

Climate Investment Program

Bishkek 2024

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List of abbreviations:

MNRTS	Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic
MES	Ministry of Emergency Situations of the Kyrgyz Republic
MWRACPI	Ministry of Water Resources, Agriculture and Processing Industry of the Kyrgyz Republic
ME	Ministry of Energetics of the Kyrgyz Republic
MoH	Ministry of Healthcare of the Kyrgyz Republic
MTC	Ministry of Transport and Communications of the Kyrgyz Republic
MLSPM	Ministry of Labour, Social Protection and Migration of the Kyrgyz Republic
Gosstroy	State Agency of Architectutre, Construction and Housing and Communal Services under the Cabinet of Ministers of the Kyrgyz Republic
GLOF	Flood due to outburst of glacial lakes
IPCC	Intergovernmental Panel on Climate Change
KHMS	Kyrgyz Hydrometeorological Service
CCCCESD	Coordination Council on Climate Change, Ecology and Sustainable Development
SPNA	Specially Protected Natural Areas
GIS	Geographic Information Systems
HPP	Hydro Power Plant
FAO	UN Food and Agricultural Organization
NDC	Nationally Determined Contribution to Decarburization
CIP	Climate Investment Programme

Climate Investment Programme

1. Introduction

The Kyrgyz Republic is highly susceptible to climate risks due to its frequent climate-related natural disasters, dependence on climate-sensitive economic sectors, and aging infrastructure. Its climatic features are associated with its location in the center of the Eurasian continent, far from large bodies of water and in close proximity to deserts. As of January 2023, the population of the Kyrgyz Republic was 7.034 million. The population is predominantly rural and unevenly distributed throughout the country due to its mountainous landscape.

The Kyrgyz Republic is located within the Tien Shan and Pamir-Alai mountain range systems. The entire diversity of landscapes and natural-climatic conditions of the Kyrgyz Republic is united into four natural-climatic zones: valley-foothill - up to 1200 m above sea level, mid-mountain - from 1200 to 2200 m, high-mountain - from 2200 to 3500 m and nival - above 3500 m. The climate of the Kyrgyz Republic is sharp continental, mostly arid, somewhat moderated by increased cloudiness and precipitation due to high mountainous terrain. The climate features are determined by the location of the republic in the Northern Hemisphere in the center of the Eurasian continent, as well as its remoteness from significant water bodies and the close proximity of deserts.

The average annual temperature in the Kyrgyz Republic has significantly increased during the observation period of 1885-2010. The rate of temperature change is non-linear and has notably increased in recent decades. If we consider the period since the beginning of the last century, the average annual temperature in the republic has increased by 0.013°C per year (or 0.1°C every 10 years). However, for the period between 1976 and 2017, the growth rate almost doubled and amounted to 0.024°C per year (or 0.2°C every 10 years). Both trends are statistically significant with a confidence level of 95%.

Climate change can multiply risks and affect the availability and accessibility of natural resources. Higher temperatures and reduced precipitation can reduce the efficiency of electricity generation, while extreme weather events can jeopardise energy production and transmission infrastructure. Additionally, climate change can impact supply chains, energy security, food production and increase food price volatility.

The Kyrgyz Republic experiences periodic waves of cold snaps and snowstorms during winter due to its continental climate. At the start of 2023, severe winter weather conditions had a significant impact on the country's infrastructure, economy, people's livelihoods, and health. Interruptions in the supply

of gas, electricity, and water occurred, and major roads were blocked by snowdrifts. Some households resorted to burning waste as fuel for their stoves, resulting in severe air pollution.

The trend of outflow from rural and mountainous areas, mainly consisting of young working-age men, increases the burden on vulnerable groups, including women. Women typically remain in their native places and are therefore disproportionately exposed to climate-related risks. Additionally, women are often the primary actors in agriculture, livestock farming, and other small-scale economic activities. However, policies and programs aimed at minimizing climate-related risks, including security risks, often fail to consider gender roles and their impact.

The melting of glaciers has accelerated due to climate change, reducing their water-holding capacity and creating hazards such as mudslides, landslides, and glacial lake outburst floods (GLUFs). Climate change is also expected to impact the livelihoods of rural mountain communities that rely on agriculture, pastures, and forests, as these are highly vulnerable to its effects (IPCC 6th Assessment Report, 2021).

The Kyrgyz Republic possesses 48% of the total water resources among Central Asian countries. These resources are primarily stored in glaciers, lakes, rivers, and underground. However, water management in the country is ineffective, with only 12-17% of surface water flow being utilized, 90% of which is used for agricultural purposes. The majority of the water resources are allocated for irrigation, industrial and domestic water supply, and electricity generation.

The Kyrgyz Republic has a small share of global greenhouse gas emissions. However, strengthening climate resilience through adaptation measures is a key priority. The country's economy faces unique challenges related to current and projected climate change impacts due to its geographical and topographical features, as well as the structure of its economy.

The Kyrgyz Republic is ranked 84th in the world for total emissions and 131st per capita. Although the country's emissions are much lower than those of the largest emitters, they are still significant, and more importantly, they are increasing. According to the IPCC 6th Assessment Report (2021), the country emits 1.8 tons of carbon dioxide per capita per year.

The Kyrgyz Republic has signed the UN Framework Convention on Climate Change and is committed to achieving the ultimate goal of the Convention, which is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic impacts on the climate system.

2. General assessment of the current situation and existing problems

The climate observation, research, and data system in Kyrgyzstan is underdeveloped. The current network of meteorological and hydrological observations, managed by the Hydrometeorological Service (KMS) under the Ministry of Emergency Situations, does not provide complete coverage of the country's territory, including areas of varying heights and water bodies. The collected data is stored by the KMS and is not publicly available for long-term analysis. KMS does not practice climate modelling or develop climate scenarios due to a lack of capacity and funding. Data from research conducted by various scientific and educational institutions is fragmentary and is not practically used, but is stored in separate databases of various organizations. The Ministry of

Natural Resources, Ecology and Technical Supervision (MNRETS) of the Kyrgyz Republic maintains an inventory of greenhouse gas (GHG) emissions and sequestrations. However, it does not keep a register of studies and their data. This is mainly due to the absence of monitoring, reporting, and verification systems, as well as appropriate hardware and software. The establishment of a distinct department within MNRETS, responsible for maintaining an emission inventory, monitoring and verifying emissions, could potentially overcome this obstacle.

Coordination between governmental agencies: the KR has been actively participating in national and international climate change processes since 2000. However, there is still a need to strengthen coordination between government agencies. The establishment of the Coordinating Council on Climate Change, Environment and Sustainable Development (CCCEED) in 2021 was an important step towards addressing this issue. The council will coordinate measures to reduce greenhouse gas (GHG) emissions and enhance climate-resilient development.

Insufficient institutional organization is a major issue in the country's state and self-government institutions when it comes to addressing climate change. Typically, only one employee is responsible for climate change issues, in addition to other duties. To overcome this barrier, it is necessary to institutionalize climate change issues in ministries and local governments by creating dedicated organizational units and services. To improve the coordination with the private sector and take other appropriate measures, it is important to redistribute responsibility and authority between central and local governments. Additionally, climate change issues are often not considered in normative acts as cross-sectoral. Therefore, it is essential to increase efforts to incorporate climate change concerns into the strategies and plans of line ministries and municipalities. This can be achieved by organizing awareness-raising activities and training civil servants to consider climate change issues in their daily activities, including the planning stage of new projects.

The financing of climate investments and actions in KR is limited due to a lack of financial resources. Climate change projects in KR are primarily funded by donor organizations and partner countries. To ensure the sustainability of the results achieved with the help of partners, it is necessary to allocate appropriate funds to support climate change projects in the public investment programme when planning the state budget.

3. State policy and main directions of climate change policy

The Kyrgyz Republic Government is committed to implementing socio-economic reforms through the adoption of the National Sustainable Development Strategy 2018-2040. This strategy aims to promote diversified economic activities, modern and affordable infrastructure, and growth and productivity in key sectors of the economy. Additionally, the President of the Kyrgyz Republic issued Decree No. 77 on March 19, 2021, outlining measures to ensure environmental safety and climate sustainability. The government has also developed sectoral policy documents for emergency situations, healthcare, forestry and biodiversity, agriculture, industry, energy management, waste, and water resources.

The Kyrgyz Republic is dedicated to the principles of the Paris Agreement and has outlined climate change adaptation and mitigation measures in its updated Nationally Determined Contribution (NDC) for 2021. Despite being a relatively low emitter of greenhouse gases, Kyrgyzstan aims to increase its climate commitments and reduce GHG emissions by 16.63% of the emission level under the Business

as Usual scenario by 2025, with international support aiming for a reduction of 36.61%. In 2030, it is possible to reduce GHG emissions by 15.97% compared to the emission level under the 'Business as Usual' scenario. With international support, this reduction can be increased to 43.62%.

to achieve these objectives, the updated STP focuses on the main sectors in which to act and guide supportive policies. Mitigation Implementation Plans have been developed for Energy, Transport, Agriculture, Forestry, and Other Land Use, and Waste.

The UNDP-GCF project 'Advancing the process of developing a National Adaptation Plan (NAP) for medium and long-term planning and implementation of adaptation measures to climate change in the Kyrgyz Republic' is currently assessing risks and vulnerabilities and developing adaptation plans for four sectors: 'Emergencies', 'Health', 'Agriculture and Irrigation', and 'Biodiversity Conservation'.

4. Goals and objectives

The Climate Investment Programme (CIP) aims to manage access to climate finance in the Kyrgyz Republic while integrating climate change adaptation aspects and promoting synergies in responding to the various climate risks faced by the country. The CIP will facilitate the Kyrgyz Republic's Cabinet of Ministers in establishing a consistent and sustainable process for developing and managing climate change adaptation investment components. This will be achieved by building on, aligning with, and complementing existing national policies, sectoral adaptation strategies, and proposals developed by line ministries with the support of development partners.

The Climate Investment Programme identifies long-term and prioritised investments that will enhance climate resilience and adaptive capacity in key sectors of the Kyrgyz Republic. The CIP outlines a portfolio of long-term climate change adaptation investment projects and a proposed list of investment priorities. These priorities will be further developed into full-fledged concepts and funding proposals led by the Climate Finance Center (CFC). The proposed investment portfolio reflects the concept of climate change adaptation as a long-term process. It includes both immediate and longer-term activities, such as those related to infrastructure, the built environment, and industrial sectors.

The Climate Investment Programme (CIP) is a dynamic document that reflects the process of selecting investment components based on national priorities, development partner priorities, and donor organizations. It serves as an operational framework for managing access to climate finance in the Kyrgyz Republic, facilitating medium and long-term planning of climate investments. The plan considers the Nationally Determined Contributions (NDCs) as basic priorities. These priorities align with the broader goals of sustainable development, green economy, and human capital development.

5. Programme components

In accordance with the priorities and sectoral objectives, 11 components have been identified in the CIP:

1. Improving the quality of climate service delivery;
2. Enhancing agricultural resilience to climate change for food security;

3. Ensuring climate resilience of energy supply infrastructure;
4. Ensuring climate resilience of transport infrastructure;
5. Ensuring climate resilience of municipal water supply;
6. Ensure climate resilience of buildings;
7. Strengthening climate change adaptation in healthcare;
8. Enhancing climate change adaptation in subsoil use;
9. Enhancing private sector participation in climate change adaptation;
10. Enhance climate change adaptation in forestry and biodiversity;
11. Strengthening adaptation in the emergency sector.

To enhance the effectiveness of implementing climate change adaptation, it is necessary to support and implement cross-cutting processes and elements, such as decision-making mechanisms and procedures, as well as equity, including gender equality and the inclusion of vulnerable groups.

Component 1: Improving the quality of climate service delivery

Key areas

- Enhancing the hydrometeorological monitoring system to provide timely warnings of dangerous and unfavourable hydrometeorological phenomena, as well as improving water resources management through the implementation of Early Warning Systems for Climate Change Resilience;
- Improvement the quality of climate and hydrometeorological services, analytical capacity, and data quality, as well as verification and validation processes;
- Establishment of the State Glaciological Monitoring System is also crucial.

Existing active projects

1. The World Bank is implementing the 'Central Asia Hydrometeorology Modernisation Project', a regional initiative that aims to enhance the capacity and resilience of countries to natural disasters and climate risks. The project seeks to achieve this by improving the quality, accuracy, and timeliness of hydrometeorological services in Kyrgyzstan (2019-2023, budget for KR \$6 million, Kyrgyzhydromet under the Ministry of Emergency Situations of KR) and Tajikistan. The project also aims to strengthen efforts to forecast extreme climate events and early warning measures. The project aims to automate meteorological stations, modernise manual observations, and improve hydrological and agrometeorological monitoring. These measures aim to enhance the rehabilitation of the meteorological network, improve the technical capacity of weather forecasts and climate data, establish a user-friendly system for the provision of hydrometeorological services, which will enable farmers to better manage their crops and increase food production, enhance the hydropower network, and ensure the safety of regional residents.

2. За счет средств Зеленого климатического фонда ВПП реализует проект «Климатическое обслуживание и диверсификация чувствительных к климату источников существования для

расширения прав и возможностей уязвимых и необеспеченных продовольствием сообществ в Кыргызской Республике, (2021-2024, 8,6 млн \$)», направленный на:

- Климатическое обслуживание для поддержки уязвимых сельских общин в планировании и управлении климатическими рисками в связи с изменением климата;
- Укрепление и диверсификацию средств к существованию для повышения адаптационного потенциала уязвимых групп и повышения устойчивости сообщества;
- Нарастивание потенциала и поддержку принятия решений для активизации действий по борьбе с изменением климата с использованием многосекторального подхода.

Реализующие организации: ВПП; Министерство по чрезвычайным ситуациям (Кыргызгидромет); Министерство социального развития и труда; Министерство водных ресурсов, сельского хозяйства и перерабатывающей промышленности.

2. The project 'Climate Services and Climate Sensitive Livelihood Diversification to Empower Vulnerable and Food Insecure Communities in the Kyrgyz Republic' is being implemented by WFP with funds from the Green Climate Fund. The project will run from 2021 to 2024 and has a budget of \$8.6 million aims to provide:

- Climate services to support vulnerable rural communities in planning and managing climate risks due to climate change, as well as
 - Strengthening and diversification livelihoods to enhance the adaptive capacity of vulnerable groups and build community resilience;
 - Capacity building and decision support to catalyse action on climate change through a multi-sectoral approach.

The implementing organizations include WFP, Ministry of Emergency Situations (Kyrgyzhydromet), Ministry of Social Development and Labour, and Ministry of Water Resources, Agriculture and Processing Industry.

Component 2: Enhancing agricultural resilience to climate change for food security

Key areas

1. Building resilience to climate change by:

- Improving land use practices;
- Building climate resilience in crop production;
- Strengthening the climate resilience of pasture infrastructure;
- Developing climate-resilient livestock production is expected to reduce agricultural losses caused by climate change impacts.

2. Reducing vulnerability to the negative impacts of climate change can be achieved through:

- a creation of climate-optimised financial services and products in agriculture;
- a state programme of climate-smart agricultural support should be developed and launched based on the results of the Agricultural Finance Programme, taking into account the needs of vulnerable groups and aiming to ensure access to concessional finance for farms to implement climate-resilient technologies.

3. Strengthening adaptive capacity by:

- conducting scientific research on the impacts of climate change on agriculture;
- developing agricultural development policies that take into account climate change, gender and vulnerable groups;

- increasing climate awareness and knowledge on adaptation to climate change among government officials, local authorities and land users, with **the expected outcome of science-based policy making ensuring climate-resilient agriculture and food security for the country.**

Existing active projects

- In 2022, the European Bank for Reconstruction and Development (EBRD) granted a loan of up to €50 million to rehabilitate the country's water irrigation infrastructure. This has resulted in the availability of approximately 8.7 thousand hectares of newly irrigated land for farmers, creating additional employment opportunities for over 14.3 thousand rural residents.
- In 2021, the Asian Development Bank (ADB) launched the 'Kyrgyz Republic: Water Sector Project on Climate Change and Disaster Resilience' in the Fergana Valley and the Chui River Basin. The project covers over 3,000 hectares. The project aims to enhance the water sector's resilience to climate change and disasters by upgrading and maintaining infrastructure, improving agricultural and on-farm water management, and implementing climate-smart technologies (CSA) for disaster risk management.
- The GIZ project 'Approaches to Integrated Land Management (2021-2025, €10.18 million)' is being implemented at the national and regional levels. The project focuses on forest, rangeland, and transboundary protected area management, monitoring and reporting, as well as regional cooperation on land use, climate, and the environment.
- The GIZ project 'Climate Sensitive Regional Water Management in Central Asia (2023-2027, EUR 10.0 million)' aims to enhance climate-sensitive regional water management through river basin dialogue, improve regional cooperation, and develop capacity. The project also aims to implement crucial sub-areas of climate-sensitive integrated water resources management (IWRM), including pilot measures.
- The GCF/FAO project 'Carbon Sequestration through Climate Investments in Forests and Rangelands - CS-FOR' has a budget of 30.0 million USD and is set to run from 2023 to 2030. Its objective is to promote a low carbon and climate resilient economy. The project targets all users of pasture and forest resources in the four project districts (Ak-Talin, Toguz-Toru, Uzgen and Suzak) located in the Naryn, Jalal-Abad and Osh oblasts. This project group was chosen due to the severe degradation of rangelands and forest areas. The project aims to contribute to the uptake of approximately 27.6 million tonnes of CO₂ equivalent through:
 - reforestation and afforestation of 6,000 hectares of severely degraded forests;
 - restoration/rehabilitation of approximately 644,000 hectares of degraded pastures;
 - improved management of approximately 56,000 hectares of forests;
 - enhancing the resilience of around 90,000 vulnerable families in the project area to climate change.

Component 3: Ensuring climate resilience of energy infrastructure

Key areas

A. Development of climate change adaptation measures for the operation of existing hydropower plants (HPPs):

- Develop technical standards, norms and regulations for climate-resilient energy infrastructure and implement them;

- Improve the resilience of energy infrastructure to overloading under critical temperature variations and enhance the security of energy infrastructure from climate emergencies.
- B. Development of adaptation measures for climate change in the construction of new hydroelectric power plants:
- Development of technical standards, norms, and regulations for climate-resilient energy infrastructure and their implementation;
- C. Ensuring climate resilience of energy supply through diversification of generation sources:
- Conducting scientific research on the impact of climate change on the country's energy security;
 - Increasing the share of energy generated by wind, solar plants and biomass and biodiesel-fuelled plants;
 - Level of introduction of cogeneration in the industrial sector (e.g. number of enterprises supported to invest in small power installations);
 - Increased awareness and knowledge of the energy sector and the public on climate change issues, with the expected result of evidence-based policies for climate-resilient energy sector development;
 - Development of mechanisms to strengthen metering and control of rational use of energy resources with the expected result of improved energy efficiency;
- D. Development of climate change adaptation measures for energy transmission and distribution facilities.

Existing active projects

1. The Lebedinovskaya HPP Reconstruction Project is being financed by the EBRD at a cost of EUR 13.8 million. The project aims to rehabilitate the existing Lebedinovskaya HPP, which will improve the reliability of its operation. The reconstruction of the Lebedinovskaya HPP has the potential to increase electricity generation from 34.2 GWh per year to 53.5 GWh, which is a 56% increase in generation.
2. Project "Modernisation and Sustainable Development of the Electricity Sector" financed by the International Development Association (World Bank). The project cost is \$50.0 million, and aims to improve the financial and operational sustainability of the electricity sector by rehabilitating distribution networks and digitalising the energy metering system.
3. Project "Technical Assistance for the Kamarata HPP-1 Project" financed by the International Development Association (World Bank). The cost of the project is USD 5.0 million. The project is aimed at ensuring energy security, reliable sustainable operation of the energy system, rational use of water resources, and increasing the generating capacity of the Kyrgyz Republic.
4. Project "Development of Renewable Energy of the Kyrgyz Republic" financed by the International Development Association (World Bank). The cost of the project is US \$35.5 million. The project aims to increase hydropower generation and ensure integration of renewable energy sources by strengthening the electricity supply system.
5. World Bank regional project "Sustainable Renewable Energy Risk Mitigation Initiative Facility (SRMI, Phase 2)" for a total amount of US\$1.1 billion. Financing of the GCF is approved in April 2023. The Kyrgyz Republic's share in this project is US\$80.2 million. The funds will be used for

reconstruction of the Bystrovskaya HPP, construction of a small HPP on the Tar River, construction of substations, training and improvement of management in the electricity sector.

Component 4: Ensuring climate resilience in transport infrastructure

Key areas for building infrastructure resilience (resilience to both climate events and natural disasters):

- Integrate climate risk management into the engineering and planning of new and existing road and related infrastructure (e.g. tunnels, bridges, etc.). For example, surface water drainage, storage and drainage systems should be designed for projected water volumes;
- Integrate a climate change adaptation component into all technical specifications and feasibility studies for transport infrastructure reconstruction projects;
- Analyse and modify existing operational and maintenance procedures (e.g. drain cleaning);
- Conduct studies on the vulnerability of transport networks to climate-related disasters to identify the most vulnerable locations;
- Strengthen capacity of the Ministry of Transport and Communications (MTC) to prepare for climate change and extreme events;
- Develop the optimal design and planning solutions for construction and location of facilities (including earthquake-resistant construction standards), design of infrastructure using new earthquake-resistant structures and local raw materials that meet the requirements of earthquake-resistant construction, joint modelling and training with road operators and emergency services to prepare for earthquakes.
- Establish a monitoring network that combines visual and instrumental observations to map areas, predict landslides, and improve disaster response. Additionally, a network of automatic early warning/alerting systems will be established to interact with road operators, construction clients, and contractors to detect signs of landslide activation and alert local communities of imminent and potential landslides.
- Conducting additional research to extrapolate the specific causal link between climate events and increased vulnerability that are key to explaining and validating the climate case when requesting funds, e.g. through GCFs.

Existing active projects

Under the Bishkek Buses Project of the Green Cities 2, Window 2 Programme, funded by the European Bank for Reconstruction and Development (EBRD) and a grant from the Government of Japan, 124 new compressed natural gas buses were delivered to MP BPATP. The project will implement an enterprise resource planning (ERP) system with GPS navigation, which is expected to enhance the efficiency of the municipal bus company and substantially reduce emissions from the vehicle fleet.

The ADB project “Issyk-Kul Ring Road Improvement Project” will: (i) improve the 79-kilometer Barskoon-Karakol road, a part of the Issyk-Kul Ring Road, (ii) enhance the management of the road asset, (iii) improve road safety, and (iv) support the preparation of the climate strategy and action plan. The project derives synergies with earlier assistance and adopts a cross-sectoral approach to integrated development in the Issyk-Kul Lake area, with an integration of gender perspective.

Component 5: Ensuring climate resilience of municipal water supplies

Key areas for strengthening the climate resilience of municipal water supply:

- Identification and reduction of technical losses (leakages) through reconstruction / new construction of water supply infrastructure;
- Conducting studies to identify commercial losses (illegal connections) to improve water security;
- Incorporating leakage monitoring and reporting technologies into existing operation and maintenance programmes, including the establishment of distribution monitoring zones to ensure active leakage monitoring and control;
- Demand-side management through technological (e.g. water saving devices), financial (e.g. metering), legislative (e.g. water use restrictions), and operation and maintenance measures (e.g. loss reduction), and education (e.g. awareness raising);
- Capacity development programme for asset management, leakage control and water quality;
- Development of technical standards, norms and regulations for climate-resilient water supply and their implementation (e.g. length of infrastructure managed to these standards).

Existing active projects

The WB project "Climate Resilient Water Services (2022-2027, US\$50 million)", aims to (i) increase access to climate resilient water services in selected river basins, (ii) strengthen institutional capacity for climate resilient water management at local and national levels, (iii) improve monitoring of water and soil quality.

EBRD-financed water supply and wastewater projects:

- The Naryn Water Supply and Sewerage System Rehabilitation Project envisages construction of a Waste water (Sewerage) facilities (2020-2024, €5.5 million);
- Mailuu-Suu Water Supply and Sewerage System Rehabilitation Project envisages reconstruction of the head intake, construction of water supply networks and construction of two reservoirs (2020-2024, EUR 5.65 million);
- The project "Rehabilitation of Water Supply and Sewerage in Bishkek (Phase II)" envisages drilling of 16 wells and construction of a sewerage collector (2018-2023, 18.0 million Euros);
- The project "Rehabilitation of water supply and sewerage system in Tokmok" envisages construction of water supply system, supply of special machinery and laboratory equipment, submersible and horizontal pumps for 4 water intakes (2018-2023, EUR 5.1 million).

Component 6: Ensure climate resilience of buildings

Key areas

A. Improving energy and water efficiency

Developing the energy efficiency of buildings through modernization of building design, insulation, and fuel-efficient heating and cooking systems to reduce energy consumption;

- Replacing or modernizing the building stock over time with resource-efficient and climate-adapted buildings that use energy and water resources efficiently;
 - The implementation of the latest water-saving technologies and efficient water use practices, as well as the utilization of alternative water sources where feasible.
- B. Protecting buildings from extreme weather events and related hazards
- improving building standards to ensure that infrastructure is resilient to climate-related hazards;
 - levees, embankments or berms, diversion dams, floodwalls, and bank protection structures can be used to reduce peak flows, divert floodwaters, increase groundwater recharge, and protect downstream infrastructure and buildings.
 - To reduce the risk of riverbank erosion and damage to infrastructure and buildings, bank vegetation will be restored. This will include planting bank flora, fencing riparian areas, and providing off-river watering points for livestock.
 - In order to protect urban areas (where possible), land use planning/zoning restrictions and capital engineering structures and other structures will be utilized.

Existing active projects

- IDA (WB)-financed heating improvement project from 2019, US\$46.0 million (Demonstrating the benefits of energy efficiency improvements in public buildings);
- EBRD KyrSEFF Sustainable Energy Financing Programme, US\$55 million (introduction of energy and water conservation and waste management equipment in households and businesses);
- World Bank project "Building Resilience to Disaster Risks in Kyrgyzstan" (2018-present), USD 20 million (improving safety and functional condition of schools (including energy efficiency) in areas with the highest seismic risk).

Component 7: Strengthening climate change adaptation in healthcare

The Government of the Kyrgyz Republic has identified health as a priority sector in its climate change adaptation activities, the sector programme of the Ministry of Health identifies the following major health risks:

- Direct climate change risks to human health (e.g. cardiovascular and respiratory diseases or vector-borne diseases);
- Risks related to the preparedness of infrastructure and health facility staff (e.g. surveillance and early warning systems or training of health workers);
- Risks to other socioeconomic and environmental factors related to health and climate change (e.g. water and food safety).

Key areas

- Assess the vulnerabilities and risks of the health system associated with climate change and incorporate them into the country's health strategy in partnership with relevant government agencies, international organizations, and civil society;
- Develop indicators of climate impacts and vulnerabilities and periodically monitor the health impacts of key environmental determinants of health, such as air quality, water quality, food quality, housing safety, and waste management;

- Develop a health system development policy that considers climate change adaptation, gender aspects, and the interests of vulnerable groups;
- Improve the clinical regulatory framework for health system adaptation to climate change. The expected outcome is evidence-based policy for climate-resilient health system development and improvement of the clinical regulatory framework;
- Develop emergency response plans and emergency management procedures to predict and respond to events that affect public health;
- Establish early warning systems for public health threats caused by extreme weather events to enhance climate resilience;
- Develop technical standards, norms, and regulations for climate-resilient social and health facilities, and implement them (e.g. manage a certain number of facilities according to these standards);
- Develop a comprehensive program to reduce and prevent the impacts of climate change and health threats, and implement the program at the settlement level.

Component 8: Enhancing climate change adaptation in subsoil use

The mining sector is vulnerable to the impacts of climate change due to its reliance on long-term and capital-intensive assets, operation in areas prone to extreme climate events, and high water consumption. Operational problems, restrictions on water withdrawals, stricter water quality standards, and increased public scrutiny of water use practices may result from declining water volumes, declining water quality, and increasing water demand. The effects of climate change may also create additional difficulties in obtaining environmental permits and public licenses to operate.

Key areas

- Establish a sustainable system for controlling and monitoring environmental protection and management, enabling informed management decisions;
- Awareness-raising programme should be developed and implemented to promote climate-resilient and environmentally sound subsoil use practices;
- A reforestation programme should be developed and implemented by small, medium, and large-scale mining enterprises;
- Use GIS/remote sensing to inform decision-making on climate change adaptation in the mining sector;
- Develop guidelines for integrating climate change adaptation into environmental impact assessments for the construction of new mining infrastructure;
- Develop a national research programme on climate impacts on the mining sector and climate-resilient, environmentally sound mining practices. The research will cover climate impacts, alternative freshwater sources, appropriate afforestation, and closed-loop mining systems;
- Improve water use efficiency in mining through higher levels of reuse and recycling.
- Upgrade engineering design standards, design criteria and contract specifications to reflect climate change.

Component 9: Enhancing private sector participation in climate change adaptation

Globally, the private sector is playing an increasingly important role in climate change adaptation. Around 97% of agricultural output is produced by the private sector, which includes small farmers and large agro-industries. These groups are vulnerable to the impacts of climate change, particularly in terms of the availability and supply of water, energy, and raw materials.

Ключевые направления

- Replacement or modernisation of industrial buildings and processes over time with resource-efficient and climate-adapted solutions with efficient use of energy and water resources;
- Facilitating access to finance for agricultural and manufacturing supply chains to meet investment needs to develop adaptive capacity;
- Providing financial support and training to companies intending to supply climate products or services;
- Supporting agricultural producers and processors in implementing efficient water and land use technologies, selecting climate-resilient crops, and providing access to information on climate change;
- Capacity building activities to improve private sector knowledge of the most appropriate sectoral technologies and practices.

Existing active projects

- The Asian Development Bank and Aiy Bank OJSC have signed a loan, grant, and project agreements for the 'Climate Resilient Agricultural Value Chains Development Project' with a budget of \$40 million. The project aims to assist the bank in providing more structured credit products to small and medium-sized agribusinesses, including aggregators, harvesters, processors, and horticultural export enterprises such as apples, pears, apricots, cucumbers, garlic, onions, and potatoes. The project will help to develop climate-resilient agricultural value chains in the region. The project aims to provide credit funds to agricultural processors for investment purposes. This will improve processing and storage capacity, and reduce post-harvest losses by establishing modern and efficient processing, storage, and refrigeration facilities. The focus of the project is to increase the supply of fresh and processed horticultural products to both domestic and international markets.

Component 10: Enhance climate change adaptation in forestry and biodiversity

The Kyrgyz Republic is considered one of the world's 200 priority ecoregions due to its high concentration and diversity of species. The Kyrgyz Republic is considered one of the world's 200 priority ecoregions due to its high concentration and diversity of species. Approximately 2% of the world's flora and 3% of the world's fauna species are found here. Biodiversity conservation is often hindered by negative human impact on natural ecosystems. Additionally, the unique forests and biodiversity of the Kyrgyz Republic face increasing risk from climate change. Ensuring climate-resilient management of the forestry sector can bring significant benefits to the national economy, society, and the environment.

Climate impacts that require attention include ecosystem degradation and loss of biodiversity, leading to increased forest pest outbreaks and changes in boundaries and habitats for flora and fauna.

Key areas

- Improving the efficiency of protected area management and expanding the network of protected areas;
- Conducting scientific research on the impact of climate change on forests, ecosystems and biodiversity and introducing climate change adaptation and conservation of natural ecosystems into the state policy on forestry and biodiversity conservation;
- Conservation and restoration of wetlands as habitats for natural biodiversity and as an essential component of the natural environment that plays a crucial role in climate change adaptation;
- Conducting economic valuation of ecosystem services and needs assessment;
- Determination of ecological capacity in economic planning;
- Sustainable forest management (monitoring, conservation, protection, reproduction);
- Integration of climate change impacts into management plans and practices of forestry enterprises and protected area systems;
- Promotion of biodiversity conservation and restoration of disturbed natural ecosystems to strengthen their resilience to climate change;
- Increased capacity and awareness of Forest and Biodiversity sector stakeholders on climate change adaptation;
- Strengthening capacity and effectiveness of management at specially protected natural areas and their expanding;
- Raising climate awareness and adaptation knowledge of the personnel of the forest complex and specially protected natural territories with the expected result of formation of science-based policy of forest complex development and biodiversity conservation taking into account climate change;
- Monitoring of flora and fauna populations under climate change conditions.

Existing active projects

1. The GCF/FAO project 'Carbon Sequestration through Climate Investments in Forests and Rangelands - CS-FOR' will receive 30.0 million USD between 2023 and 2030. The project aims to promote a low carbon and climate resilient economy. The main target group of the project is all users of pasture and forest resources in the target area of the four project districts (Ak-Talin, Toguz-Toru, Uzgen and Suzak) in the selected three oblasts (Naryn, Jalal-Abad and Osh oblasts). This project group was chosen due to the severe degradation of rangelands and forest areas. The project aims to contribute to the uptake of approximately 27.6 million tonnes of CO₂ equivalent through:

- Reforestation and afforestation of 6,000 hectares of severely degraded forests;
- Restoration/rehabilitation of approximately 644,000 hectares of degraded pastures;
- Improved management of approximately 56,000 hectares of forests;
- Enhancing resilience of around 90,000 vulnerable families in the project area to climate change.

2. UNDP's Biodiversity Finance Initiative (Phase II), BIOFIN-Phase II aims to implement national resource mobilisation strategies to increase investment in biodiversity. The Project Steering Committee has approved financial solutions aimed at introducing new alternative sources of biodiversity finance. These solutions include the establishment of a Biodiversity Trust Fund, reforming harmful subsidies in the agricultural sector, improving the financing structure of protected areas and forestry, and introducing an effective system of financial self-sufficiency for protected areas. The project has received additional EU funding until 2025 through a cost extension.

3. GIZ project "Community-based management of walnut forests and pastures in southern Kyrgyzstan (EUR 4.9.mln)", introducing sustainable models of forest and pasture management by individual communities in southern Kyrgyzstan to contribute to biodiversity conservation, support climate change adaptation and increase local incomes.

4. GEF/UNDP project "Conservation of Globally Important Biodiversity and Associated Land and Forest Resources of Mountain Ecosystems in the Western Tien Shan to Support Sustainable Livelihoods (USD 3.9. million)". The project aims to implement best practices for landscape conservation and management in biodiversity areas, buffer zones, corridors, forests and pastures, the sustainable management of which is key to biodiversity conservation and sustainable use of forests and land resources, including the survival of snow leopard and its prey species, as well as sustainable development of local communities.

Component 11: Strengthening adaptation in the emergency sector

The Kyrgyz Republic is vulnerable to various climate-related hazards, such as landslides, mudslides, rockfalls, avalanches, floods, and glacial lake outbursts. Climate variability and future climate change projections suggest that the frequency of these extreme events will rise over time. To ensure effective protection of the population and territories from emergencies, it is crucial to invest in monitoring and forecasting dangerous natural processes and phenomena. This requires implementing a range of measures, including preventive, emergency recovery, and scientific survey work in potentially hazardous areas.

This sector considers the increased vulnerability of infrastructure and population to hydrological emergencies, increased vulnerability of infrastructure and population to emergencies related to activation and reactivation of gravity processes and increased damage from meteorological emergencies to infrastructure and population.

Key areas

- Development of the State system of civil protection and preparedness to respond to disaster risks;
- Providing scientific basis for decision-making processes on response and prevention of hydrometeorological emergencies;
- Improving the policy of prevention and response to climate emergencies, gender aspects and interests of vulnerable groups;
- Development of the system of monitoring and forecasting of dangerous natural processes and phenomena and modernisation of the hydro- and glaciological monitoring system;

- Carrying out protective measures (emergency recovery works, capital construction and special preventive and liquidation measures);
- Development of the Unified Information and Management System in emergency and crisis situations;
- Development of an insurance system (legislation);
- Increasing knowledge and understanding of disaster risk.

Existing active projects

ADB project (\$16,800,000), Climate Change and Disaster Resilience, will strengthen water sector resilience to climate change and disasters through: upgraded and well-maintained infrastructure (4 main canals), improved agricultural and on-farm water management (On-farm Water Resources Management and Agricultural Water Management DWR-AWR) plans, etc.), and improved disaster risk management (20 hydrological posts for Kyrgyzhydromet). The project will improve water sector resilience to climate change and natural disasters through: modernised and well-maintained infrastructure (4 main canals), improved agricultural and on-farm water management (on-farm water management and agricultural water management plans of DWR-AWP, etc.), and improved disaster risk management (20 hydrological posts for Kyrgyzhydromet, flood risk warning information system, 100 units of heavy equipment, etc.).

Executing Agencies: Ministry of Emergency Situations (MES) and Department of Water Management and Reclamation (DWR) of the Ministry of Agriculture, Food and Land Reclamation. Duration: 2019-2025.

In order to implement the Climate Investment Programme, an Action Plan has been developed consisting of activities and project ideas for each area (Annex). This Plan represents a portfolio of project concepts and ideas of the CCF and will be periodically (every 2-3 years) updated in accordance with new needs and priorities.

6. Monitoring and Evaluation

Monitoring as an obligatory component of public policy is a tool for systematically collecting, analyzing information and assessing the implementation of program-planned activities, as well as making adjustments. As part of the implementation of this Climate Investment Program, the developed set of indicators will be used.

The performance indicators of the activities of this Climate Investment Program are:

- reduction of greenhouse gas emissions by 44% by 2030;
- increasing the adaptive capacity of government bodies, local governments (as agreed) to provide specialized climate information for project subjects;
- ensuring climate resilience of infrastructure in the energy, transport, water supply sectors, including ensuring climate resilience in social facilities;

- ensuring strengthening of adaptation to climate change in the sectors of health, subsoil use, agriculture, forestry and biodiversity, emergency situations;
- ensuring improved quality of climate service delivery;
- improving the regulatory framework in the climate sector;
- conducting an analysis of the effectiveness of existing mechanisms and instruments for climate finance, distribution of funding volumes in economic and social sectors and strengthening the national system of measurement, monitoring and verification (MRV) will allow:
 - improve political and legislative documents;
 - strengthen intersectoral cooperation;
 - increase the capacity of staff and public awareness, taking into account the interests of women, youth and vulnerable groups;
 - assess the effectiveness of climate-smart technologies and ongoing climate projects.

During the implementation of each stage of the Climate Investment Program, an assessment of the achieved results will be carried out in order to develop proposals for improvement, necessary corrective measures and further work on adaptation and mitigation measures in general, monitoring and evaluating the effectiveness of projects within the framework of 11 components of the climate investment program.

**Project Portfolio
of the Climate Investment Program until 2026**

	Projects	Responsible parties	Timeframe	Expected results	Financing, (mln. USD)
1	2	3	4	5	6
	Component 1. Improving the quality of climate services				
1	Development of a nationwide integrated system of warning and informing the population about emergencies	MES	2024-30	Reducing emergency response and recovery time, reducing economic and human losses from emergencies, increasing resilience of vulnerable communities	11,0
2	Development of the Unified System of Integrated Monitoring and Forecasting of Emergency Situations in the Kyrgyz Republic	MES	2024-27	Prevention and reduction of disaster risks, improvement of information and analytical support of MES KR activities	10,0
	Component 2. Increasing climate resilience of agriculture for food security				
3	Introduction of climate-resilient irrigation system on unproductive lands of Batken oblast	Ministry of Agriculture	2024-34	Development of climate-resilient irrigation system on unproductive lands of Batken oblast to improve food security and well-being of local residents	100,0
4	Low-carbon livestock production by introducing high-yielding livestock to pastures in the Kyrgyz Republic	Ministry of Agriculture	2024-34	Reduction of greenhouse gas (methane) emissions from livestock production and reduction of pasture degradation	100,0
5	Improving climate resilient food security of farms in Batken oblast through integrated drought risk management	Ministry of Agriculture	2024-28	Improving the adaptive capacity of Batken oblast to ensure food security in the context of climate change	21,0
6	Strengthening the climate resilience of local communities livelihoods through the introduction of green technologies, with focus on	Ministry of Agriculture	2025-32	The Project aims to reduce rural Aimak's climate vulnerability enhancing their capacities for green technologies uptake and improving finance	48,5

	Projects	Responsible parties	Timeframe	Expected results	Financing, (mln. USD)
	organic production and expansion of the Organic Aimak movement to Western and Southern Kyrgyzstan			accessibility in the crop production landscapes of Southern Kyrgyzstan	
Component 3. Ensuring the climate resilience of energy system infrastructure					
7	Construction of solar photovoltaic station on the territory of HPP-4, capacity 0.5 MW	Ministry of Energy	2024-25	Increase renewable energy generation, reduce fossil fuel consumption and greenhouse gas emissions	0,5
8	Increasing the climate resilience of low-income families in Kyrgyzstan by installing solar power systems and improving the energy efficiency of their homes	Ministry of Labor, Ministry of Energy	2024-26	Reducing greenhouse gas emissions, adapting vulnerable populations to the impacts of climate change	25,0
Component 4. Improving climate resilience of transportation infrastructure					
9	Introducing electric bus passenger transportation and building charging infrastructure	Ministry of Transport	2024-26	Building a more sustainable and environmentally friendly passenger road transport system	25,0
10	Promote low-carbon electric taxi service to mitigate climate change	Mayor's Office of Bishkek City	2024-29	Reduce air pollution, reduce carbon emissions, improve air quality, reduce dependence on petroleum products	34,7
Component 5. Building the resilience of municipal water systems to climate change					
11	Modernization and reconstruction of wastewater treatment facilities in Bishkek	Mayor's Office of Bishkek City	2023-27 rr.	Introduction of advanced wastewater treatment technologies, reduction of greenhouse gas emissions during wastewater treatment	18,0
12	Risk Reduction and Scale-up of Investments in Decentralized climate-optimized Wastewater Treatment Systems in Issyk-Kul Oblast of the Kyrgyz Republic	State Agency for Architecture and Construction	2024-28 rr.	Strengthening climate resilience of the vulnerable high-mountain ecosystem of the Issyk-Kul Biosphere Territory	25,0
13	Mechanical-biological treatment of solid waste	State Agency for Architecture	2025-28	The project aims to establish an efficient waste management system in	49,45

	Projects	Responsible parties	Timeframe	Expected results	Financing, (mln. USD)
		and Construction		Bishkek, Kyrgyzstan, with the intention of later sharing the knowledge gained with other regions in the country	
	Component 6. Improving the climate resilience of buildings				
14	Establishment of the Energy Saving and Investment Fund of the Kyrgyz Republic	State Agency for Architecture and Construction	2024-26	Reduction of energy intensity in the KR, promotion and formation of energy saving ideology at all levels	10,0
15	Reducing the risks of low-carbon investments in public buildings in the Kyrgyz Republic	State Agency for Architecture and Construction	2024-31	Reduction of greenhouse gas emissions through increased investment in low-carbon public buildings	61,5
16	Improvement of energy and resource efficiency of apartment buildings in cities of Kyrgyzstan	State Agency for Architecture and Construction, municipalities	2024-28	Introduction of sustainable solutions for the efficient use of energy, water and material resources in the energy retrofitting of residential buildings	37,0
17	Thermal insulation of public buildings	State Agency for Architecture and Construction, municipalities	2025-32	Reduction energy consumption in public buildings and annual GHG emissions	25,7
	Component 7. Building healthcare system resilience to climate change				
18	Strengthening climate resilience of the healthcare system of the Kyrgyz Republic	Ministry of Health	2024-26	Enhancing climate change resilience of the Kyrgyz health system and strengthening community capacity to manage current and expected health impacts of climate change	25,0
	Component 8. Enhancing the resilience of the mining sector to climate change				
	Component 9. Enhancing private sector engagement in climate resilience				

	Projects	Responsible parties	Timeframe	Expected results	Financing, (mln. USD)
	Component 10. Strengthening the resilience of the forest sector and biodiversity to climate change				
19	Sustainable development of ecosystem services in Issyk-Kul oblast of the Kyrgyz Republic under climate change challenges	Ministry of Natural Resources	2024-29	Conservation of the Lake Issyk-Kul ecosystem and development of ecosystem services in the context of climate change	30,0
20	Increasing the number of green plantings and developing tree nurseries in Bishkek city	Mayor's Office of Bishkek City	2024-26	Development of tree nurseries to increase green areas in Bishkek to create a favorable urban microclimate	10,0
21	Improvement of the boulevard along Ch. Aitmatov Ave. - A. Masalieva St.	Mayor's Office of Bishkek City	2024-26	Organization and improvement of the boulevard in the southern planning district of the city of Bishkek on Masalieva-Ch.Aitmatov str.	25,0
22	Greening and improvement of waterfront areas of the Ala-Archa and Alamedin rivers	Mayor's Office of Bishkek City	2024-26	Preservation of green areas in Bishkek and creation of favorable conditions for recreation of the urban population	37,7
	Component 11. Building resilience to climate change in emergencies				
23	Adaptation and mitigation of the effects of climate change in the area of mudflow climate emergencies through the construction of mudflow protection structures	MES	2024-26	Increased resilience to extreme weather events such as mudslides and floods	10,0