



## **Initiative for Climate Action Transparency (ICAT)**

### **Tajikistan**

#### **Validation workshop report**





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## PREPARED UNDER

The Climate Action Transparency Initiative (ICAT), supported by Austria, Canada, Germany, Italy and the Children's Investment Fund Foundation.



Supported by:



on the basis of a decision  
by the German Bundestag



**Environment and  
Climate Change Canada**

**Environnement et  
Changement climatique Canada**

The ICAT secretariat is managed and maintained by the United Nations Office for Project Services (UNOPS).





## *Validation workshop report*

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Report submitted on: February 11, 2025

Workshop held: 18 December 2024

Workshop venue: Agency for Hydrometeorology, Dushanbe, Tajikistan

### **Objectives of the workshop**

The main objective of this workshop is to review the findings of the greenhouse gas (GHG) inventory in Tajikistan, discuss the methodology used for data collection and estimates, validate the accuracy and completeness of the inventory, gather insights from experts, discuss lessons learned, and to propose improvements for future greenhouse inventory compilation.

### **Workshop conducted by:**

Matej Gasperic, Program Director, Mitigation, Greenhouse Gas Management Institute



<i>Introduction and overview</i> .....	5
<i>General project lessons</i> .....	5
<b>Initial GHG Inventory Development:</b> .....	5
<b>Training and Capacity Building:</b> .....	5
<b>Identification of Data Gaps and Archival:</b> .....	5
<b>Review of National Reporting Framework:</b> .....	6
<b>Collaboration with Experts:</b> .....	6
<b>Data Collection and Methodologies for Improvement:</b> .....	6
<b>Strengthening of MRV Systems:</b> .....	6
<b>Preparation for Future BTR Submissions:</b> .....	6
<i>Lessons learned by sector</i> .....	7
<b>Energy sector</b> .....	7
<b>Industrial Processes and Product Use sector</b> .....	7
<b>Agriculture Sector</b> .....	8
<b>Waste sector</b> .....	9
<b>Land Use, Land Use Change and Forestry (LULUCF) Sector</b> .....	10
<i>BTR validation</i> .....	11
<i>Conclusion</i> .....	11
<i>Annex</i> .....	12
<b>Workshop Agenda</b> .....	12
<b>Workshop Attendance List</b> .....	12



## Introduction and overview

The Validation Workshop of the ICAT project aimed at reviewing project results. The project scope focused on increasing capacity to ensure accurate, complete, and transparent GHG emissions reporting by the country. As part of Tajikistan's efforts to enhance its climate action and reporting under the Paris Agreement, this workshop brought together the project team to review, validate, and improve the GHG inventory and BTR before they are submitted to the United Nations Framework Convention on Climate Change (UNFCCC).

The primary objective of the workshop is to verify and validate the data included in Tajikistan's GHG inventory and BTR and discuss lessons learned over the course of the project. This includes checking the methodology used, the accuracy of emissions data, and ensuring that the country's GHG emissions are reported in accordance with international standards, such as the IPCC guidelines and the Paris Agreement's Enhanced Transparency Framework.

The workshop helped to enhance the transparency of Tajikistan's climate reporting process. By validating the results of the project and reflecting on lessons learned, the workshop fostered greater transparency and accountability in the country's climate action efforts and improved the country's understanding of the technical capacity required to meeting international obligations under the Paris Agreement.

## General project lessons

The team reflected on project activities, challenges addressed and lessons. These are summarized below.

### **Initial GHG Inventory Development:**

Tajikistan country experts prepared the country's GHG inventory, covering emissions from various sectors such as energy, industry, land use, land-use change and forestry (LULUCF), agriculture, and waste. This inventory is the starting point for future improvements and updates.

### **Training and Capacity Building:**

Capacity-building sessions were conducted to train key stakeholders, including government officials and environmental experts, in the processes and methodologies required for GHG inventory compilation. This provided foundational knowledge for Tajikistan experts to prepare the inventory and capacity to manage and update the inventory independently in the future.

### **Identification of Data Gaps and Archival:**

During the project, an important activity was identifying data gaps or inconsistencies in Tajikistan's past GHG inventories. There was no repository of activity data used and it had to be compiled prior to the beginning of the inventory compilation process. Datasets were obtained from the Ministry of Statistics as well as national archives and individual ministries involved in sectoral data collection. Activity data was archived by the team, and identified data gaps were filled in using supplementary international datasets, via interpolation or additional documentation provided by government ministries. This ensures that future inventory



compilation cycles can rely on the archive and strategically fill in data gaps.

### **Review of National Reporting Framework:**

The national reporting framework for Tajikistan's emissions underwent a review, ensuring that it aligns with international standards (e.g., the IPCC 2006 Guidelines for National Greenhouse Gas Inventories). This would help ensure that the inventory complies with reporting requirements under the Paris Agreement.

### **Collaboration with Experts:**

The workshop have facilitated collaboration between Tajikistan and international GHG inventory experts. External experts provided insights on best practices and shared experiences from other countries that have submitted BTRs. The communication during the project helped:

- Strengthen coordination between government agencies: Improve collaboration was achieved between the ministries of agriculture and environment to more accurately account for emissions in the agricultural sector.
- Strengthen coordination across government agencies overseeing other sectors that impact GHG emissions and removals from land: Collaboration was facilitated between ministries of agriculture, environment, and forestry to improve accounting of greenhouse gas emissions and removals.

### **Data Collection and Methodologies for Improvement:**

Tajikistan identified areas that would benefit from enhanced data collection methods in across sectors to improve future estimates of GHG emissions. This could involve aligning sector-specific data sources, updating emission factors, and implementing better data management systems.

### **Strengthening of MRV Systems:**

As part of the project, Tajikistan started to establish its Monitoring, Reporting, and Verification (MRV) systems to improve the accuracy and transparency of its emissions reporting. This involved ensuring that the country has proper processes in place for monitoring emissions and verifying the data submitted in the BTR.

### **Preparation for Future BTR Submissions:**

Tajikistan reviewed the timelines and reporting requirements for the Biennial Transparency Report under the Paris Agreement, making preparations to meet future deadlines and submit comprehensive, accurate, and transparent emissions data.

The project focused on building the foundation for Tajikistan's long-term climate transparency efforts, focusing on improving GHG inventories and associated reporting processes to comply with international climate agreements. The work completed under this project is an essential component of Tajikistan's efforts to build a robust, transparent, and accountable climate reporting system. It helps ensure that the country is well-prepared to report its progress and enhance its climate actions in support of global climate goals.



## Lessons learned by sector

### Energy sector

The project allowed Tajikistan to implement and identify future improvements in the energy sector, including the following:

#### Data collection and analysis:

Data on energy consumption, including fuels used in transport, industry, electricity generation and heating, were collected.

Greenhouse gas emissions from various sources, such as coal, natural gas and hydroelectric power plants, were estimated.

#### Identification of data gaps:

Data gaps were identified, for example, on fuel consumption in the transport sector and energy expenditure at the local level.

#### Lessons learned:

Challenges in data quality: Lack of accurate and up-to-date data on energy consumption, especially in the transport sector and in some regions of the country.

Challenges in estimating emissions from transport: Lack of detailed information on vehicle fleet composition and fuel consumption, making it difficult to accurately calculate emissions.

Poor coordination between sectors: Insufficient coordination between ministries responsible for energy, environment and economy, which affects the effectiveness of data collection.

Education and training: Regular training for specialists on improving data quality and reporting in the energy sector.

#### Potential improvements:

Strengthening data collection systems: Establishing a more centralized system for regularly collecting and updating energy consumption data.

Improving emissions calculations: Refining emission factors to account for the specifics of Tajikistan's energy sector, including hydropower.

These improvements will help increase the accuracy and transparency of greenhouse gas emissions inventories in the energy sector, which will contribute to meeting climate reporting commitments under the Paris Agreement.

### Industrial Processes and Product Use sector

Within the framework of the project for Tajikistan, work was carried out to improve the inventory of greenhouse gas emissions in the industrial process and product use (IPPU) sector, including the following key activities:



### **Data collection and analysis:**

Data on emissions from industrial processes such as cement production, chemical industry, metallurgy and others were collected.

New categories in the sector were estimated, , such as the use of freons in refrigeration systems and other chemicals.

### **Identification of data gaps:**

Gaps in industrial production and product use data were identified, such as lack of information on production capacity and chemical use.

### **Lessons learned:**

Need for better data: Lack of accurate and up-to-date data on production processes and product use, making it difficult to calculate emissions from this sector.

Difficulty in tracking all emission sources: Some emission sources, such as the use of certain chemicals or waste, are not adequately accounted for.

Underestimation of the impact of small and medium enterprises: Emissions from small and medium enterprises, which are not always included in national data, can also account for a significant share of emissions.

### **Potential improvements:**

Strengthen data collection: Develop more accurate methods for collecting data on production capacity, production volumes and use of chemicals at the national level.

Improved emission calculations: Use more detailed emission factors and methods adapted to the specifics of Tajikistan to more accurately estimate emissions from this sector.

Inclusion of small and medium enterprises: Develop a system for collecting activity data to support accounting of emissions from small and medium enterprises, with the aim of increasing the completeness of the inventory.

Improved coordination between sectors: Establish better coordination between ministries and enterprises to improve data collection and accounting of emissions from industry.

## **Agriculture Sector**

The project for Tajikistan has worked to improve the inventory of greenhouse gas emissions in the agricultural sector, including the following key activities:

### **Data collection and analysis:**

Greenhouse gas emissions from agricultural processes such as fertilizer use, livestock production and manure management, and crop cultivation were estimated. Improved data on fertilizer use and disaggregated livestock categories were implemented in the inventory.

### **Identification of data gaps:**



Gaps in data on fertilizer use, livestock numbers and agricultural practices were identified, requiring further improvements in the data collection systems.

### **Lessons learned:**

**Lack of accurate data on agricultural practices:** Lack of accurate data on fertilizer use, livestock numbers, and other agricultural processes makes it difficult to calculate emissions.

**Challenges in accounting for emissions from manure:** Methane emissions from the decomposition of organic waste, such as manure, are not always accounted for, reducing the accuracy of inventories.

**Inefficiencies in collecting data at the local level:** Problems with systematically collecting data on smallholder farmers and their fertilizer and feed use practices.

### **Potential improvements:**

**Strengthen data collection systems:** Develop an effective system for collecting and updating data on agricultural practices, including fertilizer types and volumes, livestock numbers, and manure management methods.

**Use accurate emission calculation methods:** Apply more accurate emission factors to calculate emissions from various agricultural sources, including manure and fertilizer use.

**Increase local farmer engagement:** Increase farmers' awareness of the need to account for emissions and improve field data collection to improve inventory completeness.

## **Waste sector**

Within the framework of the project for Tajikistan, work was carried out to improve the inventory of greenhouse gas emissions in the waste sector, including the following key activities:

### **Data collection and analysis:**

Greenhouse gas emissions from different types of waste, such as municipal solid waste and wastewater were estimated.

Emissions from biological treatment of solid waste and waste incineration were not estimated until this inventory.

### **Identification of data gaps:**

Gaps in data on waste generation, disposal and recycling were identified, as well as insufficient attention to emissions from small and informal landfills.

### **Lessons learned:**

**Lack of waste recycling data:** Lack of accurate information on the amount of waste recycled, making it difficult to accurately estimate emissions associated with recycling and disposal.

**Insufficient landfill documentation:** An important lesson learned was the problem with



monitoring landfills, especially informal and small landfills, which may not be fully accounted for in inventories.

Ineffective waste data collection: Insufficient waste recycling data collection at local government and company levels.

### **Potential improvements:**

Strengthen data collection: Establish a centralized system to regularly collect data on the quantity and type of waste, its recycling and disposal.

Inventory of small-scale landfills and informal emission sources: Develop methods to account for emissions from informal landfills and more accurately monitor landfills on site.

Introduce a system for accounting of recycled waste: Improve the system for accounting of recycled waste to more accurately determine its impact on greenhouse gas emissions.

Increase coordination between local and national authorities: Establish better coordination between different levels of government to improve accounting of emissions from waste.

### **Land Use, Land Use Change and Forestry (LULUCF) Sector**

The project for Tajikistan has worked to improve the inventory of greenhouse gas emissions in the land use, land-use change and forestry (LULUCF) sector, including the following key activities:

#### **Data collection and analysis:**

Data were collected on greenhouse gas emissions and removals from land use changes such as deforestation, land degradation, ecosystem restoration and land use for agriculture. Land use and land use change matrices were developed for the first time in the inventory, accounting for all land in the country.

#### **Identification of data gaps:**

Gaps in data on land change dynamics were identified, including a lack of detailed information on the area of forest clearing, land condition change, and agricultural land types.

#### **Lessons learned:**

Need to improve land data: Insufficient accuracy and timeliness of data on land-use change, such as the area of cleared forests, cultivated agricultural land, and restored ecosystems.

Challenges in accounting for emissions from agriculture: Lack of data on tillage practices and fertilizer use makes it difficult to accurately estimate greenhouse gas emissions from cropland.

Underestimation of carbon sequestration: Carbon sequestration by forests and soils is not always taken into account, reducing the accuracy of inventories.

#### **Potential improvements:**

Strengthen data collection systems: Develop a centralized system to regularly collect and



update data on land-use change, deforestation, and agricultural practices.

Improving the accuracy of forest and soil data: Improving methods for monitoring forest and agricultural land conditions, including using satellite data to assess land-use change.

Carbon sequestration accounting: Develop and implement more accurate methods for accounting for carbon sequestration from forests, agricultural land, and ecosystem restoration.

## BTR validation

BTR validation in Tajikistan is an important part of the country's climate change reporting process. It is worth noting that this was the first submission by Tajikistan under the System for Transparency Reporting (STR), and the country successfully met the established deadlines. In preparing the report, Tajikistan applied flexibility in assessing the mitigation of policy impacts and measures, as well as in reporting forecasts. These aspects will be further addressed in the next reporting cycle.

## Conclusion

This project played a vital role in enhancing the accuracy, consistency, and transparency of Tajikistan's GHG Inventory and BTR. A core team of national experts were trained on IPCC methods required to compile a national inventory creating a foundation for future inventory cycles. By validating emissions data, reviewing methodologies, ensuring the documentation of mitigation actions, and recommending improvements for data collection and reporting systems, these experts helped Tajikistan align its climate reporting with international transparency frameworks under the Paris Agreement.

The project results ensure that Tajikistan's GHG inventory is reliable and comprehensive, presenting an accurate picture of the country's emissions across sectors.

By working collaboratively across sectors, the experts have not only contributed to Tajikistan's GHG Inventory and BTR but have also paved the way for improved future climate action, ensuring that Tajikistan continues to make measurable progress in addressing climate change and contributing to global climate goals.

## Annex

### Workshop Agenda

- 1) Validation of GHG Inventory
  - a) The GHG inventory is reviewed to confirm that the reported emissions data are accurate and reflect the latest available information.
  - b) Experts discuss any challenges or limitations in the data collection process, and consider suggestions for improvement.
- 2) Validation of the Biennial Transparency Report (BTR)
- 3) Documentation of lessons learned and potential future improvements

### Workshop Attendance List

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