WAM)	NE	NE
	3.2. Development and implementation of a sector MRV system (WAM)	NE	NE
	3.3. Capacity building of staff and public awareness, considering the interests of women, youth and vulnerable groups (WAM)	NE	NE

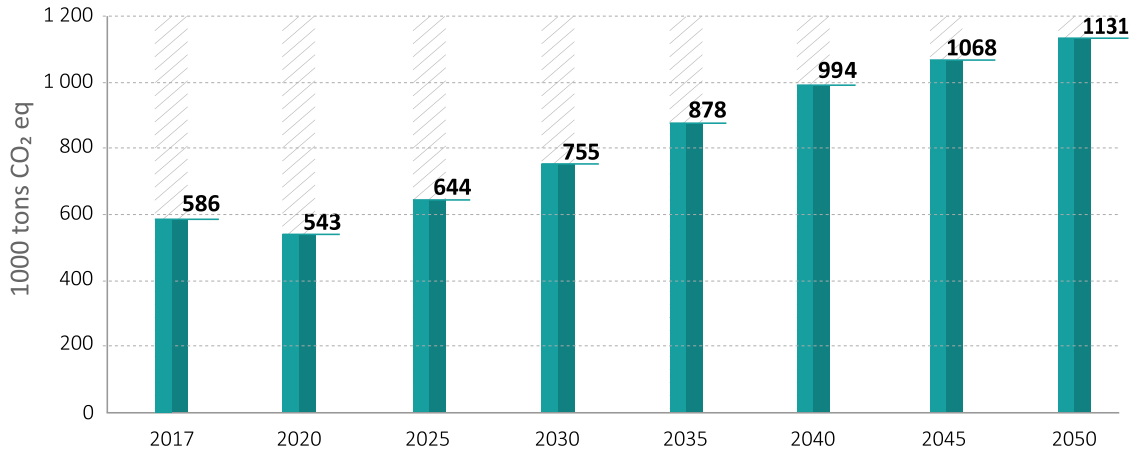
Sector	Waste		
Goals	Measures	Target indicators, 1000 tons of CO_2 eq.	
		2025	2030
	3.4. Assessment of waste processing technologies and the use of biogas plants in the urban economy (WAM)	NE	NE

Explanations:

All measures identified in the course of stakeholder consultations do not lead to GHG emission reductionsAccordingly, are not estimated (NE). The development of biogas plants at landfills and treatment facilities in Bishkek and Osh cities is not supported, in the near future, by investment projects and, accordingly, they belong to the WAM scenario, and their respective mitigation potential is assessed starting from 2025 in the energy sector. At the same time, the use of seized food waste from landfills and sediments of treatment facilities of Bishkek and Osh cities to generate energy in the biogas plant will reduce methane emissions from the waste sector, which will be used at biogas plant to obtain bioenergy.

The dynamics of GHG emissions from the Waste sector under the BAU scenario for 2017-2050 is shown in the diagram below.

GHG emissions projections in Waste sector until 2050



Annex 2. Adaptation measures

Vulnerable sector	1. Water resources	
Key climatic impacts: 1) Changes in the water content of river basins. 2) Decrease in water supply for the population and economy. 3) Deterioration of the quality of surface and ground waters.		
Goals	**Measures**	**Expected results**
1. Increase adaptive capacity	Measure 1.1.1. Conducting scientific research on the impact of climate change on water resources	A scientifically based policy of integrated water resources management has been formed
	Measure 1.1.2 Formulation of water sector development policy taking into account adaptation to climate change, gender aspects and interests of vulnerable groups	
2. Strengthening climate resilience / resilience	Measure 1.2.1. Improving climate resilience of irrigation infrastructure	Increased climate resilience of water infrastructure
	Measure 1.2.2. Improving climatic resilience of drinking water supply and sanitation infrastructure	
3. Reducing vulnerability to negative impacts of climate change impacts	Measure 1.3.1. Stimulating more efficient use of water resources	Reduced by 10% the volume of losses and use of water resources
Vulnerable sector:	**2. Agriculture**	
Key climatic impacts: 1) Deterioration of the processes of biochemical regulation of the soil ecosystem. 2) Changes in the productive potential of pastures and the resistance of animals to meteorological changes. 3) Increased vulnerability of food self-sufficiency.		
Goals	**Measures**	**Expected results**
1. Increasing adaptive capacity	Measure 2.1.1. Conducting scientific research on the impact of climate change on agriculture	A scientifically based policy for climate-sustainable development of agriculture and ensuring food security of the country has been formed

	Measure 2.1.2. Developing agricultural development policies that take into account climate change, gender and vulnerable groups	
	Measure 2.1.3. Raising climate awareness and adaptive knowledge of employees of state bodies, local self-government and land users	
2. Strengthening climate resilience	Measure 2.2.1. Improving land use practices in the face of climate change	Reduced losses in agriculture from the impact of climate change
	Measure 2.2.2. Strengthening climate resilience in crop production	
	Measure 2.2.3. Strengthening climate resilience of pasture infrastructure	
	Measure 2.2.4. Development of climate resilient livestock breeding	
3. Reducing vulnerability to negative impacts of climate change impacts	Measure 2.3.1. Creation of climate-smart financial services and products in agriculture	Provided farms with access to concessional finance to support the implementation of climate-resilient technologies
	Measure 2.3.2. Development and launch of the state program of climate-oriented support for agriculture, based on the results of the implementation of the program «Financing of agriculture», taking into account the needs of vulnerable groups	
Vulnerable sector:	**3. Energy**	
Key climatic impacts: 1) Changes in the gross hydropower potential of rivers 2) Increase in the critical load on the energy infrastructure with temperature drops 3) Increased vulnerability of energy facilities and infrastructure from hydrological emergencies		

Goals	Measures	Expected results
1. Increasing adaptive capacity	Measure 3.1.1. Conducting scientific research on the impact of climate change on the energy security of the country	A scientifically based policy for climate-sustainable development of the energy sector was formulated
	Measure 3.1.2. Developing a policy for the development of the energy sector, taking into account climate change issues, gender aspects and interests of vulnerable groups	
	Measure 3.1.3. Raising awareness and knowledge of energy sector employees and the public on climate change issues	
2. Strengthening climate resilience / resilience	Measure 3.2.1 Increase the resilience of the energy infrastructure against overloads during critical drops in temperature	Reduced losses in the energy sector from the impact of climate change
	Measure 3.2.2. Ensuring the safety of energy infrastructure from climatic emergencies	
	Measure 3.2.3 Diversification of electricity sources due to the impact of climate change on the country's hydropower	
3. Reducing vulnerability to negative impacts of climate change impacts	Measure 3.3.1. Development of mechanisms to strengthen accounting and control over the rational use of energy resources	Increased efficiency in the use of energy resources

Vulnerable sector:	**4. Health care**

Key climatic impacts:
1) Increase in morbidity and mortality from noncommunicable diseases.
2) Increase in morbidity and mortality from infectious, vector-borne and parasitic diseases.
3) Damage or destruction of health infrastructure due to climatic events

Goals	Measures	Expected results
1. Increasing adaptive capacity	Measure 4.1.1. Improving the evidence base on the impact of climate change on the health of the population of the Kyrgyz Republic	A scientifically based policy for climate-sustainable development of the health care system was formed and the clinical regulatory framework was improved

	Measure 4.1.2. Developing a health system development policy, taking into account adaptation to climate change, gender aspects and the interests of vulnerable groups	
	Measure 4.1.3. Improving the clinical regulatory framework for climate change adaptation of the healthcare system	
2. Strengthening climate resilience / resilience	Measure 4.2.1. Improving climate resilience of health infrastructure	Strengthened health system resilience to climate change impacts
3. Reducing vulnerability to negative impacts of climate change impacts	Measure 4.3.1. Reducing the vulnerability of the population to diseases of the circulatory system and respiratory system	Reduced morbidity and mortality of the population from the negative effects of climate change
	Measure 4.3.2 Reducing the prevalence of diseases associated with poor nutritional status of the population due to climate change	
	Measure 4.3.3. Reducing the vulnerability of the population to food poisoning due to climate change factors	
	Measure 4.3.4. Reducing the prevalence of infectious, parasitic and vector-borne diseases	
	Measure 4.3.5. Reducing the vulnerability of the population to injuries caused by adverse weather conditions	
Vulnerable sector:	**5. Reducing the risks of emergencies caused by climate change**	

Key climatic impacts:
1) Increased vulnerability infrastructure and population from hydrological emergencies.
2) Increased vulnerability infrastructure and population to emergencies associated with the activation and reactivation of gravitational processes.
3) An increase in the amount of damage from meteorological emergencies to infrastructure and the population.

Goals	Measures	Expected results
1. Increasing adaptive capacity	Measure 5.1.1 Providing scientific justification for decision-making processes for response and prevention of hydrometeorological emergencies	Development of a scientifically based policy for the prevention and response to climate emergencies
	Measure 5.1.2 Improving policies for preventing and responding to climate emergencies, gender aspects and interests of vulnerable groups	
	Measure 5.1.3 Raiseing awareness and knowledge in the field of climate emergencies for the population and employees of the emergency prevention sector	
2. Strengthening climate resilience / resilience	Measure 5.2.1. Modernization of the hydro and glaciological monitoring system	Reduced losses from climatic emergencies by improving the quality of hydrometeorological services
	Measure 5.2.2. Expansion of the system of agro and meteorological services	
	Measure 5.2.3. Strengthening the response and prevention of climate emergencies	
	Measure 5.2.4. Development of a Unified System for Integrated Monitoring and Forecasting of Emergencies	
3. Reducing vulnerability to negative impacts of climate change impacts	Measure 5.3.1. Development of mechanisms for the implementation of a climate disaster risk insurance system	Disaster risk response and prevention system expanded
	Measure 5.3.2 Reducing the vulnerability of children and staff in secondary schools and preschool institutions to climate change and emergencies	

Vulnerable sector:	6. Forest and biodiversity	
Key climatic impacts: 1) Degradation of ecosystems and loss of biodiversity. Increased outbreaks of outbreaks of forest pests. 2) Displacement of boundaries and habitats of objects of flora and fauna. 3) Increased outbreaks of forest pests.		
Goals	**Measures**	**Expected results**
1. Increasing adaptive capacity	Measure 6.1.1 Conducting scientific research on the impacts of climate change on forests, ecosystems and biodiversity	A scientifically based policy for the development of the forestry sector and conservation of biodiversity, taking into account climate change, has been formulated
	Measure 6.1.2. Introduction of adaptation to climate change and preservation of natural ecosystems into state policy on forestry and biodiversity conservation	
	Measure 6.1.3. Raising climate awareness and adaptation knowledge of staff in the forestry sector and specially protected natural areas	
2. Strengthening climate resilience / resilience	Measure 6.2.1. Improving climatic resilience of forest ecosystems	Reducing the loss of ecosystem services from forests and biodiversity
	Measure 6.2.2. Strengthening climate resilience of biodiversity	
	Measure 6.2.3. Expansion of the network of specially protected natural areas, including through the inclusion of some glaciers	
3. Reducing vulnerability to the negative effects of climate change	Measure 6.3.1. Introduction of mechanisms to reduce the vulnerability of forest ecosystems and biodiversity from climate change	Regulatory mechanisms have been introduced to reduce the vulnerability of forest ecosystems and biodiversity

Cross-sectoral section:	7. Climate resilient areas and green cities
Key climatic impacts: 1) Increasing the complex vulnerability of the territory.	

Goals	Measures	Expected results
1. Increasing adaptive capacity	Measure 7.1.1 Conduct scientific research on the impact of climate change on residents and infrastructure of oblasts and cities of Bishkek and Osh, taking into account gender aspects and interests of vulnerable groups	Development of a pilot policy for climate-sustainable development of regions and large cities, based on preliminary studies
	Measure 7.1.2. Development of methodologies and pilot policies for «green» climate-sustainable development of regions and cities of regions, taking into account gender aspects and interests of vulnerable groups	
2. Strengthening climate resilience / resilience	Measure 7.2.1. Development and improvement of landscape and recreational urban areas	Increased climate resilience of cities through the introduction of ecosystem adaptation methods
	Measure 7.2.2. Implementation of «green» and ecosystem mechanisms to reduce the vulnerability of cities and regions	
Cross-sectoral section:	**8. Improving the adaptation reporting system**	
Key climatic impacts: Not applicable		
Goals	**Measures**	**Expected results**
1. Increasing adaptive capacity	Measure 8.1.1 Improvement of the statistical information collection system, taking into account adaptation to climate change, gender aspects and interests of vulnerable groups	Improved statistical and financial information, taking into account the issues of adaptation to climate change
	Measure 8.1.2 Introducing requirements for accounting for climate change adaptation in the financial reporting system	

Annex 3. Adaptation measures with co-benefits to GHG emissions reduction

Vulnerable Sector Agriculture

Goal 2. Strengthen climate resilience

- Measure 3.2.1. Improving land use practices in the face of climate change
- Measure 3.2.2. Strengthening climate resilience in crop production
- Measure 3.2.3. Strengthening climate resilience of pasture infrastructure
- Measure 3.2.4. Development of climate resilient livestock breeding

Goal 3. Reducing vulnerability to negative impacts of climate change impacts

- Measure 2.3.1. Creation of climate-smart financial services and products in agriculture
- Measure 2.3.2. Development and launch of a state program for climate-oriented support of agriculture, based on the experience of the program «Financing of Agriculture»

Vulnerable Energy Sector

Goal 1. Increase adaptive capacity

- Measure 3.1.2. Developing a policy for the development of the energy sector taking into account climate change issues, gender aspects and interests of vulnerable groups

Goal 2. Strengthen climate resilience / resilience

- Measure 3.2.1 Increase the resilience of the energy infrastructure against overloads during critical drops in temperature
- Measure 3.2.2. Ensuring the safety of energy infrastructure from climaticEmergency
- Measure 3.2.3 Diversification of electricity sources due to the impact of climate change on the country's hydropower

Goal 3. Reducing vulnerability to negative impacts of climate change impacts

- Measure 3.3.1. Development of mechanisms to strengthen accounting and control over the rational use of energy resources

Vulnerable Healthcare Sector

Goal 2. Strengthen climate resilience / resilience

- Measure 4.2.1. Improving climate resilience of health infrastructure

Vulnerable Sector «Forest and Biodiversity»

Goal 2. Strengthen climate resilience / resilience

- Measure 6.2.1. Improving climatic resilience of forest ecosystems

Goal 3. Reducing vulnerability to negative impacts of climate change impacts

- Measure 6.3.1. Introduction of mechanisms to reduce the vulnerability of forest ecosystems and biodiversity from climate change

Intersectoral Section: Climate Resilient Areas and Green Cities

Goal 1. Increase adaptive capacity

- Measure 7.1.2. Development of methodologies and pilot policies for «green» climate-sustainable development of regions and cities, taking into account gender aspects and interests of vulnerable groups.

Annex 4.1. Subsequent work to establish a National Monitoring and Evaluation System

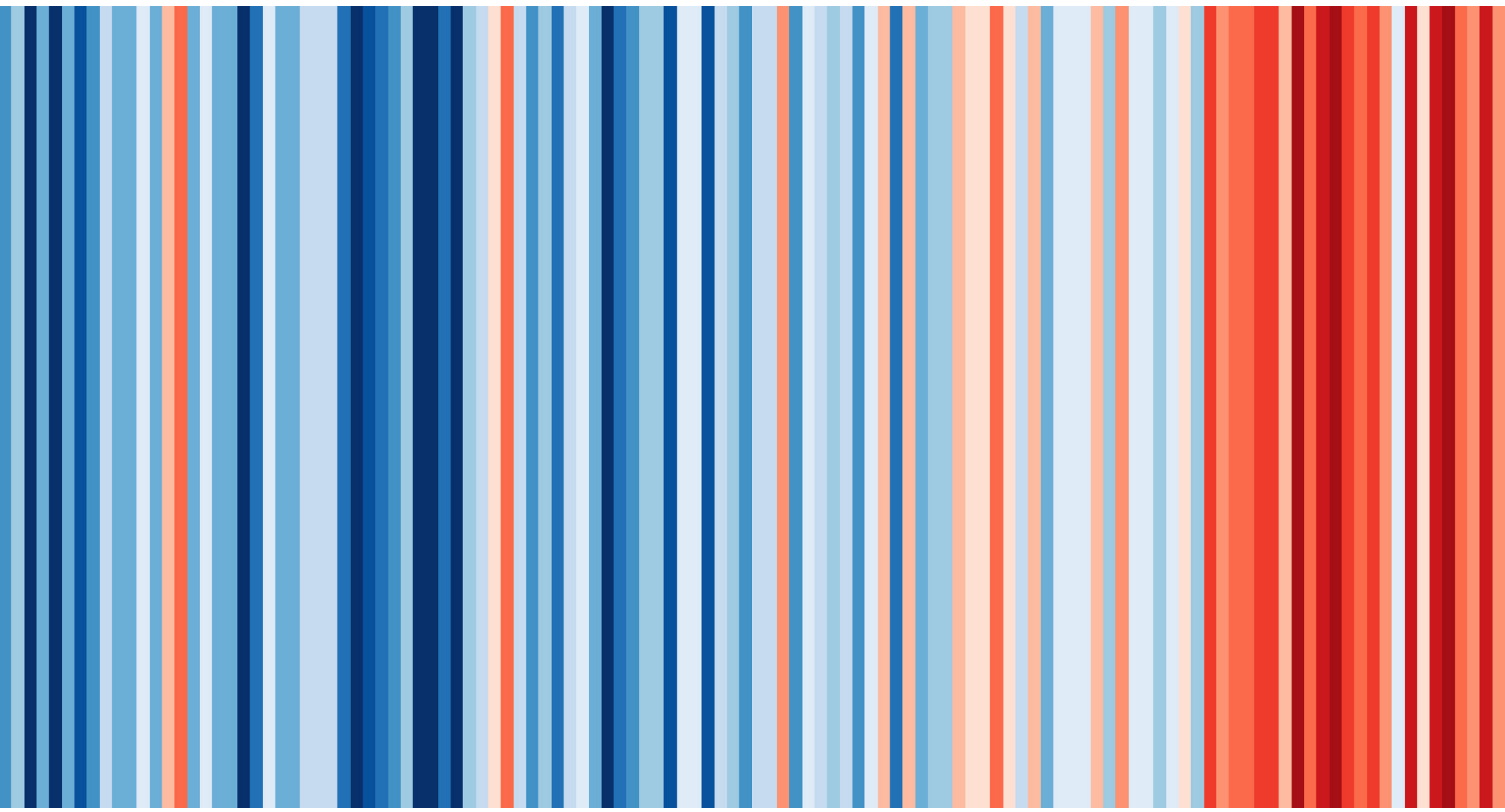
In order to optimize the processes and increase the efficiency of policy implementation and monitoring in the field of climate change, a number of recommendations were identified during the development of the NDC for to impede the further development and strengthening of the capacity and institutional framework for the national monitoring and evaluation system, ranging from assessing progress in reducing greenhouse gas emissions and anticipated future emissions, before the implementation of the NDC and the subsequent assessment of the effectiveness of measures envisaged in the Implementation Plan for the updated NDC:

- improvement of legal support for climate action;
- development of actual strategic documents on adaptation, based on analysis of efficient implementation of expired adaptation profile plans;
- development of strategic documents on low-carbon development;
- improvement of full-fledged regulatory legal framework for the functioning of the national system for accounting for GHG emissions and precursor gases: procedures and procedures for conducting a national GHG inventory and maintaining an appropriate state inventory, collecting and processing data, their subsequent verification, requirements for the qualifications of verifiers, storage and archiving issues;
- to strengthen institutional capacity for the regulation and control of GHG emissions and training in NDC areas;
- expanding the list of climate data in the official national statistics system;
- strengthening integration of climate change issues into national policies and interagency coordination on these issues;
- development of agreed methodologies for calculating damages from the impact of climate change on economic sectors
- strengthening monitoring of financing for climate action.

Annex 4.2. Direct contribution of updated NDC measures to the country's SDGs

Climate change adaptation measures	SDGs [20]
Water resources	6. Clean Water and Sanitation (6.1, 6.4, 6.5, 6a, 6b) 9. Industry , Innovation and Infrastructure
Agriculture	1. No poverty 2. Zero Hunger (2.3, 2.4, 2.5) 8. Decent Work and Economic Growth (8.10) 15. Life on Land (15.3)
Energy	7. Affordable and Clean Energy (7.2, 7.3, 7b) 8. Decent Work and Economic Growth 9. Industry, Innovation and Infrastructure 11. Sustainable Cities and Towns
Public health	3. Good Health and Wellbeing (3.3, 3.4, 3.9, 3d) 11. Sustainable Cities and Communities
Reducing the risk of natural disasters	8. Decent Work and Economic Growth 11. Sustainable Cities and Communities (11b)
Forests and biodiversity	1. No Poverty 2. Zero Hunger 15. Conservation of Terrestrial Ecosystems (15.1, 15.2, 15.5, 15.9)
Green cities and climate resilient areas	11. Sustainable Cities and Communities (11.3, 11.7, 11b)
Mitigation measures	**SDGs**
Energy	7. Affordable and Clean Energy (7.1, 7.2, 7.3, 7.b) 8. Decent Work and Economic Growth 9. Industry, Innovation, and Infrastructure (9.4) 11. Sustainable Cities and Communities
IPPU	9. Industry, Innovation, and Infrastructure 8. Decent Work and Economic Growth
Agriculture	1. No Poverty 2. Zero Hunger
LULUCF	15. Life on Land (15.1, 15.2) 1. No Poverty 2. Zero Hunger
Waste	12. Responsible Consumption and Production 11. Sustainable Cities and Communities

[20] Achievement of the SDGs and climate goals is closely linked. They have numerous direct and indirect connections, and actions on them mutually complement each other. This table presents only those SDGs on which the climate action of the Kyrgyz Republic will have a direct impact.



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