Strengthening the capacity of the Republic of Tajikistan to comply with the Enhanced Transparency Framework under the Paris Agreement.

Part I: Project Information

GEF ID
10967

Project Type
MSP

Type of Trust Fund
GET

CBIT/NGI
CBIT **Yes**
NGI **No**

Project Title
Strengthening the capacity of the Republic of Tajikistan to comply with the Enhanced Transparency Framework under the Paris Agreement.

Countries
Tajikistan

Agency(ies)
FAO

Other Executing Partner(s)   **Executing Partner Type**
Agency for Hydrometeorology (Hydromet)   Government
GEF Focal Area
Climate Change

Taxonomy
Climate Change Adaptation, Climate Change, Focal Areas, Climate Change Mitigation, United Nations Framework Convention on Climate Change, Nationally Determined Contribution, Capacity Building Initiative for Transparency, Paris Agreement, Influencing models, Strengthen institutional capacity and decision-making, Transform policy and regulatory environments, Stakeholders, Type of Engagement, Information Dissemination, Consultation, Civil Society, Non-Governmental Organization, Communications, Awareness

Raising, Gender Equality, Gender Mainstreaming, Sex-disaggregated indicators, Gender-sensitive indicators, Gender results areas, Capacity Development, Knowledge Generation and Exchange, Capacity, Knowledge and Research, Knowledge Generation, Learning, Indicators to measure change, Knowledge Exchange

Sector
Mixed & Others

Rio Markers
Climate Change Mitigation
Climate Change Mitigation 2

Climate Change Adaptation
Climate Change Adaptation 1

Duration
36 In Months

Agency Fee($)
125,387.00

Submission Date
4/8/2022

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CCM-3-8	GET	1,319,863.00	500,000.00
Total Project Cost ($)		**1,319,863.00**	**500,000.00**

B. Indicative Project description summary

Project Objective

Strengthening Tajikistan?s national capacities to meet the enhanced transparency framework (ETF) for climate change mitigation and adaptation actions and support received for the sectors covered by nationally determined contributions (NDCs).

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 1: Strengthening institutional capacity for coordinated monitoring and reporting under ETF.	Technical Assistance	Outcome 1.1: Enhanced institutional coordination for monitoring and reporting under ETF. Outcome 1.2: Enhanced stakeholders ? capacity and knowledge of modalities, procedures, guidelines (MPGs) and reporting formats of the ETF.	Output 1.1.1 Established ETF roadmap, action plan and institutional arrangement focusing on climate change mitigation and adaptation and support received in Tajikistan. *Activity 1.1.1.1* *Conducting a GAP analysis on the existing MRV system and gender-inclusive institutional arrangement to comply with the ETF requirement.* *Activity 1.1.1.2* *Conducting technical workshops and consultations on GAP analysis for ensuring a gender-inclusive national ETF roadmap.* *Activity 1.1.1.3* *Formulating Tajikistan?s Enhanced Transparency Framework Roadmap and Action Plan (ETFRAP) focusing on national organization and their roles in formulating*	GET	220,529.00	83,545.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Enhancing stakeholders? technical capacities for ETF reporting focusing on climate change adaptation, mitigation, and climate finance.	Technical Assistance	Outcome 2.1: Strengthened technical capacities for monitoring and reporting NDC adaptation actions. Outcome 2.2: Strengthened technical capacities for monitoring and reporting NDC mitigation actions. Outcome 2.3: Enhancement of the existing technical capacities for monitoring and reporting climate finance and support received for NDC actions.	Output 2.1.1 National stakeholders with enhanced technical capacity for monitoring and reporting NDC climate change adaptation actions. *Activity 2.1.1.1* *Conduct a capacity gap assessment on the existing system for M&E climate change impacts, risks and vulnerabilities of NDC prioritized sectors.* *Activity 2.1.1.2* *Developing guideline and action plan on M&E of NDC adaptation actions at national, sub-national, programme and project levels.* *Activity 2.1.1.3* *Conducting gender-sensitive training on tracking climate change adaptation actions of NDC involving NGOs and private sectors following ToT model.*	GET	441,059.00	167,084.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 3: Developing a data and information management system for ETF on NDC mitigation, adaptation actions, and support received.	Technical Assistance	Outcome 3.1: Developed a transparency portal with updated data and information on NDC mitigation, adaptation actions, and support received.	Output 3.1.1 Established guidelines, protocols and indicators on data collection, update archiving, and tracking of GHG inventory, adaptation, climate finance and support received in Tajikistan. *Activity 3.1.1.1 Develop guidelines, protocols and indicators based on the ETFRAP and ETFIA for data collection, update archiving and tracking the NDC actions for the transparency portal.* *Activity 3.1.1.2 Conducting national validation consultation workshops to develop guidelines, protocols, and indicators.* *Activity 3.1.1.3 Conducting gender-sensitive training on developed guidelines, protocols, and indicators following ToT model.*	GET	441,059.00	167,084.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Monitoring & Evaluation (M&E)	Technical Assistance	Project monitoring and evaluation	Project M&E is conducted regularly including mid-term and final evaluations	GET	97,228.00	36,837.00
				Sub Total ($)	**1,199,875.00**	**454,550.00**

Project Management Cost (PMC)

		GET	119,988.00		45,450.00	
Sub Total($)			**119,988.00**		**45,450.00**	
Total Project Cost($)			**1,319,863.00**		**500,000.00**	

Please provide justification

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Hydromet	In-kind	Recurrent expenditures	200,000.00
GEF Agency	FAO	Grant	Recurrent expenditures	300,000.00
			Total Project Cost($)	**500,000.00**

Describe how any "Investment Mobilized" was identified

n/a

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
FAO	GET	Tajikistan	Climate Change	CBIT Set-Aside	1,319,863	125,387	1,445,250.00
			Total GEF Resources($)		**1,319,863.00**	**125,387.00**	**1,445,250.00**

E. Project Preparation Grant (PPG)

PPG Required   **true**

PPG Amount ($)

50,000

PPG Agency Fee ($)

4,750

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
FAO	GET	Tajikistan	Climate Change	CBIT Set-Aside	50,000	4,750	**54,750.00**
				Total Project Costs($)	**50,000.00**	**4,750.00**	**54,750.00**

Core Indicators

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	128			
Male	192			
Total	320	0	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

The proposed project will support the Capacity Building Initiative for Transparency (CBIT) of GEF-7 Climate Change Mitigation Focal Area Strategy. After completion of the project, Tajikistan will be capable of building institutional and technical capacities to meet the enhanced transparency requirements in the Paris Agreement through (i) coordinated and strengthened national institutional effort on ETF, (ii) enhanced technical capacity of the stakeholders, and packaged set of tools for tracking the NDC adaptation actions, (iii) enhanced technical capacity of the stakeholders and packaged set of tools for the consistent GHG inventory preparation and tracking the NDC mitigation actions, and (iv) enhanced technical capacity of the stakeholders and packaged set of tools for tracking the climate finance (domestic and international) and support received for NDC actions. The number of beneficiaries is estimated based on the number of staff in different ministries and national agencies in Tajikistan such as State Agency for Hydrometeorology of the Committee for Environmental Protection under the Government of Tajikistan (Hydromet), Ministry of Energy & Water Resources (MoEWR), Academy of Science (AoS), Ministry of Finance (MoF), Green Finance Project Implementation Unit, Ministry of Economic Development and Trade (MoEDT), Ministry of Agriculture (MoA), Ministry of Industry & New Technology (MoINT), Ministry of Transport (MoT), Ministry of Foreign Affairs (MoFA), Committee on Investments and State Property (CoISP), Statistics Agency (SA), Agency on Forestry (AoF), State Unitary Enterprise for Residential Services (SUERS), Agency on Land Reclamation and Irrigation under the Government of Tajikistan (ALRI), Committee for Environmental Protection under the Government of Tajikistan (CEP), private sector (Water Users Associations, Dekhkan Farms Association, cargo transportation companies, passenger transportation companies, national power companies (Barqi Tojik and Pamir Energy), State Department of Housing and Utilities (State Unitary Enterprise Khojagii Manzili Komunali), NGOs (Kukhiston, Youth Ecological Center and Little Earth), and national universities (Tajik National University,

Russian-Tajik Slavonic University, Tajik Agrarian University and Technological University of Tajikistan).

Part II. Project Justification

1a. Project Description

(1)   GLOBAL ENVIRONMENTAL PROBLEMS

1.1 The Paris Agreement and transparency framework

1. The 21st Conference of Parties (CoP) in December 2015-the Paris Agreement urge a worldwide action plan to avoid the devastating consequences of climate change. The action plan calls for taking meaningful initiative from each nation to limit global warming below 2?C. In response to that, signatory countries stated their targeted greenhouse gas (GHG) emissions reduction in the Nationally Determined Contributions (NDC). The ultimate goal of each country?s NDC is to achieve the target of the Paris Agreement. Article 13 of it calls for an enhanced transparency framework (ETF) for each participating country to transparently present and report action and support concerning NDC[1][1].

2. The ETF of the Paris Agreement guides countries to report their GHG emissions, progress toward their NDCs, climate change impacts and adaptation, the support provided and mobilized, and support needed and received[2][2]. As per ETF, all the signatory countries of the Paris Agreement need to submit Biennial Transparency Reports (BTRs) by December 31, 2024. Developed countries need to submit Biennial Reports (BR) by December 31, 2022, and for developing countries, BTR needs to submit by December 31, 2024[3][3]. Many of the specific reporting provisions have been enhanced compared to the previously existing transparency arrangements, particularly for developing countries.

3. The overarching objective of this ETF is to ensure an easy and clear understanding of the actions of an individual country for climate change mitigation and adaptation. This objective is also in line with Article 2 of the United Nations Framework Convention on Climate Change Convention (UNFCCC)[4][4]. In simple, transparency framework of the Paris Agreement, wants to ensure clarity, as well as track the progress of each Party?s

individual NDC towards their set goal for climate change mitigation and adaptation. Such actions may cover the good practices, priorities, needs, and gaps to ensure global stocktake under Article 14 of the Paris Agreement[5][5]. Most importantly, the ETF has built-in flexibility to consider different capacities of the countries around the world and builds upon collective experience.

1.2 National aspiration of Tajikistan towards global efforts on climate change

4. The Republic of Tajikistan is actively working with the global community to combat global climate change. The country ratified the UNFCCC on January 7, 1998[6][6]. On 29 December 2008, Tajikistan ratified the Kyoto Protocol to the UNFCCC. In 2016 (22 April), the country signed the Paris Agreement to the UNFCCC and ratified it in 2017 (20 March)[7][7]. The country also committed 66,000 hectares under the Bonn Challenge. The Bonn Challenge is a global goal to bring 150 million hectares of degraded and deforested landscapes into restoration by 2020 and 350 million hectares by 2030.[8][8]

5. The country has also submitted the Intended Nationally Determined Contributions (INDC) to the UNFCCC Secretariat on 30 September 2015. No further revisions were undertaken and the same document was endorsed and submitted as the first NDC on 22 March 2017[9][9]. In the first NDC, the country has mentioned a flexible target, not exceeding 80-90% of the 1990 level by 2030, which amounts to 1.7-2.2 tons in CO_{2eq} per capita. The country has no obligations as a non-Annex I party to reduce its GHG emission level. Yet, the country is dedicated to reducing the national GHG footprint. The country also submitted an updated NDC on 12 October 2021[10][10].

6. The above-mentioned national aspirations towards stabilizing the global GHG concentration are reflected through continuous reporting to the UNFCCC on sources of GHG emission, and national climate change mitigation and adaptation activities. In 2008, the Government appointed a special committee responsible for environmental protection, which has positively contributed to raising the profile of environmental issues in its

political agenda. Important legislation and recent policy developments have built the foundation for Tajikistan?s efforts to integrate low-carbon and climate-resilient options into its sustainable development agenda. Notably, the National Development Strategy until 2030 sets the country?s strategic priorities for the mid-term and stipulates the goal to intensify climate change-related research and increase adaptation activities as a means to strengthen Tajikistan?s development path. The most relevant policy addressing climate change is the country?s National Action Plan for Climate Change Mitigation which came into effect in 2003. Though the action plan expired in 2015, it served as a strategic document for climate change issues. It identified the priorities of reducing greenhouse gas (GHG) emissions and adapting to climate change. There is a plan to update the National Action Plan to reflect new developments and knowledge as well as global agreements and commitments to the UNFCCC[11][11].

7. In October 2019, the Government of Tajikistan launched the National Strategy of adaptation to climate change of the Republic of Tajikistan for the period till 2030 (NSAIK)[12][12], which considers the impacts of climate change at national and local levels and determines four sectors which are both sensitive to climate and priority for development: power, water resources, transport and agricultural industry. Also, the Strategy distinguishes seven intersectoral areas: health care, education, gender, youth, migration, environment and emergency situations. As part of the country?s commitment toward global efforts on climate change, Tajikistan has submitted First (2002), Second (2008), and Third (2014) National Communications to the United Nations Framework Convention on Climate Change (UNFCCC)[13][13].

1.3 Root causes and barriers to be addressed

8. The barriers and gaps related to MRV and transparency identified in the FNC[14][14] are:

o Capacity building needs focusing on institutional linkages establishment, monitoring and verification, and information and data acquisition.
o Lack of local skills and expertise and the strengthening of institutions' capacities related to climate change-related activities.

9. The barriers and gaps related to MRV and transparency identified in the SNC[15][15] are:

o Lack of data archiving system.

o   There is a growing amount of data from the national census and assessments, which need to be digitized and geo-referenced.
o   Lack of education, training, and public awareness; and
o   Absence of GHG emission database management systems focusing on data collection, harmonization, archiving, updating, and utilizing the data.

10. The barriers and gaps related to MRV and transparency identified in the TNC[16] are:

o   Ensuring financial transparency and effectiveness of climate change financing.
o   Strengthened organization of monitoring of climate change mitigation and adaptation actions, and use of local expertise.
o   Enhancing access to data, and reducing the duplication of activities.
o   Resource intensive projects focused on information and technical capacity development, as well as institutional development.

11. The barriers and gaps related to MRV and transparency identified in the updated NDC[17] are:

o   Systemic capacity development at the national, sectoral, regional and local levels is required to improve knowledge and strengthen capacities on the impacts of climate change and the respective mitigation and adaptation measures jointly with promoting strong cooperation with the civil society, academia and the private sector.
o   Defining a system of target indicators, including gender-sensitive indicators, to achieve national, sectoral and regional adaptation goals and approving methodological recommendations for assessing climate risks.
o   Improvement of educational and methodological materials.
o   Creation of a platform to share experience on new technologies at national and regional levels.
o   Monitoring and evaluation of the introduction of new technologies.

12. The barriers and gaps identified in the first BUR[18] are as follows:

o   Lack of capacity of the national experts, in particular, of the Climate Change Research Center of the Agency for Hydrometeorology of the RT in accordance with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and on the software.
o   Lack of experts on the application of international experience and use of satellite data (GIS) to reduce uncertainties in estimations of emissions/ removals in forestry and other land use.
o   Lack of capacity building and technical support for the experts of the Statistics Agency, which are responsible for the development of the energy balance, collection and submission of data on fuel consumption in aviation, road transport and data in the waste sector.

o Lack of capacity focusing on the development and approval of the special forms of statistical accounting and reporting of all missing data necessary for GHG inventory.
o Lack of familiarity with methods of identifying key sources and sinks of GHG in terms of volumes and trends of emissions.
o Lack of technical experts on possible methods for reducing GHG emissions for their subsequent use by the decision-makers at the country level using the international experience.
o Lack of institutional capacity aimed at coordination of all activities on (i) the development of the GHG national inventories, (ii) the monitoring and reporting on the policy, activities and projects on climate change mitigation, and adaptation, (iii) the methodological issues.

These root causes and barriers are further elaborated in paragraph 66.

(2)   BASELINE SCENARIO

2.1 Country Context

13. The Republic of Tajikistan is a small landlocked country with an area of 142,600 sq. km located in the southern mountainous part of Central Asia between 36?40'N and 41?05' and 67?31'E and 75?14'E. The country stretches for 700 km from west to east and for 350 km from north to south. Tajikistan has borders with Uzbekistan and Kyrgyzstan in the north and west, in the south with Afghanistan and in the east with China[19][19]. The country is a mountainous country, and mountains occupy over 93% of the country's territory, while around 50% of the territory is situated at an altitude above 3,000 m[20][20]. These land areas of the country are not suitable for agriculture practices because of extreme climatic conditions, and unfavorable landscapes with predominant rocks, glaciers and highlands. Besides, the country is prone to high seismic risks because of its geographical location, while most of the mountainous districts, and arid and semi-arid areas are vulnerable to hydrometeorological events[21][21].

14. Aridity, an abundance of heat, and significant variability of climatic elements are the characteristics for Tajikistan's climate. The annual mean temperature of the country varies between +17?C in hot southern districts to -6?C and lower in the Pamir highlands. The highest temperature is observed in July and the lowest in January. The difference between the highest and lowest temperature exceeds 100?? in different parts of the country[22][22]. The annual precipitation averages from 70 to 160 mm in the lowland hot

deserts of Northern Tajikistan and the cold mountain deserts of East Pamir. On the other hand, the annual precipitation can exceed 1,800 mm in Central Tajikistan. In terms of precipitation seasonal distribution, around 75% of annual precipitation is observed during the cold season. The majority of precipitation is geographically concentrated in mountain districts because of humid air masses from the west[23][23].

15. The country is divided into four administrative divisions. These are Sughd, Khatlon, the autonomous province of Gorno-Badakhshan (known as GBAO), and the Region of Republican Subordination (formerly known as Karotegin Province). Each region is divided into several districts, which are again subdivided into jamoats (village-level self-governing units) and then villages. The country has 17 towns, 62 districts, 57 settlements, and 369 Jamoats[24][24]. As of 2020, the total population of the country is 9.538 million, of which 74% live in rural areas[25][25]. The population as per the administrative divisions is presented in Table 1.

Table 1: Population in TAJIKISTAN.

Division	Capital	Population (2019)
Sughd	Khujand	2,658,400
Region of Republican Subordination	Dushanbe	2,122,000
Khatlon	Bokhtar?	3,274,900
Gorno-Badakhshan	Khorugh	226,900
Dushanbe	Dushanbe	846,400

Source: Agency on statistics[26][26]

16. The GDP of the country in 2020 was 8.194 billion USD, of which agriculture contributed around 23.3%, industry 22.8%, and services 53.9%. Tajikistan's active labor force was estimated at 3.4 million, of whom 64% were employed in agriculture, 24% in services,

and 10% in industry and construction [27][27]. The country?s economic activities are dominated by the production of aluminium and cotton (major export commodities), and remittances from Tajik nationals working abroad (around 28% of the GDP). The main export products of the country are aluminium, light industrial goods, cotton, agricultural goods, electrical energy, semi-precious stones and other mountain products. The key imported products are energy products, timber, metals, pharmaceuticals, food and household goods[28][28]. The country has rich deposits of gold, silver, and antimony. The largest silver and gold mining is located in Sughd Province. The country also produces strontium, salt, lead, zinc, fluorspar, and mercury. Around 30,000 tons of coal are mined annually in the country[29][29]. The leading industries are the non-ferrous metal industry (35-40%), the food industry (20-27%), and others. The major chemical industries are: mineral fertilizer, caustic soda, paints, and plastic; and major food industries are: dry fruits, processed foods, fruit juices, meat and dairy products, and sparkling and mineral water. Also, textiles production, garments and carpet weaving have also considerable contributions to the country?s industrial production[30][30]. Similar to other countries around the world, the COVID-19 pandemic significantly impacted the national economy, with a 4.2% reduction in real GDP growth during the first 9 months of 2020, compared to a 7.2% growth during the same time period in the previous year[31][31].

17. The agricultural sector provides 64% of the country?s employment. The agriculture sector comprises two broad farming systems, such as (i) upland areas - characterized by wheat, potatoes and horticulture along with rainfed pasture, and (ii) irrigated cotton and wheat dominate in lowlands [32][32]. The two main cash crops in Tajikistan are Cotton and wheat. The cultivation of these two crops covers nearly 70% of the cropped area (30% under cotton, 36% under wheat, 9% under other cereals)[33][33]. Cotton fiber is the leading agricultural export commodity of the country contributing 16% of total exports, second after aluminium (60% of the exports)[34][34]. Rainfed areas of the southern plains of Khatlon province are used for Wheat and barley cultivation. The main rice producer in Tajikistan is Sughd Province with 44% of the harvested rice produced by Zeravshan and Fergana valleys. Around 36% is produced by heavily irrigated Khatlon lowlands and the remaining 20% in Gissar Valley through irrigation from Kofarnihon River. Apricots, pears, plums, apples, cherries, pomegranates, figs, and nuts are also produced in the north of the country. The livestock sector of the country covers chickens, cattle, sheep, goats, and horses (in descending order of importance). Beef, mutton, and poultry are the major

meat products with milk cheese and wool production. Silk is a comparatively minor industry in the country [35][35].

18. Tajikistan's pasture grounds cover a total area of 80% of the agricultural land, which is subject to erosion. The largest pasture region is the Khatlon Region and the DRS with an area coverage of 31% and 28%, respectively. Around 89% of summer pastures and 97% of winter pastures are exposed to moderate and high erosion resulting in desertification and degradation of the pastures[36][36].

19. The forest area of the country is around 412,000 ha, which is around 3% of the land area of the country. Around 150,000 ha of forests consists of evergreen, low productive and diffused Juniper forests with species like *Juniperus turkestanica, J. Seravcshanica, J. Semiglobosa* spread between1,500-3,500 meter above MSL. Broad-leaved forests cover approximately 52,000 ha at an altitude of 1,200-2,500 MSL, and stretch along the southern hillslopes of the Gissar Range, the Darvaz and upstream of Yakhsu and Kizilsu rivers. Shrub forests cover around 15,000 ha growing on the mountain plateau at an altitude of 2,000-3,500 MSL, and consist of willows, birches, poplar, seabuckthorn, and currant trees (Salix turanica, Hippophae rhamnoides, Populus tadshicistanica, Betula tadshicistanica). The country has a diverse range of flora and fauna consisting of 5,000 species of higher plants, and more than 3,000 species of lower plants, including endemic and rare species. There are 84 mammal species, 385 bird species, 47 reptiles, 52 fish species, 2 amphibian species, and 10,000 zoophyte species so far reported in the country[37][37].[38][38].

20. The main sources of water resources in Tajikistan are the glacial meltwater, frost and seasonal snow cover in the Pamir mountains. The current glacier coverage is 7,000 km, which is around 4.8% of the land area of the country compared to 6% during the 20th century. More than 1,000 lakes with a combined volume of water reserves of 46 km3 play a significant role in the country. The Salt lakes in the highland deserts of the Pamir cover half of that reserve[39][39]. Water provided by the above-mentioned sources is used for agricultural water supplies and to generate hydroelectricity. The water resources of the country can cause considerable damage to the rural and mountainous regions of the country because of mudflows and floods, and shortage of water resources due to climate change-induced natural disasters. The country is at the risks of droughts due to reduced glacier runoff, consequently depredating the aquatic ecosystems, economy and population[40][40].

21. Almost all energy needs of the country are provided by hydropower. Tajikistan is the world's leader in terms of its hydro energy potential. The total potential is around 527 billion KWh with an average production of 16.5 billion KWh. The country has oil (more

than 100 million tonnes), gas (more than 80 billion m3) and coal (4 billion tonnes). Electricity from coal contributes less than 2% of the national electricity generation. The renewable energy potential represents solar (25 billion KWh), Wind (25 billion KWh), Geothermal (25 billion KWh), and Biomass (2 billion KWh), which is still not utilized properly.[41]

22. Automobile transport and infrastructure play a leading role in the country?s economic development and livelihood activities. More than 90% of freight and passenger transport within Tajikistan is through road transport because the railways are not well developed due to mountainous terrain. The length of roads in the country is more than 13,500 km and the railroad is around 500 km. There are 4 international airports in the country. City public transport is underdeveloped. An increase in private city transport (microbuses) has on one hand partially reduced the problem of passenger traffic in large cities, whilst on the other hand, coupled with the increase of private vehicles, causes traffic jams.[42]

23. Approximately, 1-1.5 million tons of waste are generated per year from industrial activities in the country. There are more than 100 domestic and industrial waste (including toxic chemicals) disposal sites in the country covering 1.4 thousand ha area.[43] The average waste generation per capita is 0.89 kg/day and 1.7-2 million tons of municipal solid waste (MSW) from residential households is produced. The current waste management system in Tajikistan is mostly relying on landfilling. It faces several problems, such as a lack of landfill space, and a small amount of recycling and composting measures.[44] According to the Environmental Protection Committee, approximately 40% of the national population is covered with waste collection services. Municipal waste management services are provided in Tajikistan by the National state enterprises, that are part of the State Unitary Enterprise (SUE) and Khojagii Manziliyu Kommunali (KMK). Public and private enterprises subjected to local administrations of state executive power are also involved with waste management services. Nationwide KMK includes 62 communal services enterprises responsible for waste collection and maintenance[45].

2.2 Greenhouse gas emissions reported

24. The First National Communication (FNC) of Tajikistan was submitted to the UNFCCC on 8 October 2002, Second National Communication (SNC) was on 31 December 2008, and Third National Communication (SNC) was on 29 Dec 2014[46]. The FNC, SNC,

and TNC were prepared by the State Agency for Hydrometeorology in the country with the funding from Global Environmental Facility (GEF). The country submitted First Biennial Report (BUR) on 18 Jul 2019[47][47]. The country is in the process of developing the Fourth National Communication and Second Biennial Report.

25. Revised 1996 IPCC Guidelines for the National Greenhouse Gas Inventories were used for the FNC, supported by the IPCC v 1.1 software to follow the methodologies for GHG calculations. The FNC includes 5 sources and removals of GHG by sinks (Energy, Agriculture, Industrial Processes, LULUCF and Wastes) for the time period 1990 to 1998. IPCC default emission factors (Tier 1) were used. The GHG emission reported under FNC is presented in Figure 1.
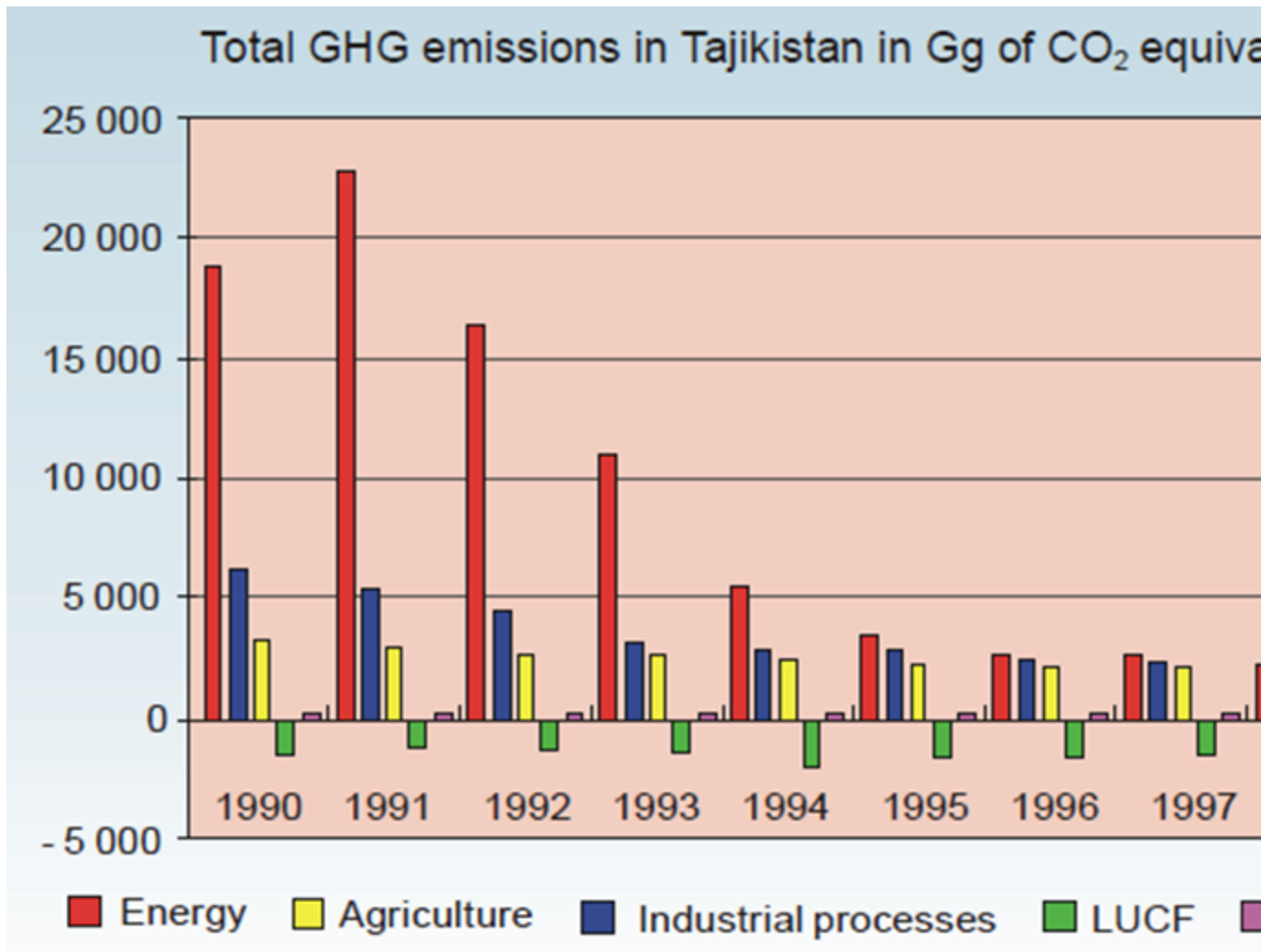
Figure 1: GHG emissions reported in FNC of Tajikistan over the period of 1990 to 1998 (source: FNC[48][48]).

26. The SNC was prepared based on the IPCC 1996 and IPCC 2006 guideline using the IPCC v 1.3 software. The SNC includes 5 sources and removals of GHG by sinks for the time period 1999 to 2003. It also re-checked the data used for the GHG emissions are estimation from 1990 to 1998. The GHG emission was estimated using IPCC default emission factors (Tier 1). The GHG emission reported under SNC is presented in Figure 2.
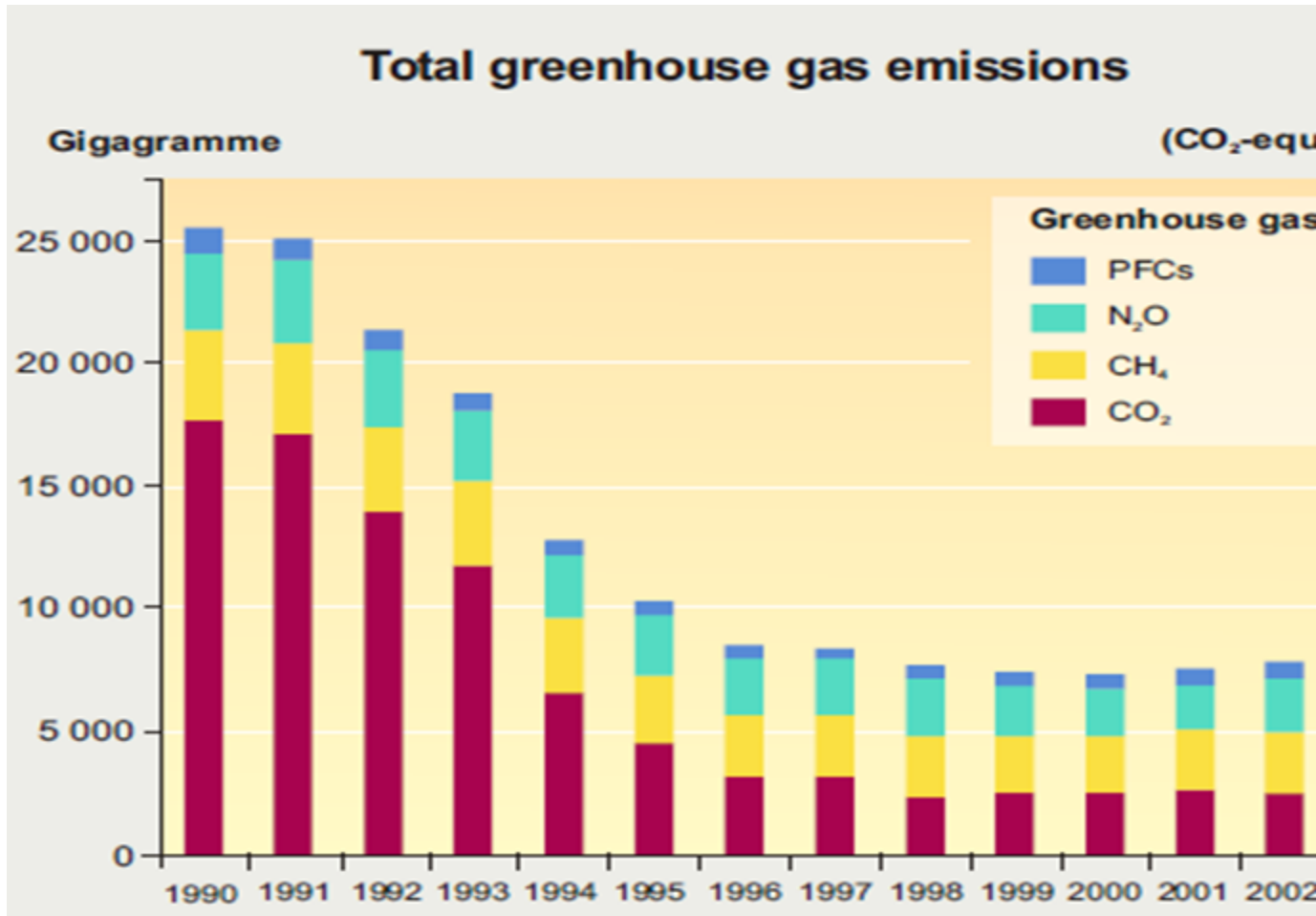
Total greenhouse gas emissions

Figure 2: **GHG EMISSIONS REPORTED IN SNC OF TAJIKISTAN OVER THE PERIOD OF 1990 TO 2003 (SOURCE: SNC[49][49]).**

27. The TNC was prepared based on the IPCC 1996 and IPCC 2006 guideline using the IPCC v 1.3 software. The TNC includes 5 sources and removals of GHG by sinks for the time period 2004-2010. TNC also revisited and cross checked the estimation of GHG emissions under SNC for the period of 1999-2003. GHG emission estimated using IPCC default emission factors (Tier 1). The GHG emission reported under TNC is presented in Figure 3.
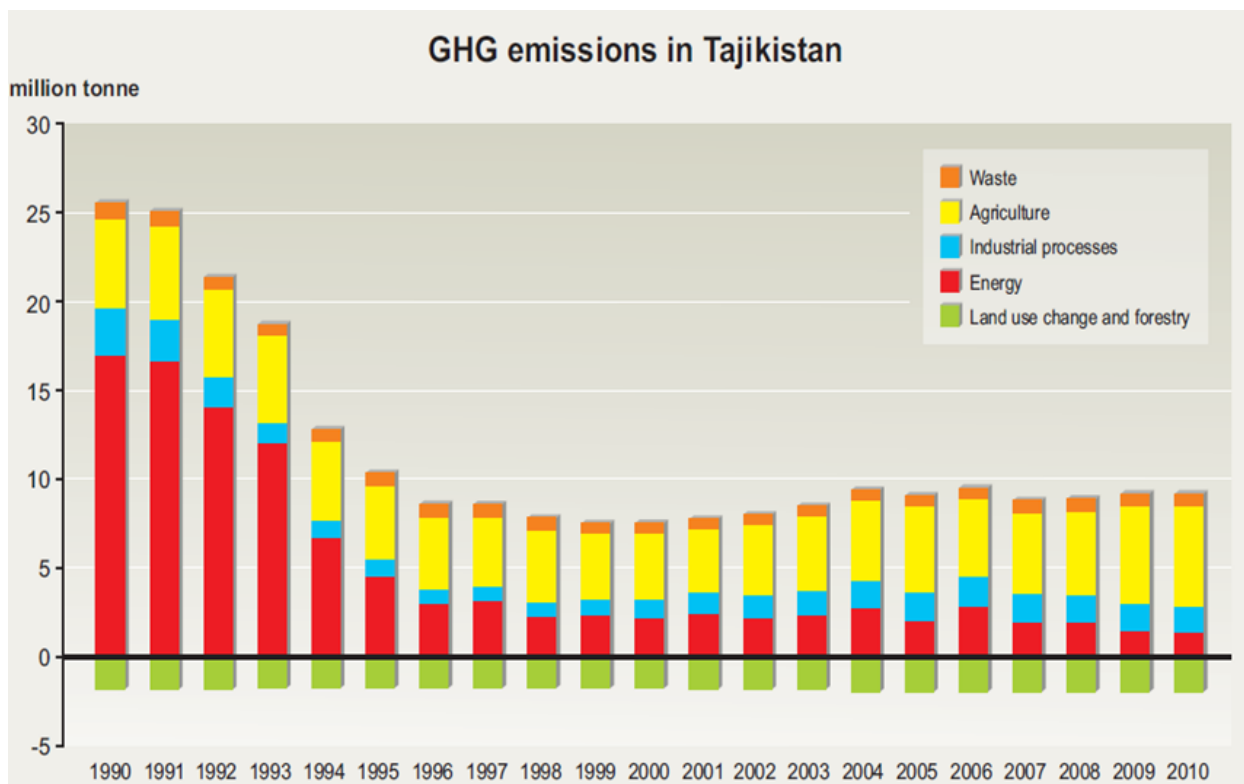
Figure 3: GHG EMISSIONS REPORTED IN SNC OF TAJIKISTAN OVER THE PERIOD OF 1990 TO 2010 (SOURCE: TNC[50][50]).

28. As shown in Figure 4, over the year 1990 to 2010, the composition of emissions by different sectors has changed noticeably. The energy sector was the major contributor (67%) to national GHG emissions in 1990, followed by the agriculture (20%), industry (10%) and waste (3%) sectors. While, by 2010, all sectors showed a general trend of reduction in GHG emissions except agriculture sector. Agriculture sector became the leading contributor to national GHG emissions with 60% contribution in 2010, while energy sector contributed 15%.

29. The first BUR reported the GHG inventory covering the period from 2004 to 2014 based on the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, and IPCC V2.54 software was used. It also followed IPCC 2004 Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, and IPCC 2003 Good Practice Guidance for Land Use, Land-Use Change and Forestry. It used GWP values suggested by IPCC Second Assessment Report. Emission estimates were based on Tier 1 and Tier 2 methods. Tier 2 method was used to estimate the emissions in the sector of waste: CH_4 emissions as a result of solid waste disposal. Other emissions were estimated using the Tier 1 method with the default values of the 2006 IPCC Guidelines and based on country activity data. GHG emissions reported under the first BUR are presented in Figure 4. As shown in the figure 4, GHG emission contribution from the agriculture sector to national emissions increased from 33% to 50%, while it reduced for the energy sector

from 42% to 28% over the period of 2004 to 2014. On the other hand, the contribution from the industrial and waste sectors also increased over the same period.
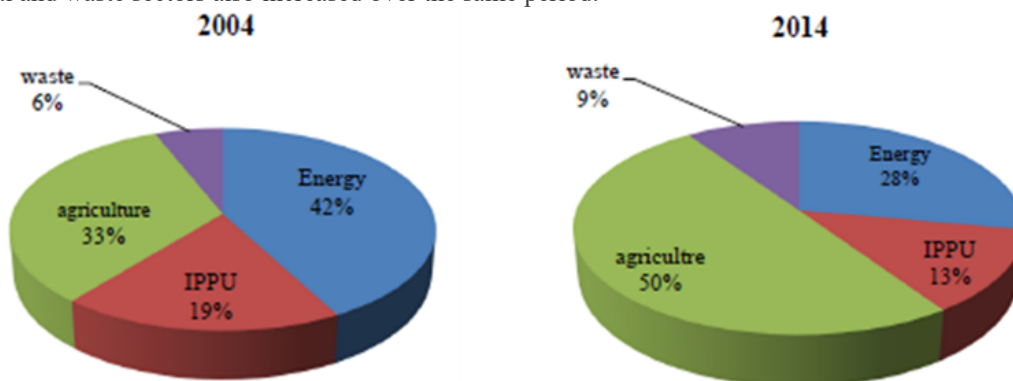
GHG emission trends for 2004-2014 (Gg CO$_{2eq.}$)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
GHG with LULUCF	8 108,45	7 921,95	8 718,21	8 485,09	8 015,45	7 235,25	6 586,18	7 311,50	6 844,49	7 303,55	7 554,42
GHG without LULUCF	9 568,87	9 382,37	10 209,81	9 981,33	9 517,18	8 733,15	8 097,97	8 847,43	8 394,98	8 867,53	9 131,01

Figure 4: GHG EMISSIONS REPORTED IN FIRST BUR OF TAJIKISTAN OVER THE PERIOD OF 2004 TO 2014 (SOURCE: FIRST BUR OF TAJIKISTAN[51][51]).

2.3 Climate change Vulnerability

30. Annual mean temperature of Tajikistan is projected to rise between 1.3?C and 6.3?C by 2080 compared to the 1986-2005 level. Under the high emissions scenario, RCP8.5 (Representative Concentration Pathways), annual temperatures will increase by approximately 1.7?C in 2030, 3.1?C in 2050, and 5.4?C in 2080. As a consequence of increasing temperatures, fewer frost days is expected to observe. Frost days are expected to decrease to approximately 212 days in 2030, 200 days in 2050, and 170 days in 2080 under the high emissions scenario RCP8.5. [52][52]

31. The updated NDC reported average annual temperature in the country is expected to increase between 0.2 ?C and 0.4 ?C, by 2030. Similarly, the average annual rainfall will decrease by 5% by 2050[53][53]. Winter precipitation is expected to increase compared to spring precipitation, which will remain at the current level. However, heavy rainfall events (>20 mm) will increase during the spring months.[54][54] The heat days above 40?C are expected to increase by 12.5 days by 2080 compared to the 1986-2005 period.[55][55] There was a considerable relative increase in

precipitation during the summers of 1976-2012. This did not increase the ground moisture and surface flow significantly because the volume of the precipitation in summer is small, compared to high temperatures leading to high surface evaporation rates[56][56].

32. Agriculture is increasingly being challenged in Tajikistan from a change in the hydro-meteorological regime due to climate change. 68% of the permanent cropland in Tajikistan depends on irrigation. The reduction in river flow from accelerated glacier melting can negatively impact the country?s crop production, such as irrigation dependent crops, specifically cotton. Negative consequences from frequent and intense heat waves will endanger potential positive results of agricultural productivity from an increase in the growing season length (GSL). Under the high emissions scenario, the projected reduction in frost days will reduce the risk of frost damage to crops and livestock, but is expected to increase the pests and diseases risk[57][57].

33. Climate change will likely affect the infrastructure of Tajikistan. Changes in temperature and extreme heat can damage the Roads, while changes in river flow levels can adversely affect hydropower generation. Mudflows, droughts, high temperatures, and strong winds can also the infrastructure like hydroelectricity plans, roads, bridges, etc. The country intends to accelerate industrialization based on an increase of installed electricity from 5,400 MW to 10,000 MW by 2030. 90% of such increase will be through hydropower plants. Therefore, the energy security of Tajikistan is vulnerable to climatic and hydrologic variability from climate change-induced events like rising temperatures, droughts, and storms[58][58].

34. The forest resources of the country are likely to be highly impacted by climate change particularly non-timber forest products such as walnuts, pistachio fruits and berries. The forest productivity will be negatively affected by changes in precipitation and temperature changes related to the increased natural hazard risk of a forest fire. These trends will also cause a change in the regional distribution of forests, narrowing production zones for alpine species, and increasing the incidence of pests and diseases[59][59].

35. Climate-induced extreme weather events resulted in estimated annual losses of 600 million USD, which is 4.8% of the country?s GDP in 2010. On the other hand, the average annual losses are estimated at 7.4% of GDP over the period 1996 to 2015. By 2100 such loss from environmental degradation and climate change will reduce the per capita GDP by up to 15%.[60][60]

2.4 Nationally Determined Contribution (NDC)

36. The NDC of Tajikistan portrays the transition pathways of GHG emission mitigation and enhancement of climate resiliency. The country submitted the first NDC on 22 March 2017, and an updated NDC was submitted on 12 October 2021[61][61]. The NDC describes the enhanced actions and necessary enabling environment for ambitious goals of climate change mitigation and adaptation in line with the global community to keep the global average temperature increase below 2_0C.

A brief overview of the First NDC and Updated NDC is presented in Table 2.

Table 2:   An overview of the First and Updated NDC of Tajikistan.

Issues	First NDC[62][62]	Updated NDC[63][63]
Reference year	1990	1990
Timeframe	2021-2030	2021-2030 (second NDC expected to submit in 2025)
IPCC Sectors covered	Power industry and water resources, Industry and construction, land use, agriculture and gardening and grazing, Forestry and biodiversity, Transportation and infrastructure.	Energy, Industrial processes and Product Use (IPPU); AFOLU, Waste
Greenhouse gases	Carbon dioxide ($??_2$), Methane ($??_4$), Nitrous oxide (N_2O).	Carbon dioxide ($??_2$), Methane ($??_4$), Nitrous oxide (N_2O).
Unconditional mitigation target	Reducing national GHG emissions to 80-90% of 1990 level by 2030. This is equivalent to 1.7-2.2 t CO_{2eq} per capita.	Emissions cap of 60 to 70% of existing GHG emissions in 1990 level by 2030. This represents 21.32 to 24.87 Mt CO_{2eq} by 2030, which is equivalent to 1.9 to 2.2 t CO_{2eq} per capita.
Conditional mitigation target	Reducing national GHG emissions to 65-75% of 1990 level by 2030. This is equivalent to 1.2-1.7 t CO_{2eq} per capita.	50 to 60% compared to the 1990 level by 2030. This represents 17.76 to 21.32 Mt CO_{2eq} by 2030, equivalent to 1.5-1.9 t CO_{2eq} per capita.

Issues	First NDC[62]	Updated NDC[63]
Key mitigation actions	-Systematic reforestation in accordance with the adopted State programmes. -Investment projects and national programmes in the sphere of the power industry, transport, agriculture and forestry and water resources management. -Promotion and diversification of renewable energy sources and reduction of energy losses. - Modernization, and introduction of new technologies for the targeted sectors.	***Energy*** -Promoting water-energy-land interaction with renewable energy sources. - Modernization of existing Hydroelectric Power Stations and construction of new HPPs. - Improving the energy efficiency in the industry by means of more efficient equipment, production technology improvements, reduction of heat losses and/or increased utilization of waste heat, and resource efficiency. - Modernization of a thermal power plant through a switch from a GHG-intensive fuel to a less GHG-intensive fuel. - Use of architectural designs of efficient houses and buildings, which comprise a set of measures that goes from energy-efficient appliances and equipment. - Retrofitting of existing buildings: architectural or construction changes that reduce energy consumption. -Improving energy efficiency in the utilities by installing more efficient lighting or equipment, improving energy consumption, reducing losses or improving resource efficiency. -Reconstruction of district heating and cooling systems. -Decrease in heat losses and/or increase in

Issues	First NDC[62][62]	Updated NDC[63][63]
Key Adaptation actions	-Risk reduction of natural disasters. - Reduction of the adverse impacts of the dangerous weather events and climate change through modernization of the hydrometeorological services and improvement of the process of serving the needs of the economy and citizens. -Implementation of the Medium-Term Development Programme of the Republic of Tajikistan for the period 2016-2020. - Agriculture Reform Programme of the Republic of Tajikistan for 2012-2020. - State Programme for Study and Preservation of Glaciers of the Republic of Tajikistan for 2010-2030. - State Development Programme of Geology Industry of the Republic of Tajikistan for 2012-2020. - National Strategy for Disaster Risk Management of the Republic of Tajikistan for 2009-2015. - National Plan for Emergency Preparedness and Response of the Republic of Tajikistan and other sectoral programmes. -Promotion of adaptation of globally significant biological species and natural ecosystems to climate change. - Monitoring and preservation of the glaciers and water resources in the runoff formation zones under the conditions of climate warming. - Improvement of occupational safety, life-sustaining activity and health of the population, maternity and childhood protection in the context of climate warming. - Full-scale integration of the climate resilience and adaptation measures into the planning and development of the green infrastructure for: Agriculture, irrigation and water	***Energy*** -Development of networks of small hydroelectric power plants and widespread development of other renewable energy sources in the remote mountainous and rural regions of the country. -Strengthening hydropower potential and increasing the reliability factor considering the effects of climate change (increase in maximum floods or decrease in runoff). ***Water resources*** -Increasing the efficiency of water use, recycling, processing and demand management. - stricter regulation of wastewater treatment and discharge, providing backup systems for storage water resources management. - Rehabilitation of irrigation systems and drainages to improve reclamation of saline lands and wetlands. - Use of effective irrigation methods (drip irrigation). ***Agriculture*** -Introduction of "green" technologies and "green" infrastructure. - Improvement of livestock breeding. - Development of agroforestry and conservation agriculture. - Crop rotation, intercropping and crop diversity. - Improved management of irrigation and drainage systems. ***Forestry*** -Reforestation/afforestation, natural and active/assisted regeneration, forest protection from cutting, grazing, fire, pests etc., improved and sustainable management of existing forest, and improved pasture productivity. ***Transport***

2.5 **Existing institutional arrangements on national climate change policies and relevant ministries**

37. All key government agencies and program implementing national agencies of all sectors including sectors related to the environment report to the Executive Office of the President (EOP) of the Republic of Tajikistan. The concerned departments of the EOP, monitor and coordinate different ministries and agencies to implement ongoing policies and measures. They also provide information to support the public officials for the adoption of the national programs and action plans. The Parliament of Tajikistan plays a key role in the development and improvement of legislation in line with the international agreements, including those related to the environment and climate change[64][64],[65][65].

38. Some of the key organizations involved with the institutional framework related to environment and climate change issues based on the FNC, SNC, TNC and first BUR in the country are (i) Committee for Environmental Protection under the Government of the Republic of Tajikistan, (ii) Agency for Hydrometeorology, (iii) Ministry of Economic Development and Trade, (iv) Ministry of Energy and Water Resources, (v) Ministry of Agriculture, (vi) Agency for Land Reclamation and Irrigation, (vii) Ministry of Health, (viii) Ministry of Transport, (ix) Committee for Emergency Situations and Civil Defence, (x) Committee on Land Use and Geodesy, (xi) State Committee on Investments and State Property Management, (xii) Interagency Committee and Academy of Science. A brief description of key agencies related to the climate change issues in the country is presented below.

39. Committee for Environmental Protection under the Government of the Republic of Tajikistan (CEP). It is the central national entity for control of the use of natural resources, and the protection of land, minerals, forests, water and other resources. This entity also coordinates activities on environmental protection among the government agencies. Decisions provided by the CEP on environmental protection need to be binding for all legal entities and individuals. CEP is the policy-making organization for climate change and oversees the work of the Agency for Hydrometeorology. Professional development of the staff focusing on the environment and climate change is also carried out by CEP for the integrated implementation of the national legislation related to environmental protection.

40. Agency for Hydrometeorology (Hydromet). Hydromet of the CEP under the Government of the Republic of Tajikistan is the national agency overseeing the activities related to climate change in the country. UNFCCC?s national focal point in the country is the Director of Hydromet. Preparation of the national communications and coordination with other ministries and agencies is done by Hydromet. Besides, it coordinates the activities of the Climate Change Research Center established in 2004 to conduct the climate change research activities focusing on adaptation and mitigation.

41. Secretariat of the Pilot Program Climate Change Resilience (PPCR). It was established in 2011 to carry out the day-to-day coordination of the PPCR activities. It serves as a contact group for the stakeholders, as well as a technical group, which was established to provide technical expertise upon request. The guidelines for the PPCR Focal Point are implemented through the interagency committee, led by the Deputy Prime Minister of the country.

42. Ministry of Energy and Water Resources (MoEWR). It is the leading executive body of the country to implement state policies and regulations focusing on the fuel and energy sector, water resource management, and the development of renewable energy sources. This national agency is the National Designated Authority for clean development mechanism under the Kyoto Protocol of the UNFCCC. Before November 2013, the ministry of energy and the ministry of industry were responsible for that.

43. Ministry of Economic Development and Trade (MoEDT). It is the leading national agency for oversight the economic planning and forecasting. The key tasks are the development and implementation of the economic development programs, poverty reduction and implementation of sustainable development strategies.

44. Ministry of Agriculture (MoA). It is the leading national agency for developing and coordinating national policy, plans and programs related to agriculture. MoA also supervises the activities of the Academy of agricultural science, the center of agrarian science in Tajikistan, and has a close connection with the Tajik Agrarian University.

45. Ministry of Industry and New Technologies (MoINT). It is a national entity focusing on developing and implementing country policies, programs and action plans related to the industrial sector. It also develops and implements inter-sectoral research and technical programs and innovative projects focusing on modern energy-saving technologies and environmentally friendly production to contribute toward climate change mitigation initiatives in the country. It also reviews the industrial companies for ensuring technological, environmental, and other government compliance.

46. Ministry of Education and Science (MoES). It is the central leading entity related to national education and science policy, regulatory framework, teaching, curriculum development, scientific and technical activities, guardianship and trusteeship, support and social protection of students, and educational and scientific institutions. It also involves with development and implementation of environmental programs at schools and universities.

47. Forestry Agency of the Republic of Tajikistan. It is the leading national agency of the country related to the management of forests, forestry activities for climate change programs and projects, forest resources, hunting and hunting facilities, associated policy-making and implementation, and legal regulation on flora and fauna. It also deals with the protection of natural parks and operational management.

48. Statistics Agency under the President of the Republic of Tajikistan. It is a government body in the country to formulates and conducts statistical and economic policy and analysis. The agency is involved with the collection and dissemination of statistics focusing on national social, economic and environmental processes, and also regarding the administrative and territorial units and settlements.

49. State Committee for Land Management and Geodesy of the Republic of Tajikistan. It is a leading national agency focusing on land use, land reforms and land records. Its activities are related to land use, inventories and land use rights registration, land tax determination, control of land use and forest land.

The existing institutional framework focusing on climate change issues is presented in Table 3.

Table 3: institutional framework focusing on climate change issues.

Name of the organization	Key roles related to climate change issues in the country
Department on environment protection and emergency situations under the Executive Office of the President of the Republic of Tajikistan.	o Climate change-related programs in the country receive political support from this entity, and also environmental legislation compliance at all sectoral levels is ensured by it. o This organization review and approve national development strategies and action plans, such as the National Action Plan for Climate Change Mitigation that came into effect in 2003, and the ongoing development of the National Strategy and Action Plan for climate change adaptation.
Committee for environmental protection under the Government of the Republic of Tajikistan (CEP)	o CEP?s Chair acts as a focal point for CAMP4ASB (Climate Change Adaptation and Mitigation Program for Aral Sea Basin) and coordinates information exchange among various climate change stakeholders. o It also implements climate change-related projects. o It also ensures smooth operation of the process related to national communication preparation, and the Biennial Report.
Agency for Hydrometeorology (Hydromet) of the CEP	o Its activities cover all aspects of climate change mitigation and adaptation. o It coordinates the preparation of national communication preparation and the Biennial Report. o Strengthen dialogue, share information and facilitate cooperation among all relevant stakeholders working on the climate change-related issues in the country. o Monitor temperature, precipitation, extreme weather conditions, glaciers and floods caused by the outburst of glacier lakes and forecasts.
Ministry of economic development and trade (MEDT)	o It is part of the co-executive bodies for the National Action Plan for Climate Change Mitigation, and for the ongoing preparation of the National Strategy and Action Plan for Climate Change Adaptation. o It is also involved in different Project Steering Committee (PSC) and sectoral working groups on sustainable strategies, plans and budgets. o It provides macroeconomic data and long-term development forecasts for national contexts.

Name of the organization	Key roles related to climate change issues in the country
Ministry of Agriculture (MA)	o It involves the development of the GHG inventory of the AFOLU section. o It contributes to the vulnerability and adaptation assessment of the agriculture sector. o It also involves projects related to climate change, information exchange, and coordination of sectoral activities on climate change.
Ministry of energy and water resources (MoEWR)	o It contributes to vulnerability and adaptation assessment and mitigation of climate change impacts. o It was involved the development of the GHG inventory of the energy section of national communications and BURs. o It implements a number of projects related to water and climate change issues in the country.
Ministry of health and social protection (MoHSP)	o It contributes toward vulnerability and adaptation assessment, focusing on the impact of climate change on population health.
Ministry of education and science (MoES)	o It involved awareness-raising activities and education on climate change issues. o It has the authority to develop and implement projects on environmental education.
Ministry of finance	o It oversees investment climate projects, especially those for loans and credits. o Implement fiscal policy. o Formulate the national annual budget and controls the execution of the budget.
Ministry of industry and new technologies (MoINT)	o It involves the data and estimates of GHG emissions for the industrial processes. o It involves the development of strategies and planning for reducing GHG emissions in the industrial sector. o Served as the Coordination Agency for CDM (Clean Development Mechanism) projects at the government level. o Implement national policy in the field of industrial and technological development.
Ministry of transport	o Implement national transport and infrastructure policy. o Collection of data and estimation of GHG emissions of the transport sector under the Energy section. o Providing advisory support for the development of strategy and planning of the GHG emission reduction.
Forestry Agency	o Develop, improves, and amendments to the forest sector reformation and implementation of afforestation and reforestation policy. o Carbon sequestration projects and afforestation and reforestation activities in Tajikistan as per forestry sector NAMA[66][66]. o Providing data for the estimation of GHG emissions of the LULUCF.
Statistics Agency	o Provide data records for the development of GHG emissions inventory. o Create and maintain databases and statistical registries at the national level, develop statistical methodologies, cooperate in the field of statistics, and interact with stakeholders. o Collect, process, analyze and distribute statistical data related to transport, housing and utilities as well as to the environment.

Name of the organization	Key roles related to climate change issues in the country
Academy of Science	o Serve as local experts for the estimations of greenhouse gases and carbon sequestration for the national communications and BURs. o Providing scientific advice on emission reduction methods, and provides technical advice on GHG inventory issues. o Conducting research on anthropogenic effects and factors on climate change.
Strategic Research Center	o Providing scientific advice on potential renewable energy technologies for GHG emissions reduction as a contribution to mitigation of the chapter of national communications and BURs.
Higher education universities (Russian-Tajik Slavonic University, State National University, Tajik Technical University)	o Involved with the drafting and development of the national communications and BURs chapter on public awareness and education.

50. The institutional arrangement focusing on national GHG inventory preparation and communication with the UNFCCC Secretariat is centered around Hydromet. The expert group focused on five subgroups (Energy, Industrial processes, Agriculture, Land-Use Change and Forestry, Waste), and also a team for the monitoring, quality assessment and technical processing of the findings received (graphs, tables, databases). The data necessary for calculations of GHG emissions and removals were selected from the statistical database of government institutions, including Statistics Agency, Committee on Land Management, Customs Committee, as well as the sectoral companies and enterprises (Barki Tojik for the energy industry, SUAH "Tochikiston" and GUP "Rokhi Ohani Tochikiston" for the transport sector, AOOT "Naftrason", GUP "Tajikgaz" for fuel and SUE "Hojagii Manziliyu Kommunali" for the waste sector). FAO data is used for a number of categories.

51. The existing institutional framework involving different national organizations involved in GHG inventory preparation, adaptation information collection and climate finance is presented in Table 4.

Table 4: institutional framework focusing on GHG inventory preparation, climate change adaptation assessment, and climate finance.

Organization	Role in GHG inventory preparation
GHG inventory preparation	

Organization	Role in GHG inventory preparation
Agency for Hydrometeorology of the Committee for Environmental Protection under the Government of Tajikistan	o UNFCCC Focal Point, responsible for the coordination and data collection, and compiling reports, for govt & the Convention on Climate Change, on national level activities. GHG Inventory and NC, BUR preparation is led by the Agency in coordination with national experts from various ministries and agencies. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
Ministry of Energy & Water Resources	o Provides data on energy production and expertise under the NC, BUR preparation. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
National Academy of Science	o Is the scientific center of the country in many areas of natural, technical, medical, agricultural, humanitarian and social sciences in the country; Provides data and expertise under the NC, BUR preparation. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
Ministry of economy	o Provides data and expertise under the NC, BUR preparation. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
Ministry of Agriculture	o Provides data and expertise under the NC, BUR preparation. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
Ministry of Industry & new technology	o Provides data and expertise under the NC, BUR preparation. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
Ministry of Transport	o Provides data and expertise under the NC, BUR preparation. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
Ministry of Foreign Affairs	o Leads the international process & communication under the Agreements and Conventions. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
Committee on Investments and state property	o Coordinates work on the monitoring of the investment projects on public, private and donor sides. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
Agency Statistics	o Main State body for monitoring and data collection provides data and expertise under the NC, BUR preparation. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.

Organization	Role in GHG inventory preparation
Agency on Forestry under the Government of Tajikistan	o Provides data and expertise under the NC, BUR preparation. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
State Unitary Enterprise for residential services	o Provides data and expertise under the NC, BUR preparation. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
Agency on land reclamation and irrigation	o Provides data and expertise under the NC, BUR preparation. Participates in the inter-ministerial working groups on GHG Inventory and other climate-related activities.
Adaptation information	
Committee for Environmental Protection	o Responsible for control of the use of natural resources, protection of land, minerals, forests, water and other resources, and also coordinates activities on environment protection among the government agencies. o Organizing and conducting environmental monitoring, forecasting and comprehensive study of the state of the environment, weather, glaciers, lakes and reservoirs, the analysis of phenomena and processes of natural disasters. o Conducting scientific research and studying the issues of environmental protection, rational use of natural resources, biological diversity, water resources and climate change. o Coordinating and ensuring the implementation of the commitments undertaken by the Republic of Tajikistan on the conventions and agreements on the protection of the environment and natural resources. o Carries out professional development for the integrated implementation of the climate change adaptation concept into the national legislation on environmental protection and sub-legal regulatory acts.
Agency for Hydrometeorology	o Coordinator for the preparation of information related to adaptation. o Capacity building of national experts in the field of adaptation. o Preparation of reporting documents on adaptation to climate change in Tajikistan for the UNFCCC. o Identification of priorities in critical sectors, geographic regions, vulnerable populations, ecosystems, and infrastructure. o Conducting comprehensive scientific research of regional processes of climate change and assessing the impact of the consequences of these changes on the sectors of the economy and the living conditions of the population.

Organization	Role in GHG inventory preparation
Ministry of Agriculture	o Development and implementation of a unified state policy in the field of agriculture, including in the field of crop production, animal husbandry and other branches of agricultural production. o Support agricultural producers, the development of recommendations to improve the efficiency of production of various products and agricultural work. o Development and implementation of projects for the application of climate-resistant and water-saving technologies in agriculture. o Development of adaptation measures and provision of data on their implementation in agriculture.
Ministry of Energy and Water Resources	o Identification and development of adaptation measures to climate change associated with water and energy factors. o Identifying and setting research and training objectives, including capacity building. o Development and implementation of projects for the application of climate-resistant and water-saving technologies in water management.
Ministry of Transport	o Responsible for the development of a set of measures for the consistent development of the transport complex of the Republic of Tajikistan, by meeting the requirements of the population of the country in economically profitable and safe transport services. o Monitoring the status and safety of the transport sector and infrastructure.
Ministry of Health and Social Protection	o Preparation of a set of necessary data, analysis of data on the impact of climate change on public health.
Agency on Statistics	o Carries out activities for the collection and dissemination of statistical information, guided by the principles of an objective and comprehensive study of socio-economic processes occurring in the country.
Agency for Forestry	o Implementation of projects to prevent desertification, combat land degradation, reforestation and protective afforestation in the republic. o Providing information on the development and implementation of adaptation measures in forestry.
Academy of Sciences	o Assessment of water, climatic, agro-climatic resources and agroecology, their changes under the influence of natural and anthropogenic factors.
Committee of Emergency Situations and Civil Defense	o Collection, development and exchange of information in the field of protection of the population, economic facilities and the territory of the Republic of Tajikistan from natural and man-made emergencies.

Organization	Role in GHG inventory preparation
Agency for Land Reclamation and Irrigation	o Development and implementation of measures to reduce the impact of natural disasters, including the restoration of water structures. o Development of measures for adaptation to climate change. Analysis and monitoring of the state of bank protection work on rivers.
Climate finance	
Ministry of Finance/Economy/StatAgency/Committee on Investment (public budgets, special funds, investment projects, private sector)	o Finance related data collection under the sectorial national strategies, programs and investment projects are monitored at the government level, executive agencies and development partners. o Each project is entered into a single register of the State Committee for Investment and State Property Management.
State Committee on Investment	o Coordinates and monitors project funds and implementation.
Executing Agencies	o The Executing Agencies report on project activities and financial resource development to the Ministry of Finance, the Investment Committee and other stakeholders.
Statistics Agency	o Collects data on climate finance through the line ministries, under national strategies, programs and implement projects.

Legal and Regulatory Framework on Climate Change

2.5.1   Climate Change Mitigation

52. A brief overview of the legal and regulatory framework focusing on climate change mitigation is presented in Table 5.

Table 5:   An overview of legal and regulatory framework focusing on climate change mitigation in Tajikistan.

Legal and regulatory policy, framework and program	Key features
Agricultural Reform Programme of the Republic of Tajikistan for the period of 2012 ? 2020.	o Development of agricultural climate change mitigation technologies (drought-resistant grain crops); conducting research works.

Programme of development of biotechnology of cattle in the Republic of Tajikistan for 2013-2017.	o Growing highly productive breeding stock, reducing the number of non-breeding cattle, and efficient use of land and pastures.
Pasture Development Program of the Republic of Tajikistan for 2016-2020 (Decree of the Government of the Republic of Tajikistan No. 724 of 2015)	o Selection and preparation of land for sowing natural grass seeds, importing and producing natural pasture grass seeds, revising the distribution of seasonal pastures, improving pasture condition with methods of primary and surface processing, as well as their protection from erosion.
Forest Sector Development Strategy 2016-2030	o Planting new forests on an area of more than 10 thousand hectares. Creating forest sharing groups.
The program of development of gardening and viticulture in the Republic of Tajikistan for 2016?2020	o Take specific measures to develop new lands and introduction vacant lands into agricultural circulation to create orchards and vineyards. Develop and publish recommendations on modern methods of cultivation and growing of fruit trees and grapes.
Midterm Development Program of the Republic of Tajikistan for 2016-2020	o Develop awareness-raising measures on the ecological status of land and water resources and ensure the effective implementation of sectoral programs. Creating a sustainable seed base of crops and livestock breeding o Provide support for the introduction of RES (solar, biogas, wind) in economic activity on the basis of preferential loans for entrepreneurship in the design, production and use of renewable energy installations and the creation of training and service centers to promote the expansion of renewable energy use.
Water Sector Reform Program of the Republic of Tajikistan for the period 2016 ? 2025	o Restoration of irrigation infrastructure and improvement of conditions for maintenance and operation of infrastructures. Rehabilitation of water supply and sanitation infrastructure.
National Programme for Development of Renewable Energy Sources and Construction of Small Hydropower Plants for 2016 -2020	o Installation of solar electrical plants in the field for which feasibility studies have been developed, with the attraction of investments for the period 2016-2020 2. Preparation of feasibility studies for wind power plants, attracting investments for the period 2016-2020. o Construction of small hydropower plants at irrigation facilities and waterways with feasibility studies.
State Target Program for the Development of the Transport Complex of the Republic of Tajikistan until 2025	o Reduction of pollutant emissions from stationary sources of transport enterprises. o Construction of gas refuelling stations. o Creation of production for the disposal of vehicles and waste from their operation. o Preparation and implementation of a production project for the processing and recycling of used motor oils and lubricants. o Creation of protective forest lines (roadside) along the roads.

Legal and regulatory policy, framework and program	Key features
The Strategy of Innovative Development of the Republic of Tajikistan for 2020	o Increase the share of industrial enterprises practising technological innovation in the total number of industrial enterprises to 5-8% by 2020. o Increase the share of innovative products in the total industrial output by 2020. o Develop priority technologies and sectors of the economy based on the tightening of requirements of technical regulations in environmental legislation.
The Program for the development of housing and communal services of the Republic of Tajikistan for the period 2014-2018	o Updating and developing municipal engineering infrastructure of cities, towns and rural areas, ensuring their reliable and sustainable operation, introducing modern and economical equipment and technology. o Execution of certain types of works on the provision of housing and communal services (water supply, municipal improvement and greening of the regions, sanitary cleaning, maintenance of elevator facilities and other types of works and services).
National Development Strategy of the Republic of Tajikistan until 2030	o Suggested activities include improving industrial waste management.
National Waste Management Strategy of the Republic of Tajikistan for the period 2017-2030	o Improving legal policy in waste management. o Improving institutional policy in waste management. o Improving economic mechanisms in waste management. o Development of innovative technologies and infrastructure for the introduction of waste in economic circulation.

2.5.2   ***Climate Change Adaptation***

53. A brief overview of the legal and regulatory framework focusing on climate change adaptation is presented in Table 6.

Table 6:   An overview of legal and regulatory framework focusing on climate adaptation in Tajikistan.

Legal and regulatory policy, framework and program	Key features

National Development Strategy of the Republic of Tajikistan until 2030 (NDS 2030)	o It outlines the general directions of economic development and was adopted in 2016. o It focuses on implementing measures that can help to reduce the impact of climate change-related to i) the use of non-traditional (renewable) energy sources; ii) the minimization of the negative impact of the transportation on the environment and human health; iii) fostering the development of "green employment", expanding the environmental entrepreneurship and the environmental services market with the support of the state.
National Strategy for Adaptation to Climate Change of the Republic of Tajikistan for the period up to 2030 (NSACC 2030)	o It was adopted in October 2019, as a strategic document to achieve the goals stated in the Paris Agreement. o It has prioritized four sectors that are both climate-sensitive and development priorities: i) energy; ii) water; iii) transport; and iv) agriculture. o It outlines adaptive measures in key sectors of the economy and suggests mechanisms and sources of financing.
Medium-Term Development Program of the Republic of Tajikistan for 2016-2020 (MDP 2016-2020)	o It focused on the to reduce the impact of climate change covering expanding access to natural resources and their rational use, creating legal protection mechanisms, providing financial support and meeting the needs for new technologies, developing a green economy and preventing the risks of climate change. o Some of the measures mentioned are the development of renewable energy sources, modernization of all types of transport, construction of 6 hydroelectric power plants with a capacity of 700 kWh, and reconstruction of 700 km of highways.
Medium-Term Development Program of the Republic of Tajikistan for 2021-2025 (MDP 2021-2025)	o It was adopted by the Government of the Republic of Tajikistan on April 30, 2021, under Decree No. 168. o A special section is devoted to environmental protection, climate change and natural disasters. o It focused on mechanisms for deploying capacity building processes on climate change adaptation of employees of authorized bodies and civil servants. o It also highlighted the development of gender-sensitive indicators for climate change were noted as adaptive measures.
Agricultural Reform Program (2012-2020)	o It highlighted the development and implementation of new agricultural technologies covering drought-resistant crops, research, setting up a support system for the development of livestock and meeting the needs of farms in better breeds and pastures, and improved structure of sown areas for fodder crops.
Comprehensive Program for the Development of Livestock in the Republic of Tajikistan for 2018-2022	o It focused on adaptation measures, selection and improved breeding, cultivation technology and feeding rates, and increased productivity of pastures.

Program for the Development of Pastures for 2016-2020	o It focused on increasing the stocks of pasture fodder, promoting an increase in the number of highly productive livestock, preparing land for sowing seeds, improving the condition of grazing lands, repairing and building roads and bridges, and improving the condition of 1500 hectares of pastures, importing and producing grass seeds, and repairing livestock routes.
Program for Reforming the Water Sector of the Republic of Tajikistan for 2016-2025	o It focused on the development of a long-term basin plan for the use and protection of water resources in 5 river basins. o It also focused on the development of seasonal and annual plans for the distribution and management of water resources in river basins, the restoration of irrigation infrastructure and improvement of conditions for its maintenance and operation, and the introduction of new water-saving technologies.
National Strategy of the Republic of Tajikistan on Disaster Risk Reduction for 2019-2030	o It highlighted ensuring access of all stakeholders to information on disaster risk, integrating disaster risk management into development processes, and improving mechanisms for disaster preparedness and response.
Strategy for the Development of Industry in the Republic of Tajikistan until 2030	o It highlighted the introduction of new technologies related to reducing emissions of harmful substances into the atmosphere and saving raw materials and energy resources.
State Target Program for the Development of the Transport Complex of the Republic of Tajikistan until 2025	o It focused on increasing the life cycle of the transport infrastructure to increase the resiliency to climate change. o It aimed to bring the transport infrastructure in line with international environmental standards. The activities covered are: improving pavement, increasing traffic capacity, building bypass roads in settlements, applying paints, and plastics and protecting metals from corrosion, and creating roadside protection belts.
Draft Strategy for the Development of Forestry for the period 2016?2030	o It focused on the development of national forestry covering the realization of institutional, legal and financial reforms; and the development of the forestry management framework. o The goal is to ensure sustainable development of the sector by ensuring a balance of ecological, economic and social functions.

2.6 Baseline initiatives toward Climate Change issues in the country

54. GHGs inventory preparation for the national inventory is the key component of the national MRV system. Because, national mitigation planning and implementation, and its impact assessment are based on the GHG inventory data. Existing institutional mechanisms and the process of development of GHG inventory are described in section 2.5.

55. Tajikistan adopted National Action Plan for Climate Change Mitigation in 2003 by the Governmental Decree No.259[67][67]. To mitigate such climate change impacts, the proposed approaches are to reduce GHG emissions and adapt to climate change. The measures to reduce GHGs (as a fulfilment of UNFCCC obligations) include enhancement of energy efficiency in relevant sectors of the national economy; application of effective technologies and use of energy sources in the national economy (that promotes high economic growth rate and reduce or limit GHG emissions); protection and enhancement of natural sinks and reservoirs of GHGs; promotion of sustainable forest management practices, afforestation and reforestation; promotion of sustainable agriculture; development and research on renewable (and new) energies and environmentally sound technologies for use; and encouragement of appropriate reforms in relevant sectors aimed at promoting policies and measures that reduce GHG emissions.

56. The National Action Plan also highlighted climate change adaptation. Principles and direction related to adaptation include: research on climate change and its impact on national resources, economy public health and development of additional adaptation measures; improvement of the systematic observation network and environmental monitoring to renew adaptation measures; improvement of systems to collect, analyze, interpret and disseminate data among end-users; enhancement of weather forecasting, climate modelling and early warning systems to minimize the risk of natural disasters; capacity building to strengthen institutional, technical and human resources to promote adaptation in the fields of climate change and hydrological research, geographical information systems, environmental impact assessment, protection and re-cultivation of lands rational use of water resources, conservation of ecosystems, sustainable agriculture, infrastructure development and health protection; and implementation of actual projects on adaptation on priority areas related to rational use of natural resources, economy and health protection.

57. Some of the baseline initiatives from the government of Tajikistan focusing on climate change are presented in Table 7. Table 8 presents the key projects related to climate change issues in the country.

Table 7: **National initiatives and strategies focusing on climate change.**

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature
National Development Strategy of the Republic of Tajikistan for the period up to 2030 (NDS-2030).	All ministries and departments. Monitoring of the implementation of the NDS is carried out annually by the Ministry of Economic Development and Trade.	Approved by the resolution of the Parliament of the country (Majlisi Namoyandagon Majlisi Oli) dated December 1, 2016, No. 636.	The specific amount of implementation is not certain. In order to implement the NDS, medium-term programs are usually developed, which determine financial resources for specific activities.	o Use of non-traditional (renewable) energy sources; minimization of the negative impact of the transport complex on the environment and human health; stimulating the development of "green employment", expanding and state support for the system of environmental entrepreneurship, and the market for environmental services.

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature
National Strategy for Adaptation to Climate Change of the Republic of Tajikistan for the period up to 2030 (NSACC)	All ministries and departments. Monitoring of the implementation of the National Strategy for Adaptation to Climate Change is carried out annually by the Committee for Environmental Protection under the Government of the Republic of Tajikistan	Decree of the Government of the Republic of Tajikistan approved on October 2, 2019 No. 482	With the direct participation of key ministries and departments, project proposals were developed in key sectors of the economy (agriculture, transport, water resources and energy), as well as in intersectoral sectors (education, health, gender, environmental protection, disaster reduction) in the amount of 500 million dollars USA of which 60% is directed to mitigation and 40% to adaptation.	o Climate change scenarios associated with changes in temperature and precipitation are identified. Identified losses associated with the risks of climate change. Based on the ranking, the main risks of climate change in key sectors of the economy (agriculture, water and energy resources, and the transport sector) were identified. o Based on the main definitions of risks, the ranking of adaptation measures in key sectors of the economy was carried out. Priority adaptation projects have been developed with the participation of key ministries. The main barriers and recommendations in the implementation of the Strategy have been identified. The main sources of funding for the Strategy have been identified. A system for monitoring and evaluating the implementation of the Strategy has been developed.

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature
National Strategy of the Republic of Tajikistan on Disaster Risk Reduction for 2019-2030.	Committee for Emergency Situations and Civil Defense under the Government of the Republic of Tajikistan	Approved by the Decree of the Government of the Republic of Tajikistan on December 29, 2018 No. 602	The specific amount of funding for this strategy is not defined. It was noted that the Strategy will be financed from the state budget, as well as by attracting external investments, grants, and humanitarian and donor funds from international organizations.	o Conducting a risk assessment focusing not only on threats but also on determining the vulnerability of the population to the risks of climate change. o Creation of a national and local database for the exchange of information on natural disasters. o Implementation and active use of information and communication technologies and other innovative solutions. o Development, demonstration and implementation of innovative systemic environmental solutions, including eco-system approaches to management in rural areas, especially in mountainous areas.
Industry development strategy in the Republic of Tajikistan for the period up to 2030	Ministry of Industry and New Technologies of the Republic of Tajikistan	Approved Decree of the Government of the Republic of Tajikistan on March 27, 2018 No. 159	The Strategy does not have a special section on financing, including those related to low emissions.	o Implementation of new technologies related to the reduction of emissions of harmful substances into the atmosphere, saving raw materials and energy resources.

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature
National strategy and action plan for biodiversity conservation until 2020.	Committee for Environmental Protection under the Government of the Republic of Tajikistan	Approved by the Committee for Environmental Protection under the Government of the Republic of Tajikistan on August 22, 2016	Financial resources for the activities of the strategy have not been determined.	o Comprehensive socio-economic assessment of national biological resources. o Restoration and maintenance of the genetic fund of plants and animals. o Conservation of biological diversity. o Ensuring the biological security of the country. o Promoting the sustainable use of biological resources to eradicate poverty and improve the well-being of the population.
The medium-term development program of the Republic of Tajikistan for 2016-2020.	All key ministries and departments. Annual monitoring of the implementation of the program is carried out by the Ministry of Economy and Trade	Approved by the decision of the Majlisi Namoyandagon Majlisi Oli of the Republic of Tajikistan on December 28, 2016, No. 678		o Increasing access to natural resources and their rational use, creating mechanisms for legal protection, providing financial support and meeting the needs for new technologies, developing a green economy and preventing climate change risks. Development of renewable energy sources, and modernization of all types of transport.

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature
The medium-term development program of the Republic of Tajikistan for 2021-2025	All key ministries and departments. Annual monitoring of the implementation of the program is carried out by the Ministry of Economy and Trade	Approved Decree of the Republic of Tajikistan April 30, 2021, No. 168	In the program implementation matrix, only in the section on Environmental Protection, Climate Change and Disaster Risk Reduction at the expense of the state budget and development partners is definitely more than 300 million US dollars.	o Development of a system for monitoring and evaluating progress in disaster risk management and climate change. o Development and submission of national inventories of greenhouse gases, regulatory and methodological framework for organizing a system for monitoring, assessing and approving greenhouse gas emissions. o Development of the National Action Plan for Adaptation to Climate Change. o Development of an adaptation plan and proactive climate change mitigation measures in key sectors of the economy to attract investment from development partners and the private sector. o Definition of a system of target indicators, including gender-sensitive indicators, to achieve national, sectoral and regional climate change adaptation goals. o Strengthening the mechanisms for organizing regular advanced training of employees of authorized bodies, and civil servants on adaptation to climate change and management.

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature
Tajikistan Water Sector Reform Program for 2016-2025	Ministry of Energy and Water Resources	Approved by the Decree of the Government of the Republic of Tajikistan on December 30, 2015, No. 791	$250 million for a set of donors and $12 million from the state budget.	o Development of a long-term basin plan for the use and protection of water resources in 5 river basins, and their periodic updating. o Development of seasonal and annual plans for the distribution and management of water resources in river basins. o Rehabilitation of irrigation infrastructure and improvement of conditions for its maintenance and operation. o Rehabilitation of drinking water supply and sewerage infrastructure.

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature
Agrarian Reform Program of the Republic of Tajikistan for 2012-2020.	Ministry of Agriculture	Approved by the Decree of the Government of the Republic of Tajikistan on August 1, 2012 No. 383	The program-specific amount of funding is not defined.	o Widespread application of successful practices based on the principle of joint management of pastures and forestry, with an emphasis on rehabilitation and protection of natural resources. o Testing in practice sustainable methods of land cultivation in order to improve soil fertility and reduce the impact of used chemicals and mineral fertilizers. o Diffusion of inexpensive water-saving/moisture saving technologies, drip irrigation, mulching, etc. o Distribution of inexpensive and locally available energy-saving technologies in rural areas, conservation of the ecosystem; Introduction of alternative (drought-resistant, parasite-resistant) crops. o Improved livestock breeding (through the use of breeds that are resistant to temperature changes). o Support in the development of relevant policies/strategies, including a legislative and strategic framework for the implementation of the next climate change challenge in

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature
Comprehensive Program for the Development of the Livestock Industry in the Republic of Tajikistan for 2018-2022.	Ministry of Agriculture	Approved Decree of the Government of the Republic of Tajikistan on March 27, 2018 No. 160	At the expense of the state budget -2 million US dollars At the expense of development partners - 2.5 million US dollars At the expense of the private sector - 3 million US dollars.	o Organization and carrying out selection and breeding work. o Improvement of growing technology and feeding norms. o Increasing the productivity of pastures by traditional and surface methods using modern achievements.

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature
State program for the study and conservation of glaciers of the Republic of Tajikistan for 2010-2030	Agency of Hydrometeorology under the Committee for Environmental Protection, Academy of Sciences	Approved by the Decree of the Government of the Republic of Tajikistan on May 3, 2010 No. 209	The program budget has not been determined.	o Inventory of large, medium and small glaciers in Tajikistan according to the catalogue of glaciers. o Organization of systematic climate observations and research work. o Modeling the impact of climate change on glaciers during the study period. o Development of methods for adaptation measures in the field of hydropower, agriculture, and human life in the context of climate change. o Assessment of the state of the climate, socio-economic and environmental consequences of its change. o Providing users with glaciological and climate information.

National initiatives and strategies	Implementing ministry	Year published	Cost/Budget information	Key feature
Food Safety Program of the Republic of Tajikistan 2019-2023.	Food Security Committee under the Government of the Republic of Tajikistan	Approved by the Decree of the Government of the Republic of Tajikistan on October 31, 2018, No. 520	The total budget of the program is 8 million US dollars.	o Create a mechanism to mitigate the impact of climate risks on the availability of food products. o Ensuring efficient use of water resources and protection of irrigation systems. o Financial incentives for vulnerable groups of the population to access food products and improve skills to generate additional income, especially for the rural population.

Table 8: Key projects focusing on climate change issues in Tajikistan.

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Country support to the enhancement of the Nationally Determined Contribution in the AFOLU sector - Technical Assistance Fund (TAF), on behalf of the NDC Partnership Climate Action Enhancement Package (CAEP)	NDC Revision and Raising Ambition I	All implementing partners need to ensure that while implementing the technical assistance (TA), the following principles are adhered to: - Work under the leadership and guidance the governments; - Ensure a partnership-based approach, whereby the implementing partner is expected to coordinate with other partners supporting CAEP activities in country and draw expertise from the vast network	Several implementing partners, as UNDP, GIZ, WB, EC under the overall coordination of FAO	CEP	NDC - Partnership	For FAO - 2,976,417	Completed	August 2020	December 2021	Global	National

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Climate Change Adaptation and Mitigation Program for the Aral Sea Basin (CAMP4ASB)	Solving common problems and challenges related to the consequences of climate change in the countries of Central Asia through increased access to improved knowledge and data in the field of climate change for key stakeholders (decision makers, expert communities, etc.); and through increased investment and technical capacity building.	Targeted modernization of climate-related monitoring systems. Development of methodologies, approaches and tools. Development of information or knowledge products. Capacity building. Introduction of climate investment assessment mechanism. Outreach and coalition building. Creation of a regional information platform.	Regional Ecological Center of Central Asia	Committee for Environmental Protection of the Republic of Tajikistan	International Development Association, World Bank	9	Current	January 2016	September 2024	Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan	regional

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Support the Republic of Tajikistan to strengthen its capacities for monitoring and evaluation of climate finance, identifying potential Direct Access Entities and engaging the private sector on climate change related investments with the Green Climate Fund	To support the Republic of Tajikistan to strengthen its capacities for monitoring and evaluation of climate finance projects, identifying potential Direct Access Entities and engaging the private sector on climate change related investments in Tajikistan, and particularly with the Green Climate Fund	Institutional capacity and coordination mechanisms in place to govern and coordinate climate action and finance. GCF country programming process. Supporting to ensure direct access to climate finance. Climate Finance strategies and project pipeline strengthened.	Food and Agriculture Organization of the United Nations (FAO)	Committee on Environmental Protection (CEP)	Green Climate Fund (GCF)	0.629	Current	2021	2024	Tajikistan	National

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Access to Green Finance	The goal of the project is to develop and strengthen the potential of the microfinance system in Tajikistan and organize energy-efficient, economical and environmentally friendly houses through the provision of micro-credits to households.	The project "Access to Green Financing of Renewable Energy Sources" is multi-sectoral, as it is aimed at strengthening and developing the private sector through direct public investment, as well as developing and diversifying the energy sector, thereby ensuring environmental efficiency and climate sustainability of the country's electricity supply.	Project Implementation Center "Green Financing" under the Ministry of Finance	Ministry of Finance	Asian Bank	11	completed	year 2013	2018	Tajikistan	National

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Environmental Land Management and Rural Livelihoods-ELMARL	Agriculture	1. Prevention and reduction of soil erosion; 2. Improvement of the state of degraded pasture lands; 3. Improving the methods of sustainable pasture management; 4. Ensuring the protection of soil resources and moisture conservation; 5. Improving the efficiency of water resources use; 6. Increasing sustainable energy supply from renewable sources.	Committee for Environmental Protection	Committee for Environmental Protection	World Bank, GEF	19	ended	2013	2018	Tajikistan	Regional
Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
An integrated landscape approach to improve the climate resilience of small farmers and pastoralists in Tajikistan	Agriculture	Component 1: Integrated Watershed Management for Climate Resilience. Component 2: Ecosystem adaptation in agroecological landscapes. Component 3: Knowledge management for building climate resilience through ecosystem-based management and adaptation of watershed	Committee for Environmental Protection	Committee for Environmental Protection	UNDP, GCF	11	At the stage of implementation	2021	2024	Tajikistan	Kafirnigan river basin

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
CLIMADA PT - Phase 1	Energy, housing, private sector	Providing innovation mechanism funding to help individuals and businesses cope with the impacts of climate change by building energy resilience sector, agriculture, small and medium business and residential sector	Bank Eskhata, microfinance organization IMON International, Microcredit organization "Humo"	Ministry of Finance	Climate Change Strategic Fund - EBRD	13.0 (5-CIF, 8-EBRD)	completed	2016	2019	Tajikistan	National

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Climate Change Adaptation and Mitigation Programs in the Aral Sea Basin (CAMP4ASB -1 Phase)	Agriculture	The second component consists of the following sub-components: (1) investment financing and (2) capacity building and public support. The third component, assistance in implementing coordination at the regional and national level, consists of two sub-components: (1) coordination at the regional level and (2) coordination at the national level.	Ministry of Finance	Ministry of Finance	The World Bank	16	completed	2016	2021	Tajikistan	National

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Development of the National Action Plan for Adaptation to Climate Change (NAP)	Key sectors of the economy (agriculture, water resources, education)	. Development of mitigation and adaptation measures for key sectors of the economy; 2. Develop recommendations on budgeting climate change issues in the planning process; 3 Development of a monitoring mechanism for the implementation of the National Adaptation Plan; 4. Development and implementation of standards and procedures for climate data and information management; 5.	Committee for Environmental Protection	Committee for Environmental Protection	Green Climate Fund (GCF) - UNDP	3	operating	2020	2024	Tajikistan	National

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Project ?Ensuring climate change resilience of the Pyanj River Basin?		1. Component A: Hydromet Campus Modernization 2. Component B: Legal and organizational transformation 3. Component C: Forecasting and warning of extreme weather Component D: Marketing of Fee-based services	Agency of Hydrometeorology	Agency of Hydrometeorology	Green Climate Fund, ADB	11	2019	2023		Tajikistan	National

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Building Capacity for Climate Resilience	Hydrometeorology, natural disasters	? Creating a Modeling Center for Climate Change in the State Hydrometeorology Establishment ? Developing Climate Model for Climate Change Forecasting (Dynamic disaggregation) ? Climate Change Impact evaluation to the economical priority sectors ? Development of Local Adaptation Projects through the mechanism of small subsidies, by involving the public	Committee for Environmental Protection	Committee for Environmental Protection	Asian Bank	6	completed	2013	2018	Tajikistan	Regional

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Climate Change Adaptation in the Pyanj River Basin	Natural disasters, drinking water, irrigation system	1. Flood protection infrastructure is protected from the impact of climate change in 10 jamoats; 2. Irrigation system is climate protected in 8 jamoats; 3. Water supply infrastructure is climate protected in seven jamoats; 4. Microcredit and microdeposit services to promote climate resilience in the Pyanj River Basin	Project implementation centers under these ministries	Ministry of Finance, Agency for Melioration and Irrigation, Housing and Utilities (Housing and Communal Services)	Climate Change Strategic Fund - ADB	21.55	completed	2013	2020	Tajikistan	Regional

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Improving hydrometeorological services in the Republic of Tajikistan	Natural disasters, water resources	1. Institutional strengthening of Tajikhydromet, including increasing human resources and financial sustainability models; 2. Improvement of hydrometeorological observation networks; 3. Improvement of the service delivery system Tajikhydromet;	Agency of Hydrometeorology of the Republic of Tajikistan	Agency of Hydrometeorology of the Republic of Tajikistan	Strategic Fund for Combating Climate Change - WB	13	operating	2013	2022	Tajikistan, Kyrgyzstan, Uzbekistan	regional

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Improving the resilience of the Kairakkum HPP to climate change	Energy, Water resources	Strengthening the resilience of HPPs to the expected impacts of climate change through progressive modernization, considering the projected increase in climatic and hydrological instability	Open Joint Stock Holding Company "Barki Tojik"	Open Joint Stock Holding Company "Barki Tojik"	Climate Change Strategic Fund - EBRD	59		2014	2020	Tajikistan	National

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Climate Change Adaptation and Mitigation Program for the Aral Sea Basin (CAMP4ASB Phase II) by supporting adaptation activities in Tajikistan and Uzbekistan	Natural disasters, agriculture, environmental protection	1. Livelihoods of people and communities; 2. Ecosystems and ecosystem services; 3. UN Sustainable Development Goals #11 Sustainable cities and communities;	Committee for Environmental Protection	Committee for Environmental Protection	Green Climate Fund (GCF) - World Bank	10	active	2018	2023	Tajikistan, Kyrgyzstan, Uzbekistan	regional

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Enhancing climate resilience of vulnerable and food insecure communities through capacity building and livelihood diversification in the mountainous regions of Tajikistan	Natural disasters, agriculture, environmental protection	1. Disaster risk management; 2. Protection of health, food and water; 3. Livelihoods of people and communities; 4. Ecosystems and ecosystem services.	World Food Program	Committee for Environmental Protection	Green Climate Fund (GCF)	10	current	2019	2023	Tajikistan	National

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Zarafshan River Basin Management Project and Rehabilitation of the Irrigation System.	Agriculture, water resources, disaster reduction	1. Restoration of the on-farm irrigation system and support for Water Users Associations; 2. Introduction of drip irrigation; 3. Increasing the level of the potential of farms for the efficient use of water resources, considering climate change;	Project Implementation Center	Agency for Melioration and Irrigation	European Union (EU) Trust Fund - World Bank	14	current	2017	2022	Tajikistan	Zarafshan river basin

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Project to Strengthen Critical Infrastructure for Resilience to Natural Hazards	transport infrastructure	1 Restoration and modernization of vital bridges in the Gorno-Badakhshan Autonomous Region (GBAO); 2. Modernization of the national crisis management center and the emergency communication system, which allows emergency response services to quickly access information about dangerous situations; 3. Development of a disaster risk financing strategy in Tajikistan for the	Project Implementation Center	Ministry of Finance and Transport	The World Bank	50	implemented	2017	2022	Tajikistan	National

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
Strengthening livelihoods through climate change adaptation in Kyrgyzstan and Tajikistan	Agriculture, natural disasters	1. Measures to support agriculture include the introduction of water-saving irrigation methods and water-saving crops, the use of quality seeds and the restoration of reservoirs; 2. Measures to reduce the risk of disasters include the construction of dams and the strengthening of the banks of the river and, in particular, the control of erosion.	GIZ		German Federal Ministry for Economic Cooperation and Development (BMZ)	6	Completed	2015	2018	Tajikistan, Kyrgyzstan	regional

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
CLIMADA PT-2 phase	Energy, food security, environmental protection, drinking water	1. Generation and access to energy; 2. Buildings, cities, industries and home appliances; 3. Health, food and water; 4. Infrastructure and environment; 5. Gender benefits This project will benefit at least 33,000 women; 6. UN Sustainable Development Goals #7 Affordable and clean energy	Project Implementation Center Green Economy	Ministry of Finance	The World Bank	9	completed	2016	2021	Tajikistan	National

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus

Program/Project/Activity	Objective	Key measures	Implementing Organization	Executing ministry	Funding	Budget (US $ m)	Implementation status	Start	Completion	Geographical focus	Project focus
PROJECT TA 8090 TAJ: Capacity Building for Climate Change Adaptation	The project aims to strengthen the capacity of planning to adapt to climate change at the national and local levels	1. Information on climate change should be available to various users 2. Inclusion of climate change risks in Tajikistan's development plans and implementation of development projects 3. Development and application of knowledge management systems 4. Managing PPCR Results to Achieve Objectives 5. Transformation of the PACR secretariat into a ?National	Committee for Environmental Protection	Committee for Environmental Protection	ADB	6	finished	2013	2018	Tajikistan	National

2.7 **Climate Change and Gender**

58. The country has adopted a number of legal and regulatory frameworks that can indirectly affect the resilience of women and girls to the risks of climate change. Some of these are: (i) Family Code of the Republic of Tajikistan (dated November 13, 1998), (ii) Decree of the President of the Republic of Tajikistan "On measures to improve the status of women in society" (December 1999), (iii) the fundamental Law of the Republic of Tajikistan on ?State Guarantees of Equality of Men and Women and Equal Opportunities for the Employment?, adopted on December 15, 2004, (iv) State program "Main axes of state policy to ensure equal rights and opportunities for women and men in the Republic of Tajikistan for 2001-2010."

59. The gender aspects of climate change are included in NDS 2030 (2016). The strategy builds on the commitment of the Government of the Republic of Tajikistan to achieve the SDGs, including SDG (Gender Equality). The strategy emphasizes the need to address gender equality and climate change, in particular in the context of rural areas, in order to ensure sustainable development.

60. NSACC 2030 describes how the Republic of Tajikistan can invest in building resilience to climate change, considering the multifaceted issues of gender, youth and other vulnerable groups. The strategy recognizes the vulnerability of women involved in agriculture.

61. MDP 2021-2025 reveals specific goals and indicators related to the gender aspect of climate change. For example, one of the gender goals is to increase women's awareness of the risks of climate change from around 15% now to 35% in 2025. In order to make regulatory documents comply with international standards, the goal is to develop gender-sensitive indicators on climate change and disaster risk management by 2022. Gender-sensitive indicators are also included in such sectors of the economy as agriculture, water supply and energy, social protection, education and health.

62. The first BUR[68][68] of the country is also highlighted followings in relation to gender:
? Raising awareness and improving understanding of the connection between gender and
? Climate change in the development context;
? Promotion of nexus of gender and climate change in planning, budgeting and practice; and
? strengthening the capacity and providing opportunities for women?s active participation in sustainable socio-economic development, considering climate change.

63. Table 9 presents an overview of the gender aspects mentioned in different national policy documents of Tajikistan.

Table 9: An overview of gender aspects in different national policies.

National policy document	Year of adoption	Objective (s)	Key Gender messages
National strategy for enhancing the role of women in the Republic of Tajikistan for 2011-2020	Approved by Government Decree Republic of Tajikistan dated May 29, 2010 No. 269	The need to adopt the National Strategy for the Activation of the Role of Women in the Republic of Tajikistan for 2011-2020 (hereinafter referred to as the Strategy) is determined by the problems caused by socio-economic and political transformations in the Republic of Tajikistan. In particular, insufficient public awareness of the need for gender equality and the implementation of gender policy.	o Ensure the formation of gender-responsive budgets to meet the practical and strategic needs of gender groups. o To organize training of women for participation in political, state activity and management; develop appropriate programs for the training and retraining of women, as well as form a reserve of women cadres for work in government at various levels. o Ensure women's access to all public service activities, not limited to sectors in which women are traditionally employed (education, health, social services). o Provide support for the activities of women, youth, trade unions and other organizations. o Support for sectors where women are predominantly employed. o Expansion of opportunities for training women in new skills and specialities that will be in demand in highly paid industrial sectors. o Increasing the competitiveness of women in the labour market with the use of a support system (consultations, assistance in training and employment). o Expansion and improvement of comprehensive measures to increase the enrollment of girls in the secondary and vocational education system, including those living in rural or remote areas, as well as in low-income families.

National policy document	Year of adoption	Objective (s)	Key Gender messages
Decree of the President of the Republic of Tajikistan on enhancing the role of women in society.	December 3, 1999 #5	In order to ensure the broad participation of women in public life and government, improve the social status of women and improve the national gene pool, enhance the role of women in strengthening the moral foundations.	o Considering the competence, professional and business qualities, appoint women to the leadership of ministries, state committees, departments, state enterprises, institutions and organizations, prosecutors and courts, higher education institutions and other educational institutions. o The prosecutor's office, ministries of justice, and internal affairs of the republic to toughen the fight against manifestations of cases of humiliation and violence against women, polygamy, and restrictions on the rights of women and girls. o Considering the requirements of the time and the recommendations of local authorities in the training of personnel from among the girls of mountainous regions, when they enter and further study in higher and secondary specialized educational institutions, create preferential conditions for them. o Take under constant control the issues of selection and appointment of women to responsible positions, education of the young generation of leading cadres from among women and girls, especially in the field.

National policy document	Year of adoption	Objective (s)	Key Gender messages
National Development Strategy of the Republic of Tajikistan for the period up to 2030 (NDS-2030).	Approved by the Parliament on December 1, 2016, No. 636	Ensuring equality of opportunity and reducing social inequality in Tajikistan.	o Considering the requirements of the time and the recommendations of local authorities in the training of personnel from among the girls of mountainous regions, when they enter and further study in higher and secondary specialized educational institutions, create preferential conditions for them. o Take under constant control the issues of selection and appointment of women to responsible positions, education of the young generation of leading cadres from among women and girls, especially in the field. o Improvement of legislation in order to implement state guarantees to create equal opportunities for women and men. o Development of institutional mechanisms for incorporating national and international commitments to ensure gender equality and women's empowerment into sectoral policies. o Activation of mechanisms for ensuring legal literacy and social inclusion of women, including rural ones. o Increasing the gender potential and gender sensitivity of employees of all branches of government. o Introduction of gender budgeting into the budget process. o Formation and implementation of a gender-sensitive system of information support and education of the population in preventive, protective and restorative actions for natural disasters and climate change.
National Strategy for Adaptation to Climate Change of the Republic of Tajikistan for the period up to 2030 (NSACC)	Decree of the Government of the Republic of Tajikistan approved on October 2, 2019 No. 482	A special chapter is devoted to the development of measures to reduce the impacts of climate change, considering gender aspects	o The main problems in the gender sector are identified, considering the level of potential at the systemic, organizational and individual.

National policy document	Year of adoption	Objective (s)	Key Gender messages
The medium-term development program of the Republic of Tajikistan for 2021-2025	Approved by the Decree of the Republic of Tajikistan on April 30, 2021, No. 168	A special section is devoted to the reduction of social and gender inequality.	o Achieving gender equality in all its forms in terms of income and non-related factors. o Improving the legal and regulatory framework to promote gender equality. o Strengthening mechanisms for ensuring legal literacy and social inclusion of women, including rural ones. o Encouraging the involvement of women in decision-making processes at all levels and in all sectors. o Expanding opportunities for implementing the principle of priority, full funding of gender policy measures. o Especially in the field of employment. o Increasing the gender potential and gender sensitivity of employees of all branches of government. o Introducing a gender budgeting system into budget processes. o Development and implementation of training and retraining programs for women returning to the labor market after long breaks, including maternity leave and child care. o Determination of a system of target indicators, including gender-sensitive indicators, to achieve national, sectoral and regional adaptation goals and approval of methodological recommendations for climate risk assessment, and development of sectoral and regional climate change adaptation plans.

National policy document	Year of adoption	Objective (s)	Key Gender messages
Law of the Republic of Tajikistan on state guarantees equal rights for men and women and equal opportunities for their implementation	Approved by the Parliament on March 1, 2005.	This Law regulates relations to ensure constitutional guarantees of equal rights for men and women in the social, political, cultural, as well as in any other sphere, is aimed at preventing discrimination based on sex and establishes state guarantees of equal opportunities for people of different sexes.	o Provide equal conditions for men and women in obtaining basic general, secondary vocational and higher education, all types of vocational training and advanced training to participate in the implementation of the educational and scientific process. o Ensuring equal opportunities for men and women in the exercise of the right to vote. o Ensuring equal opportunities for men and women in the formation of election commissions. o Guarantees to ensure equal opportunities for men and women in the public service. o Promoting gender equality in labor relations. o Inclusion in collective agreements and agreements of measures to ensure equal opportunities for men and women.

2.8 Barriers and Gaps

64. The barriers and gaps identified in the first BUR[69][69] are as follows:

o Lack of capacity of the national experts, in particular, of the Climate Change Research Center of the Agency for Hydrometeorology of the RT in accordance with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and on the software.

o Lack of experts on the application of international experience and use of satellite data (GIS) to reduce uncertainties in estimations of emissions/ removals in forestry and other land use.

o Lack of capacity building and technical support for the experts of the Statistics Agency, which are responsible for the development of the energy balance, collection and submission of data on fuel consumption in aviation, road transport and data in the waste sector.

o Lack of capacity focusing on the development and approval of the special forms of statistical accounting and reporting of all missing data necessary for GHG inventory.

o Lack of familiarity with methods of identifying key sources and sinks of GHG in terms of volumes and trends of emissions.

o   Lack of technical experts on possible methods for reducing GHG emissions for their subsequent use by the decision-makers at the country level using the international experience.

o   Lack of institutional capacity aimed at coordination of all activities on (i) the development of the GHG national inventories, (ii) the monitoring and reporting on the policy, activities and projects on climate change mitigation, and adaptation, (iii) the methodological issues.

65. The barriers and gaps identified during the consultation with the national counterpart during the PIF stage are:

o   No identified FP?s at the sector level, each GHG Inventory process under the NC & BUR goes through the official expert nomination request to the Government. Before mainly the same group of experts were participating, now most of them are retired or left the position.

o   Data related gaps are presented in Table 10.

Table 10: Identified data related gaps during the PIF stage consultation.

Sector	Priority data gaps
Energy	o Main data source is from the Ministry & Statistics Agency. More detailed data is needed to lower the GHG Uncertainty level and to higher up the Tier.
Agriculture and livestock	o Main data source is from the Ministry & Statistics Agency. More detailed data is needed to lower the GHG Uncertainty level and to higher up the Tier.
Forestry and Other Land Use change	o Main data source is from the Ministry & Statistics Agency. More detailed data is needed to lower the GHG Uncertainty level and to higher up the Tier.
Industry	o Main data source is from the Ministry & Statistics Agency. More detailed data is needed to lower the GHG Uncertainty level and to higher up the Tier.
Waste	o Main data source is from the Ministry & Statistics Agency. More detailed data is needed to lower the GHG Uncertainty level and to higher up the Tier.

o   Technical capacity gaps are presented in Table 11.

Table 11: Identified Technical Capacity gaps during the PIF stage consultation.

Technical capacity	Involved national organizations and entities
National: Identification/Implementation of mitigation/adaptation actions and progress in emission cut under the national strategies and programs.	Relevant to each IPCC sector at the national level.
Development and assessment of impacts of mitigation/adaptation actions and options (national/international and regional training).	Relevant to each IPCC sector at the national level.

Tools and Methodologies for the emission projections and inventory (national/international and regional training).	Agency for Hydrometeorology/ National GHG Inventory Team/Each IPCC sector at national level/ University & Academy of Science.
PA Article 13: MRV/ETF principles and requirements (national/international and regional training).	State agency and each IPCC sector at the national level.
PA Article 6: Mechanisms of Sustainable Development (national/international and regional training).	Ministry of Finance/Ministry of Economy/ Each IPCC sector at the national level including the private sector.
Sector Vulnerability assessment (national, international and regional training).	Agency for Hydrometeorology/ line ministries and agencies.
GIS techniques for spatial analysis, and risk mapping.	Agency for Hydrometeorology/ line ministries and agencies.
Formulation of adaptive measures in the sectorial programs.	Agency for Hydrometeorology/ line ministries and agencies.
Monitoring and Reporting.	Agency for Hydrometeorology/ line ministries and agencies.
NDC implementation, monitoring and reporting.	Line ministries and agencies.
Climate finance assessments, public / private and international.	Line ministries and agencies.
Institutional frameworks of MRV/ETF.	Line ministries and agencies.
Mitigation/Adaptation action plan formulation.	Line ministries and agencies.
Mitigation/Adaptation impact assessment.	Line ministries and agencies.

66. Based on the gaps and barriers discussed above to meet the UNFCCC reporting requirement, the key barriers that should be overcome to ensure the National MRV system can comply with the requirement of the Enhanced Transparency Framework in the Paris Agreement are as follows:

? **Barrier 1-Lack of integrated and systematic coordination and institutional mechanism for ETF reporting:** There is a lack of sharing, archiving, and regular updates of data related to ETF reporting. The national communication and BUR are in the process of development through the submission to UNFCCC. Yet, coordination and institutional arrangement are project-based. The lack of institutional capacity to ensure continuous data and information-driven decision-making affects the transparent monitoring of NDC actions. Also, there is a lack of awareness among the stakeholders regarding the Paris Agreement and the ETF.

? **Barrier 2-Lack of technical expertise and knowledge on ETF reporting focusing on climate change mitigation, adaptation, and support received:** There is a lack of expertise and knowledge on the detailed calculation of the uncertainty of emissions to know factors contributing to the highest uncertainty. Similarly, there is a lack of information on the quality of estimates, and data quality issues. This is critical to ensure the comparability of estimates between years. So, Quality Assurance (QA)/Quality Control (QC) and verification processes are also limited.

The government agencies have limited capacity for systematic collection, monitoring, reporting, and evaluating adaptation actions. There is a lack of harmonized indicator and monitoring systems for prioritized national adaptation activities. Insufficient data and information to assess the immediate climate change adaptation action are another major lacking. Limited technical capacity and resources for prioritizing and monitoring the NDC adaptation actions are also prominent.

? **Barrier 3- Absence of an integrated data and information system for ETF reporting focusing on climate change mitigation, adaptation and support received:** The majority of the activity data for the previous GHGI are collected indirectly from expert sources and statistics. Sometimes it is also approximated. Focusing on direct measurement and reporting is crucial to ensure quality activity data because insufficient activity data can lead to incomplete emissions estimates. Default IPCC values were also used sometimes. Developing country-specific emission factors will improve the estimates of GHG emissions. The lack of integrated data and information systems with comprehensive tools and methodologies to comply with ETF requirements is also prominent.

(3)   THE PROPOSED ALTERNATIVE SCENARIO

67. The GEF alternative scenario is designed to strengthen Tajikistan's technical and institutional capacity to comply with the Enhanced Transparency Framework (ETF) of the Paris Agreement as explained in Figure 5 Theory of Change. The CBIT project will ensure efficient and comprehensive climate change mitigation, adaptation and support related information system through building technical and human capacities.

Component 1: Strengthening institutional capacity for coordinated monitoring and reporting under ETF.

68. This component will help strengthen the capacities of national and local institutions to place proper political and institutional structures to ensure transparency in the MRV system. This component will establish clear institutional roles and responsibilities for line ministries, departments, and divisions with the targeted outputs, such as (i) Output 1.1.1 Established ETF roadmap, action plan and institutional arrangement focusing on climate change mitigation adaptation and support received in Tajikistan, and (ii) Output 1.2.1 Enhanced stakeholder capacity

in Tajikistan on ETF reporting procedure focusing in climate change mitigation adaptation and support received. Details activities are listed under <mark>Table B (INDICATIVE PROJECT DESCRIPTION SUMMARY).</mark>

69. This institutional strengthening will involve a broad range of stakeholders, from ministerial staff to policymakers, civil society, academia, and the private sector. FAO?s long-standing experience in institutional strengthening will be capitalized on this component. FAO has developed a number of tools for institutional assessment and strengthening under the Global CBIT project. Under this component, the tools[70][70] such as (i) Biennial transparency report (BTR) guidance and roadmap tool, (ii) Greenhouse Gas Data Management (GHG-DM) tool, (iii) Institutional Arrangements for National Inventory Systems, and (iv) Action recommendations on capacity-building for transparency and reporting will be utilized to strengthen the institutional structure to comply with ETF.

70. To ensure the smooth operation of domestic MRV and climate transparency there should be a regular exchange of data and information. Considering the existing barriers as highlighted in paragraph 66, through memoranda of understanding (MoU) between stakeholders the exchange of data and information will be formalized. Such MoU will define the generation, storage, access, and use of data and information terms. The aim is to ensure that all stakeholders will work simultaneously to ensure the smooth operation of the system to be put in place.

71. The project will ensure ETF-related data sharing processes are integrated with broader national coordination for data sharing and management for sustainable development. It will ensure coordination with the ongoing national communications and submitted BUR. For example, the CBIT project utilizes the existing institutional mechanisms as mentioned in Table 4, and sectoral Leads; but will aim to further strengthen their institutionalization and functionality with a clear definition of procedures, roles and responsibilities in line with ETF.

72. The proposed institutional framework and coordination will be linked to the existing Department of environment protection and emergency situations under the Executive Office of the President of the Republic of Tajikistan, and Committee for environmental protection to coordinate high-level climate change activity (e.g. legislative and policy direction, supervision, oversight, and guidance) across different levels. Such approaches will ensure the preparation of GHG inventories, tracking of NDC actions, and monitoring the climate finance will gradually be supported by government staff and the national budget.

Component 2: Enhancing stakeholders? technical capacities for ETF reporting.

73. The proposed CBIT project will strengthen the technical capacity of the stakeholders in Tajikistan with the targeted outputs of (i) Output 2.1.1 National stakeholders with enhanced technical capacity for monitoring and reporting NDC climate change adaptation actions, (ii)

Output 2.2.1 Enhanced institutional coordination on reporting and capacity for data collection, methodologies, guidelines, protocols, including quality assurance and quality control (QA/QC) processes and full integration of the sectoral data on GHG emissions inventory for tracking mitigation actions, and (iii) Output 2.3.1 National stakeholders with enhanced technical capacity for reporting climate finance (domestic and international) and support received for NDC actions. Details activities are listed under Table B (INDICATIVE PROJECT DESCRIPTION SUMMARY).

74. FAO?s long-standing experience in technical capacity development focusing on climate change, and sustainability issues. Such expertise will be capitalized in this component. FAO has developed a number of tools for GHG inventory preparation and MRV system development under the Global CBIT project[71][71]. Under this component, the tools such as (i) Measurement, reporting and verification (MRV) guidance for mitigation actions in the agriculture, forestry and other land use (AFOLU) sector, (ii) Greenhouse Gas Data Management (GHG-DM) tool, (iii) UNFCCC Quality assurance (QA) process, (iv) Nationally determined contributions (NDC) tracking tool, (v) Nationally determined contributions in Agriculture, forestry and other land use (NDC-AFOLU) Navigator, (vi) Nationally determined contributions expert tool (NEXT), and (vii) FAOSTAT ? Emissions will be utilized to enhance the technical capacity of the stakeholders. In addition to the AFOLU, other sectors, such as energy that are included in the NDC, will be supported to build national capacity using tools including GHG data management, archiving guidance, institutional arrangement tools and e-learning modules. All relevant sectors will equally receive required support building on the experiences from the recently completed project, ?Country support to the enhancement of the Nationally Determined Contribution in the Agriculture, Forestry and Other Land Use (AFOLU) sector? under the Technical Assistance Fund on behalf of the NDC Partnership Climate Action Enhancement Package (CAEP)?. The project supported Tajikistan in making progress on its commitments under the Paris Agreement and revision of the NDC in close collaboration with the Committee on Environmental Protection under the Government of Tajikistan (CEP). The project's activities focused on strengthening the resilience of four sectors (AFOLU, energy, IPPU and waste), in collaboration with other agencies such as UNDP, GIZ and WB, in a context of climate change while ensuring food and economic security. It should be noted that similar support was also provided by FAO in 17 countries.

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[1] https://www.fao.org/climate-change/programmes-and-projects/detail/en/c/1371043/

75. The component will also ensure, gender-sensitive training programs for GHG inventory methodologies and tools, national specific climatic and socio-economic scenarios, emission factors, methodologies, tools for mitigation assessment of GHG emission, climate change vulnerability assessment, and climate finance. The proposed training will utilize the ETF training materials being made available at the global CBIT platform, as well as the FAO e-learning

courses. Capacity for LULUCF assessment will be strengthened through hands-on training of relevant stakeholders using Collect Earth, the land representation matrix tool, and subsequent application of the tool by the trained participants in carrying out a nationwide LULUCF assessment for the period beyond the national communications. For the AFOLU sector, training will be provided based on the IPCC guidelines for GHG inventory, ETF MPGs relevant to the AFOLU sector, Ex-Ante Carbon-balance Tool (EX-ACT), and FAO GLEAM-i tool relevant to livestock. In coordination with the Global CBIT-AFOLU project, targeted stakeholders will be also completed the three e-learning courses on MRV: (a) preparing a greenhouse gas inventory under the ETF; (b) assessing uncertainties in the national greenhouse gas inventory with a focus on the LULUCF; and (c) estimation of methane emissions from enteric fermentation at Tier 2 level.

76. Nationally appropriate indicators related to adaptation will be developed considering existing SDGs and national indicators, *Tracking Adaptation in Agricultural Sectors: Climate Change Adaptation Indicators* of FAO[72][72], and *Reporting adaptation through the biennial transparency report: A practical explanation of the guidance*[73][73]. FAO has developed a number of tools for climate change resiliency, monitoring and evaluation under the Global CBIT project. Under this component, the tools[74][74] such as (i) Loss and damage assessment, (ii) Monitoring and Evaluation (M&E) training package, (iii) Modelling System for Agricultural Impacts of Climate Change (MOSAICC), and (iv) Self-evaluation and Holistic Assessment of climate resilience of farmers and pastoralists (SHARP) will be utilized under this component.

Component 3: Developing a data and information management system for ETF on NDC mitigation, adaptation actions, and support received.

77. The project will develop a robust data and information management system focusing on NDC mitigation, adaptation actions, and support received with targeted Output 3.1.1 Established guidelines, protocols and indicators on data collection, update archiving, and tracking of GHG inventory, adaptation, climate finance and support received in Tajikistan, and (ii) Output 3.1.2 Operational Tajikistan?s Climate Change Transparency Information Management System (TCCTIMS) with archived data for tracking the NDC climate change mitigation and adaptation actions, climate finance and support received. The main users of the data and information management system will be the technical officers in the government agencies. However, during the PPG phase, further discussions will be conducted by the inter-ministerial working group to explore the opportunities to see, whether the public can access some of the information will be generated by the proposed data and information management system. Details activities are listed under Table B (INDICATIVE PROJECT DESCRIPTION SUMMARY). At this moment in the country, there is no data and information management system for ETF. However, under the GCF

readiness program, FAO is supporting the country for (a) institutional capacity and coordination mechanisms strengthening to govern and coordinate climate action and finance, (b) updating the country's GCF programming process, (c) direct access to climate finance entities nomination, and accreditation of direct access entities, (d) strengthening project pipeline.

The main body currently responsible for the GHG inventory in the Republic of Tajikistan is the National Agency for Hydrometeorology (Hydromet) of the Committee for Environmental Protection under the Government of the Republic of Tajikistan. The Agency for Statistics under the President of the Republic of Tajikistan plays a key role in collecting information on GHG emissions. All information from key ministries and departments is transferred to the Agency for Statistics under the Law on State Statistics. Besides, some of the relevant national organizations disseminate data and information through their website as   mentioned below:
?   Ministry of economic development and trade http://www.medt.tj
?   Ministry of agriculture http://www.moa.tj
?   Committee for environment protection under the Government of the Republic of Tajikistan http://hifzitabiat.tj/
?   Agency for Hydrometeorology http://www.meteo.tj/
?   Statistics Agency under the President of the Republic of Tajikistan http://www.stat.tj/

The proposed CBIT project will build on the data and coordination mechanism of the current GCF readiness project in Tajikistan. The CBIT project will also ensure that it closely works with the GCF readiness initiatives for climate finance-related data, and institutional arrangement. Besides, the CBIT project will build on the coordination mechanisms, capacity, knowledge management and M&E systems of the current GCF readiness project in Tajikistan. Lessons learned and experiences from ministries' data and information dissemination activities will also be considered.

78. This component will ensure data collection, archiving, and update protocol development for regular and systematic collection, documentation and archiving to ensure accuracy, consistency, and reliability of climate change-related data in the country. This system development will consult the ?A road map for establishing information systems for climate action and support? published under the collaboration of CBIT Global Coordination Platform (GEF funded)[75][75]. The activities under this component will be also based on the IPCC guidelines, FAO?s Estimating Greenhouse Gas Emissions in Agriculture: A Manual to Address Data Requirements for Developing Countries (2015), FAO tools and resources on Mitigation of Climate Change in Agriculture (MICCA) program, and other sectoral guidelines[76][76]. The activities under this component will be also conducted based on *Tracking Adaptation in Agricultural Sectors: Climate Change Adaptation Indicators* of FAO[77][77], and *Reporting adaptation through the biennial transparency report: A practical explanation of the guidance*[78][78].
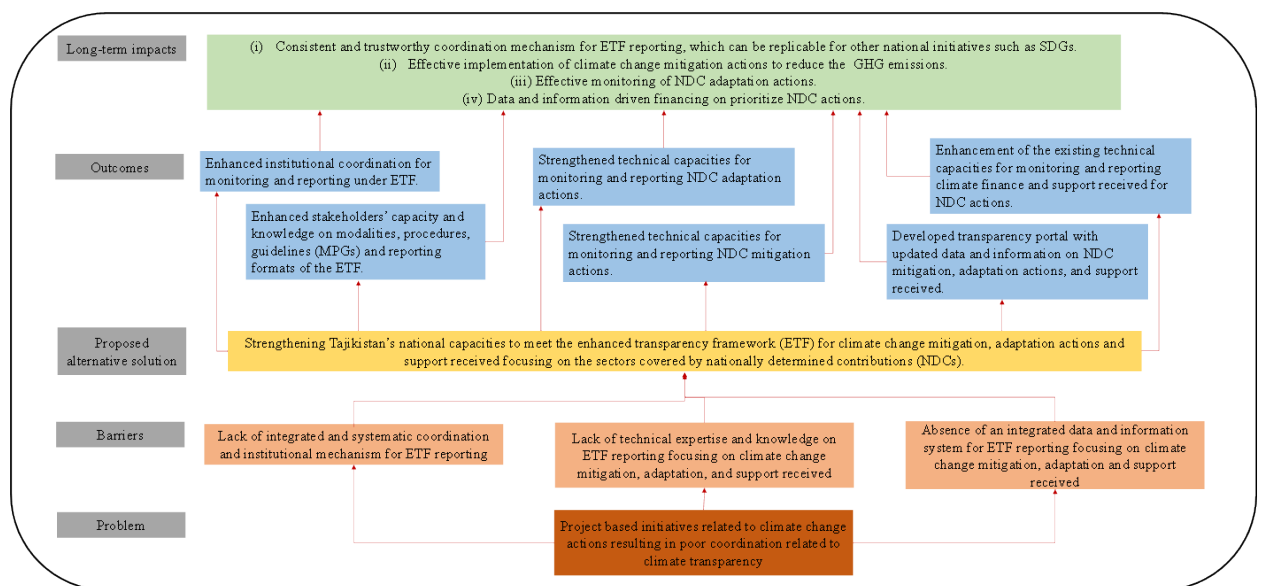
Figure 5: Theory of Change of Tajikistan CBIT project.

(4)   Alignment with GEF focal area and/or Impact Program strategies

79. The GEF Focal Area ?*CCM-3-8: Foster enabling conditions for mainstreaming mitigation concerns into sustainable development strategies through capacity building initiative for transparency*? supports the proposed CBIT project. GEF investment for this proposed project will enhance national and sectoral institutional and technical capacities to track the progress of national NDC actions on climate change mitigation and adaptation, as well as support received. Most importantly, it will ensure the transparency, accuracy, consistency, compatibility, and clarity of data and information related to climate change mitigation and adaptation. The technical

(5) INCREMENTAL COST REASONING

80. The country has shown some technical and institutional capacities in monitoring and reporting GHG emissions and removals, and adaptation over recent years through three national communications and the first BUR submission. There are still several barriers as discussed in paragraph 66 affecting the achievement of the national aspiration of transparent climate governance as mentioned in the updated NDC of the country. Such barriers will create hindrances, in the long run, to provide clearer inputs and tracking of the NDC action progress.

81. Without the proposed CBIT project, the national, as well as international aspiration of enhancing climate transparency, will be difficult to achieve. As one of the climate change vulnerable countries, existing technical and institutional capacity barriers affect the execution of priorities for visible NDC actions. Therefore, Tajikistan needs to focus on defining and implementing coordinated actions focusing on the ETF requirement of the Paris Agreement, and the systematization of tracking NDC actions. This project will give this opportunity to the country.

82. Table 12 presents how the existing barriers and constraints will be addressed by the expected output of the project with proposed GEF finance.

Table 12: Proposed CBIT project contribution addressing the existing barriers and constraints

Barriers and constraints	Outputs to address barriers and constraints	Expected contributions

Barriers and constraints	Outputs to address barriers and constraints	Expected contributions
This barrier is mentioned in barrier 1 of paragraph 66.	1.1.1 1.2.1	Robust institutional arrangements and knowledge management structures for gathering, coordinating and ensuring sector-specific information for ETF monitoring and reporting exercises.
Lack of coordination amongst relevant Ministries in the gathering of data, sharing, and information needed to comply with the ETF requirement to track the progress of NDC actions.		Increased awareness and understanding of ETF requirements.
Lack of institutional capacity to ensure data and information-driven decision-making for NDC actions.		
Lack of awareness among the stakeholders regarding the Paris Agreement, the ETF, and actions needed to monitor and tracking of mitigation and adaptation activities.		

Barriers and constraints	Outputs to address barriers and constraints	Expected contributions
These barriers are mentioned in barrier 2 of paragraph 66. Lack of activity data and local emission factors. Low technical capacity of national stakeholders on domestic MRV systems. Quality Assurance (QA)/Quality Control (QC) and verification processes are also limited. Lack of expertise and knowledge in the detailed calculation of the uncertainty of emissions.	2.3.1. 2.3.2. 2.3.3	Strong technical capacity and robust information to establish M&E systems for tracking adaptation actions. Strong technical capacity and robust technical capacities on MRV systems for tracking mitigation contributions. Strong technical capacity and robust technical capacities on MRV systems for tracking climate finance.
This barrier is mentioned in barrier 3 of paragraph 66. lack of comprehensive tools, knowledge, methodologies, and best practices to comply with ETF requirements.	3.1.1 3.1.2	Enhanced knowledge sharing and coordination to comply with the transparency requirement of ETF.

(6) GLOBAL BENEFITS

83. The CBIT project will have a real impact on the transparent and low carbon development in Tajikistan. Global benefits will be in the form of capacity development focusing on GHG

inventories and emission reductions, enhancing climate-resilient development and tracking the associated climate finance. The proposed project will create a coordination and monitoring framework at the institutional level for NDC mitigation and adaptation actions, and support received involving key national stakeholders. There will be an intermittent project-based approach for national communications and biennial transparency report (BTR) without this project, and probable duplication of activities under international funding for NDC actions focusing on climate change mitigation and adaptation.

84. The capacity of Tajikistan will be strengthened by focusing on a robust and functional MRV system through the proposed project in relation to the ETF of the Paris Agreement. This will ultimately provide benefits considering the overall environmental and SDGs at the national and global levels. The proposed transparency portal will enable the design and prioritization of cost-effective approaches to reduce GHG emissions.

85. The project will strengthen the technical and operational capacity of national experts focusing on data collection and analysis, quality assurance/quality control (QA/QC), uncertainty assessment, GHG inventory methodologies, and adaptation progress.

(7) INNOVATION, SUSTAINABILITY, AND SCALING UP

86. Innovation: The proposed is innovative because, the activities and expected results will solve the gaps highlighted in previous NCs, NDC and BUR of the country. A comprehensive coordination mechanism for enhanced transparency focusing on GHG inventory, mitigation action and support received will be developed with regard to ETF reporting. The project will ensure investment in dedicated climate change data and information management system, which will be innovative in the country. Besides, FAO will deploy the deeply rooted technical expertise in climate change issues bringing together best practices, tools and lessons learned. For example, FAO tools for the forestry sector (e.g. Open Foris and SEPAL) will be used for the forestry sector GHG inventory data.

87. Sustainability: The project benefits will be sustainable in the long term by addressing the current weaknesses of the national GHG inventory system and partnering with relevant institutions. The proposed activities will not be implemented alone by the project, rather it will be a close partnership of relevant institutions. Hence, the activities of this project will be institutionalized from the start of the partners? needs, and it will be continued based on the technical and infrastructural expertise developed under this project. Through the project, the country will strengthen the collaboration among the national institutions, and also with other global platforms (e.g. global CBIT platform, and two FAO CBIT global projects). Through these mechanisms, the country is expected to sustain the developed capacity and activities even after the project ends. Moreover, all the proposed training will develop the training materials (training proceedings, lecture slides and materials, and videos), which will be made available to the

relevant government official through the proposed data and information management system platform. The project will ensure the training program is organized under different components of the proposed CBIT project and will follow the Training of Trainers (ToT) approach so that the training can be replicated for the newly recruited staff. Similarly, under the ToT national/regional institution or university faculties will be included to disseminate the technical knowledge as university lecture/curricula.

88. Scaling up: The involvement of national key stakeholders from all relevant sectors will enable the management of adequate exit points of the project, avoid disruption, and will ensure scaling up from climate change-related issues to overall sustainability-related targets. The CBIT project will further lay foundation for Tajikistan's future climate change adaptation and mitigation initiatives. Results from the project will also be disseminated widely at the national and regional levels through the established information-sharing networks and forums with an aim to contribute to build regional capacity. Also, the knowledge materials will be made available through the proposed transparency portal. The master trainers through the ToT program and trained staff will disseminate their acquired knowledge through the established national institutional mechanism. Therefore, long term scaling up of the project benefits will be ensured through the established institutional arrangement through CBIT interventions.

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1b. Project Map and Coordinates

**Please provide geo-referenced information and map where the project interventions will take
place.**

Coordinates: <mark>39, 71</mark> https://www.geonames.org/1220409/republic-of-tajikistan.html

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities

Civil Society Organizations

Private Sector Entities

If none of the above, please explain why: Yes

1.   During the Project Identification Phase (PIF), consultation was done with the staff and representatives from the Hydromet. It was not possible to involve private sector entities and Civil Society Organizations (CSOs) in the consultation at this stage due to COVID-19 related restrictions and the availability of relevant personnel. But, during the PPG phase participatory and exhaustive consultation will be done involving the private sectors and NGOs. The stakeholders representing CSO, and private sector entities, along with other government agencies will be involved directly during the inception and validation workshop of the project proposal grant (PPG) phase, and also provide technical inputs to the project. The project executing entity, and FAO will use previously collected data/information through previous national communications and BUR, that involved the Indigenous Peoples, local communities, CSOs, private sector entities, etc. The project will invite the stakeholders, including CSOs, academia, and indigenous people to the validation and inception workshop, and working group discussions during the PPG stage.

The national universities can be involved in the project implementation and their potential will be explored during the PPG phase: Tajik Agrarian University, National University of Tajikistan, and the Technical University of Tajikistan. The Tajik Agrarian University trains specialists in the following areas that cover both the AFOLU and other sectors: agrochemistry and soil science, agronomy, breeding and seed production, ecology of agriculture, grassland, forestry, technical support for the storage and processing of livestock products, land management and rational use and protection of water resources. The university offers a total of 48 specialized subjects in nine faculties. The total number of teachers is 416, of which 56 are professors and 150 are candidates of science. Enhancing the capacity of the university, including the preparation of teaching aids and the equipment of educational laboratories, will help increase the qualified specialists needed for the ETF transition processes. The Tajik Agrarian University also has an educational facility located 20 km from the institution, where students conduct field studies and scientific research. Thus, for the AFOLU sector, the Tajik Agrarian University can be considered one of the key stakeholders. Another potential stakeholder focusing on the AFOLU sector is the Faculty of Biology of the Tajik National University.

The Tajik Technical University offers 55 specialities in seven faculties: energy, innovative technologies, transport, construction and architecture, information and communication technologies and engineering. The Tajik Technical University has about 500 teachers and over 12,000 students. The university can be considered one of the key stakeholders to support non-AFOLU sectors (e.g. energy, IPPU, waste) of the MRV system.

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement

2.   The key stakeholders and a brief description of their engagement will be as follows in Table 13. The stakeholders will represent all relevant sectors included in the NDC.

Table 13: STAKEHOLDERS AND THEIR RESPONSIBILITIES

Name of key stakeholders	Responsibility/expertise
1. State Agency for Hydrometeorology of the Committee for Environmental Protection of Tajikistan (Hydromet)	? National Focal Point for UNFCCC ? Project Executing Entity ? Liaising with other inter-ministerial agencies.
2. Other associated ministries important to comply with the ETF requirement for tracking the NDC actions: 2.1. Ministry of energy & water resources (MEWR). 2.2. The National Academy of Science (AoS). 2.3. Ministry of Finance (MoF). 2.4. Green Finance Project Implementation Unit, MoF. 2.5. Ministry of Economic Development and Trade (MoEDT). 2.6. Ministry of Agriculture (MoA). 2.7. Ministry of Industry & New Technology (MoINT). 2.8. Ministry of Transport (MoT). 2.9. Ministry of Foreign Affairs (MoFA) 2.10. Committee on Investments and State Property (CoISP). 2.11. Statistics Agency (SA). 2.12. Agency on Forestry (AoF). 2.13. State Unitary Enterprise for Residential Services (SUERS). 2.14. Agency on Land Reclamation and Irrigation (ALRI). 2.15. Committee for Environmental Protection (CEP).	? Focal persons and capacity building of relevant government officials. ? Institutional arrangement. ? Data collection, archiving, and analysis ? Decision-making and national investment ? Sectoral expertise

Name of key stakeholders	Responsibility/expertise
3.　　City authorities	?　　Data collection and analysis. ?　　Capacity building at regional and local levels.
4. Civil society organizations/Private sector (Water Users Associations, Dekhkan Farms Association, Cargo Transportation Companies, Private Passenger Transportation Companies, Barki Tojik, Pamir Energy). SUE State Department of Housing and Utilities (Khojagii Manzili Komunali) including branches in Dushanbe, Khujand and other big cities	?　　Data collection ?　　Capacity building
5.　　Local/ national and international NGOs (Kukhiston, Youth Ecological Center, Little Earth) related to Climate Change actions	?　　NGOs will be engaged in the implementation of the project, including the best practice analysis and validation and appraisal of the data/GHG information management system/AIMS.
6.　　National Universities (Tajik National University, Russian-Tajik Slavonic University, and Technological University of Tajikistan, Tajik Agrarian University).	?　　Activity data collection. ?　　Emission factors development. ?　　Data quality. ?　　Training and curriculum development. ?　　Reporting and Q/A

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

1.　The proposed CBIT project will conduct a gender analysis focusing on the different roles and responsibilities of women and men in climate transparency of the nation. Such participation will allow refining the emission factors and can help the nation to move from tier 1 to tier 2 emission factors to be used for the IPCC 2006 GHG inventory guideline. The proposed CBIT project will develop gender-responsive results-based indicators based on GEF?s Gender Equality Action Plan (GEAP)[1], Guidance to Advance Gender Equality IN GEF PROJECTS AND PROGRAMS[2], and GEF Policy on Gender Equality[3].

2.　This will ensure women?s participation in project design, implementation, and evaluation. Also, the project will ensure the representative women?s participation during the validation, and inception workshops, as well as in national consultation.

Hence, this project will ensure wherever possible to account and apply a gender-sensitive approach for data and information collection and analysis. Such analysis and evaluation will be presented and highlighted in project findings, annual and biannual reports, project publications, and knowledge materials.

3. The gender-sensitive approach for the implementation of the project will ensure the representative participation of women in the project team and for project activities implementation. This project will ensure that women will be given representative access to project capacity building and institutional strengthening activities. Agender-responsive results-based indicator focusing on mitigation and adaptation will allow this project to address appropriate responses to NDC actions focusing on climate change mitigation and adaptation activities. This project will utilize a different gender toolkit for national communications, and MRV developed by the Global Support Programme funded by GEF[4].

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[1] https://www.thegef.org/sites/default/files/publications/GEF_GenderEquality_CRA_lo-res_0.pdf

[2] https://www.thegef.org/sites/default/files/publications/GEF%20Guidance%20on%20Gender.pdf

[3] https://www.thegef.org/council-meeting-documents/policy-gender-equality

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Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources;

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women. Yes

Will the project?s results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes
Please briefly explain the rationale behind your answer.

1.   The private sector that is relevant for the project in Tajikistan are Water Users Associations, Dekhkan Farms, Cargo Transportation Companies, Private Passenger Transportation Companies, Barki Tojik, Pamir Energy, Faroz Private Company, State Department of Housing and Utilities (State Unitary Enterprise Khojagii Manzili Komunali) focusing on energy, industry, agriculture, forestry, and waste sectors. This project will involve major industries having a connection with GHG emissions, and removals, such as oil and gas, electricity production, forestry operation, waste, etc. During the PPG phase, above mentioned companies and potentially others will be consulted.

5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

1.   The project implementation may face difficulties due to limited capacities and lack of adequate GHG inventory data, climate finance tracking process, and lessons and good practices. To overcome such problem FAO will work closely with international initiatives, such as the CBIT Global Coordination Platform, and will deploy FAO?s long-standing expertise in GHG inventory preparation, forestry and land-use change, institutional coordination, database development, and information management system development. Additionally, through the relevant Global Support Program, Tajikistan will work closely with teams in different countries working on transparency. Such collaboration will be instrumental for data and information exchange, lessons learned, and the sharing of good practices.

2.   In addition, ongoing COVID-19 and future pandemic can hinder the technical capacity building process, inception, validation, national consultation, and technical group meeting, as well as day to day project activities. To overcome that type of obstacles, the project will ensure the use of online platform like Zoom/MS Team to conduct the day to day project activities, technical capacity building process, inception, validation, national consultation, and technical group meeting.

3.   The potentials risks and associated mitigation approach are highlighted in Table 14.

Table 14: Risks to CBIT project implementation and mitigation approaches to address them

Description of risks	Types of Risks	Probability and impact (1-5)	Measures to address the risks
COVID-19/other pandemic can slow down/non-progress of the project activities.	Global	P=4 I=5	Day to day project activities will be conducted considering work from home modality. In addition, the project will ensure the use of virtual platform, such as Zoom/MS Team for technical capacity building process, inception, validation, national consultation, and technical group meeting. Technical capacity building (e.g. training) activities will be recorded, uploaded and disseminated through information management system under this project.
Limited cooperation on data and information sharing among stakeholders	Organizational	P=2 I=3	MoU and data-sharing agreement among key national stakeholders to collect, archive, and manage the data and information.
Lack of coordination among ministries and local government.	Political	P=2 I=4	Specifying the roles and responsibilities of the national institution supported by the project guideline and arrangements.
Possible government change resulting in a lack of political will to support the project activities	Political	P=4 I=5	Combining the decision-makers for awareness-raising through a strong stakeholder involvement plan.
High staff turnover affecting the developed capacity and sustainability of the project.	Organizational	P=3 I=4	The project will focus on building capacity of a broad spectrum of stakeholders including government agencies, research institutions, and academia. This will help to mitigate the risk of high staff turnover. On the other hand, ToT program, established coordination mechanism, data management system, and established protocols will be institutionalized. The training materials and video will be disseminated through the established GHG information system. Hence, new staff will have the opportunity to be trained even after the project completion.

Description of risks	Types of Risks	Probability and impact (1-5)	Measures to address the risks
The incapability of the government after the project cycle to fund the ETF related activities	Financial	P=4 I=4	Utilize the resources available with baseline projects, and exploring the South-South cooperation for potential investment.
Gender mainstreaming hindered by resistance from local and national stakeholders	Cultural	P=3 I=2	Informing the key national stakeholders at the beginning regarding gender equality/representativeness as one of the key indicators of the project progress.
Climate change impacts on the NDC priority sectors, including agriculture, land-use, energy and waste sectors and the capacity to monitor and report under the Paris Agreement.	Natural	P=3 I=1	This is a capacity building project is targeted to institutional and human capacities to comply with ETF reporting requirements of the Paris Agreement. As such, climate change impacts do not pose a risk to the project interventions or implementation. Nonetheless, established protocols and guidelines of the government and national institutions will be followed in case of any adverse climatic events.

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

1. FAO will be the GEF Implementing Agency for this project. The Hydromet will be the Lead Executing Agency and will be responsible for the overall coordination and execution of the project, including monitoring and evaluation. Other stakeholders will be involved in the project implementation as described in Table 13.

2. A Project Steering Committee (PSC) will be established to provide strategic guidance and take decisions related to the project implementation including approval of project plan, budget, and revisions. The PSC will meet twice a year, or more frequently, if deemed appropriate at the start-up phase, to build common understanding and to ensure that the project is initiated and implemented properly. The PSC members will be represented by project implementing partners and will be detailed in PPG.

3. A Project Management Unit (PMU) will be housed within the Hydromet. It will be supported by thematic national and international experts, and a project admin and accountant. The PMU will be tasked with the day-to-day management of the project activities, as well as with financial and administrative reporting.

4.   The proposed CBIT project will also coordinate with the fourth national communication and submitted BUR implementation arrangement. Through the completion of this project, several challenges mentioned in paragraph 66 (e.g. data quality management, use of updated IPCC methodology, and institutional arrangement) will be addressed.

5.   The proposed project will coordinate with the global CBIT project: (i) to identify needs and gaps in national transparency systems, (ii) to share lessons learned through regional and global meetings, (iii) enabling knowledge sharing to facilitate transparency enhancements, and (iv) access to emerging practices, methodologies, and guidance on transparency of climate action and support. In addition, the project will also coordinate with the two FAO global CBIT projects: (i) Global capacity-building products towards enhanced transparency in the AFOLU sector (CBIT-AFOLU)[1], and (ii) Building global capacity to increase transparency in the forest sector (CBIT-Forest)[2]. The coordination will be in the form of access to emerging practices, methodologies, and guidance on transparency of AFOLU and Forestry sector.

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[1] https://www.fao.org/gef/projects/detail/en/c/1105975/

[2] https://www.fao.org/publications/card/en/c/CA6930EN/

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assesments under relevant conventions?

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

1.   The project is consistent with the national strategies as mentioned in section 3. The country is committed to ensure the progress of NDC Climate Change mitigation and adaptation, and continuously working since its ratification of the Climate Change Convention. Such national aspiration is reflected in the previous national communications and BUR, and updated NDC. The updated NDC of Tajikistan clearly states the necessity to strengthen the greenhouse gas inventory and national commitment to ensuring climate transparency. Therefore, the current project is consistent with national strategies, plans, and reports.

2.   This project is also consistent with the first Nationally Determined Contributions of Tajikistan (2017), previous national communications of the Republic of Tajikistan under the UNFCCC, and the first Biennial Report of the Republic of Tajikistan under the UNFCCC (2019), and updated NDC of Tajikistan. Apart from this, the proposed CBIT project is also in accordance with the following national strategies and policies as discussed below Table:

National strategies and policies	Key aspects
National development strategy (NDS) of the Republic of Tajikistan until 2030	It was adopted in 2016 and outlines the general directions of economic development, and the implementation measures that can help to reduce the impact of climate change, which include: i) the use of non-traditional (renewable) energy sources; ii) the minimization of the negative impact of the transportation on the environment and human health; iii) fostering the development of "green employment", expanding the environmental entrepreneurship and the environmental services market with the support of the state.
Mid-term development program (MDP) of the Republic of Tajikistan for the period of 2021-2025	It focuses on reducing the impact of climate change consists of expanding access to natural resources and their rational use, creating legal protection mechanisms, providing financial support and meeting the needs for new technologies, developing a green economy and preventing the risks of climate change. Development of renewable energy sources, modernization of all types of transport, construction of 6 hydroelectric power plants with a capacity of 700 kWh, reconstruction of 700 km of highways.
National strategy of the Republic of Tajikistan on disaster risk reduction for the period of 2019-2030	It focuses on to ensures access of all stakeholders to information on disaster risk, integrating disaster risk management into development processes, and improving mechanisms for disaster preparedness and response.
National strategy for adaptation to climate change in the Republic of Tajikistan until 2030	This is a national strategic document to achieve the goals stated in the Paris Agreement. This strategy summarizes the information needed to identify risks, threats and adaptive measures related to climate

change. The Government of the Republic of Tajikistan has prioritized four sectors that are both climate-sensitive and development priorities: i) energy; ii) water; iii) transport; and iv) agriculture.

The strategy outlines adaptive measures in key sectors of the economy and suggests mechanisms and sources of financing. |
| Agricultural Reform Program (2012-2020) | It focuses on the development and implementation of new agricultural technologies (for example, drought-resistant

crops), research, setting up a support system for the development of livestock and meeting the needs of farms in better breeds and pastures, and improved structure of sown areas for fodder crops. |

Comprehensive Program for the Development of Livestock in the Republic of Tajikistan for 2018-2022	It is related to the adaptation measures of the country and implies selection and improved breeding, cultivation technology and feeding rates, as well as increased productivity of pastures.
Program for the Development of Pastures for 2016-2020	It focused on increasing the stocks of pasture fodder, promoting an increase in the number of highly productive livestock, preparing land for sowing seeds, improving the condition of grazing lands, repairing and building roads and bridges, improving the condition of 1500 hectares of pastures, importing and producing grass seeds, and repairing livestock routes.
The Program for Reforming the Water Sector of the Republic of Tajikistan for 2016-2025	It focused on the development of a long-term basin plan for the use and protection of water resources in 5 river basins, the development of seasonal and annual plans for the distribution and management of water resources in river basins, the restoration of irrigation infrastructure and improvement of conditions for its maintenance and operation, and the introduction of new water-saving technologies.
Strategy for the Development of Industry in the Republic of Tajikistan until 2030	It focused on the introduction of new technologies related to reducing emissions of harmful substances into the atmosphere and saving raw materials and energy resources.
Draft Strategy for the Development of Forestry for the period 2016?2030	It focused on developing national forestry which includes the realization of institutional, legal and financial reforms; and the development of the forestry management framework. The goal of the Forest Strategy is the sustainable development of the sector by ensuring a balance of ecological, economic and social functions.

8. Knowledge Management

Outline the knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

1. The outcome of this project will be disseminated through existing global CBIT information-sharing networks, and at the national level through an established transparency portal. It will also cover climate change mitigation and adaptation data, and climate finance information. The project will also collaborate, wherever possible with South-South Network on MRV, and any other relevant scientific, and policy-based climate change networks in this region. Besides, the

knowledge materials generated from the project will be disseminated through the transparency portal. This will help to materialize the benefit of the project implementation through lessons learned, even after the project period. ==Additionally, the mode of the Training of Trainers will be widely used during the project implementation. Training of Trainers (ToT) is a key element of sustainability for this project to provide its potential for up-skilling the workforce in the most efficient way by enhancing local technical specialists. The training will include not only inter-ministerial collaboration but also provide the opportunity for the national research centres to share their technical knowledge and use their comparative advantage. These are crucial to transform the opportunities that ToT affords to national capacity to report and monitor the provisions under the Paris Agreement in the Republic of Tajikistan into the actual achievement of a training cascade that ultimately upskills the workforce. Thus, over time, up-skilling through training should become self-sustaining. Additionally, the enhancement of local trainers ensures that the curriculum content is culturally relevant and applicable. Finally, the long-term impact is particularly important with any education initiative, whereas trainers will be encouraged to modify these materials for their setting. Finally, the project will seek potential synergy with the regional networks such as the Climate Change and Sustainable Energy Program of the Regional Environmental Center for Central Asia[1], as well as the Regional Environmental Centre for Central Asia (CAREC)[2], as well as it will be very closely linked to the project on CBIT in Uzbekistan that is now at the PPG stage approval. Joint training and knowledge exchange will be conducted.==

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[1] https://ca-climate.org/eng/about/

[2] https://carececo.org/en/main/

9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
Low			

Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

1. The project has been categorized as ?low risk? when screened against FAO?s Environmental and Social Safeguards Screening Checklist?s set of 9 safeguards criteria. Since this is a capacity building project that aims to strengthen Tajikistan?s institutional and individual capacities to comply with the reporting requirements of the Paris Agreement, there are no anticipated environmental or social risks as a result of project intervention.

Supporting Documents

Upload available ESS supporting documents.

Title	Submitted
CC screening_CBIT _Tajikistan	

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Sheralizoda Bahodur	Chairman	Committee for Environmental Protection	6/8/2022

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

Coordinates:

39, 71 https://www.geonames.org/1220409/republic-of-tajikistan.html

https://www.un.org/geospatial/content/tajikistan The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.