

# Enhancing National Greenhouse Gas Inventory Management System for Nepal

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-- Training Workshop --

Time: **14:00 - 16:00 NST** | Date: **August 27, 2023** | Format: **Online**

## Background

Nepal is an active participant in international efforts to combat climate change and has been affiliated with the United Nations Framework Convention on Climate Change (UNFCCC) since its inception in 1992. As a signatory to the Paris Agreement, Nepal has committed to reducing its greenhouse gas emissions and adapting to the impacts of climate change. Additionally, Nepal ratified the Kyoto Protocol, which aimed to reduce global greenhouse gas emissions through binding targets. Country has successfully submitted three national communications and greenhouse gas inventories to the UNFCCC, as part of its climate change reporting obligations. These reports provide important information on Nepal's mitigation and adaptation measures, as well as its progress in addressing climate change impacts at the national level. As part of its efforts to transition to the ETF referred to in Article 13 of the Paris Agreement, the Global Environment Facility (GEF) also approved the CBIT and first BTR project in the country.

A national inventory management system is a critical tool for countries to prepare national greenhouse gas (GHG) inventory which is a key element of the national inventory report (NIR), national communication (NC) and biennial transparency report (BTR). As required by decision 18/CMA.1, each Party shall report estimates of emissions and removals for all categories, gases and carbon pools considered in the GHG inventory throughout the reported period on a gas-by-gas basis in units of mass at the most disaggregated level, in accordance with the 2006 IPCC guidelines using the common reporting tables.

A robust national inventory management system provides a centralized platform for data collection, processing, and analysis, which can improve data quality, save time and costs, increase transparency, ensure compliance with international standards and guidelines, and inform policy development. It can help countries monitor and evaluate the effectiveness of their climate policies and identify areas where further action is needed. Furthermore, a transparent inventory management system can help to attract international and private sector investment in climate solutions by providing clear and reliable data on emissions reductions and demonstrating a country's commitment to sustainable development. This concept note outlines the steps and details for enhancing and developing a robust national greenhouse gas inventory management system for Nepal.

## Introduction and Approach

Nepal currently has inventory expert groups for the four areas of the GHG inventory, which are Energy; Industrial Processes and Product Use; Agriculture, Forestry, and Other Land Use; and Waste. These expert groups are in charge of coordinating with the Government of Nepal and all relevant stakeholders who are directly or indirectly involved in the preparation of the national GHG inventory. The country has developed three-stage frameworks for the preparation of the national GHG inventory, with the first stage involving the identification of potential data providers, the assessment of relevant literature, and the mapping of relevant institutions. The second phase involves organising an inception workshop, collecting data, processing, and calculating data for all categories, ensuring data quality, and drafting a report based on the final numbers. In the third phase, a final report was drafted following a consultation workshop and external reviews.

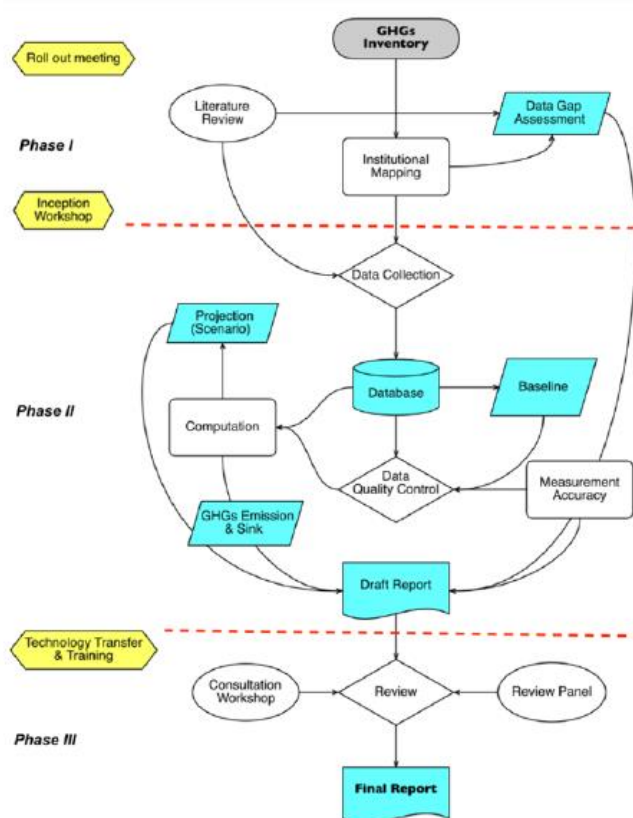


Figure 1: Nepal's current implementation framework

The GHG inventory was conducted in accordance with the 2006 IPCC Guidelines for reporting National Communications from Non-Annex I Parties and other relevant documents, primarily utilising the Tier 1 approach due to the lack of detailed disaggregated data for a large number of activities in these four sectors. In the last national communication country has mentioned that they have performed estimation of all mandatory gases, quality assurance and quality control measures, key category analysis, the quantification of the uncertainties associated with the estimates. However, the results of above assessments were not included in the GHG

inventory chapter of the third national communication. Country has also performed GHG emission projection for 2030 under various scenarios using LEAP modelling software. There are numbers of sector-wise different institutions were involved in the estimation of GHG inventory which can be shown in following table.

Table 1: Institutions involved in Nepal's GHG inventory preparation

<b>National Focal Agency - Ministry of Forests and Environment</b>			
<b>Energy</b>	<b>IPPU</b>	<b>AFOLU</b>	<b>Waste</b>
CBS-Central Bureau of Statistics	CBS-Central Bureau of Statistics	CBS-Central Bureau of Statistics	ADB-Agricultural Development Bank
DoR-Department of Roads	DoC-Department of Customs	DFRS-Department of Forest Research and Survey	CBS-Central Bureau of Statistics
DoTM-Department of Transport Management	MoF-Ministry of Finance	DHM-Department of Hydrology and Meteorology	SWMRMC – Solid Waste Management and Resource Mobilization Centre
GIZ-German Society for International Cooperation	MoPE-Ministry of Population and Environment	DNPWC-Department of National Parks and Wildlife Conservation	
MoCTCA-Ministry of Culture, Tourism and Civil Aviation	MoSTE-Ministry of Science, Technology and Environment	DoA-Department of Agriculture	SWMTSC-Solid Waste Management Technical Support Centre
MoE-Ministry of Energy	NEEP-Nepal Energy Efficiency Programme	DoF-Department of Forest	
MoEWRI Ministry of Energy, Water Resources and Irrigation	TEPC-Trade and Export Promotion Centre	ICIMOD-International Centre for Integrated Mountain Development	
NEA-Nepal Electricity Authority	UCIL-Udayapur Cement Industries Limited	MoAD-Ministry of Agricultural Development	
NOC-Nepal Oil Corporation	USGS-United States Geological Survey	MoALD-Ministry of Agriculture and Livestock Development	
WECS-Water and energy Commission Secretariat		MoFSC-Ministry of Forest and Soil Conservation	

Before diving into the proposed steps, it is essential to assess Nepal's current circumstances regarding GHG inventory. This analysis will help identify existing strengths and gaps, informing the development of an effective system.

*Data Availability and Collection:* Evaluate the availability and accessibility of relevant data sources, such as energy consumption, industrial processes, agriculture, waste management, and land-use change. Identify potential data gaps and challenges related to data collection, quality assurance, and reporting.

*Institutional Capacity:* Assess the existing institutional framework for GHG inventory management, including relevant ministries, departments, and agencies responsible for data collection, reporting, and coordination. Determine the capacity gaps in terms of expertise, resources, and technical infrastructure required for robust inventory management.

*Stakeholder Engagement:* Identify key stakeholders, including government entities, research institutions, NGOs, and private sector organizations, involved in climate change and GHG mitigation activities. Assess the level of engagement, collaboration, and coordination among stakeholders for data sharing and reporting purposes.

*International Commitments:* Evaluate and understand the reporting requirements, deadlines, and formats to align the national inventory management system accordingly.

### **Proposed Steps for Developing the GHG Inventory Management System:**

Based on the analysis of Nepal's current circumstances, the following steps are proposed for developing a robust national GHG inventory management system:

*Establish Governance Structure:* Formulate a dedicated governance structure or strengthen the existing one to oversee the development and implementation of the GHG inventory management system. This structure should involve relevant ministries, departments, and agencies to ensure cross-sectoral collaboration and coordination.

*Capacity Building:* Identify capacity building needs among government officials, technical experts, and other stakeholders involved in GHG inventory management. Conduct training programs, workshops, and knowledge-sharing initiatives to enhance technical expertise, data collection methodologies, and quality assurance practices.

*Data Management:* Design a centralized data management system that integrates existing data sources and establishes standardized protocols for data collection, processing, and storage. Implement data validation and quality control measures to ensure accuracy and reliability.

*Methodologies and Emission Factors:* Develop comprehensive methodologies and emission factors for estimating GHG emissions and removals across various sectors. Adapt international best practices while considering Nepal's specific circumstances. Provide clear guidelines and documentation to facilitate consistent and accurate calculations.

*Reporting Framework:* Establish a reporting framework that aligns with international reporting requirements, including the biennial transparency report. Define reporting formats,

templates, and timelines, ensuring compatibility with international standards while considering Nepal's specific reporting needs.

*Verification and Review:* Integrate independent verification and review mechanisms to ensure the credibility and accuracy of the reported GHG inventories. Consider establishing partnerships with international experts or organizations to provide technical assistance and conduct periodic reviews.

*Knowledge Exchange and Awareness:* Foster knowledge exchange platforms, workshops, and capacity-building initiatives to promote understanding of the GHG inventory management system among stakeholders. Raise awareness about the importance of GHG inventories, their role in climate change mitigation, and the benefits of transparent reporting.

*Timeline and Resources:* Develop a realistic timeline, taking into account the complexity of the tasks involved and the available resources. Allocate adequate financial, technical, and human resources to implement the proposed steps effectively. Seek external funding and partnerships, leveraging international support for capacity building and technical assistance.

*Monitoring and Evaluation:* Implement a monitoring and evaluation framework to track progress, identify challenges, and assess the effectiveness of the GHG inventory management system. Regularly review and update the system based on emerging best practices, evolving reporting requirements, and technological advancements.

By following above steps, Nepal can establish a robust national GHG inventory management system, enabling the preparation of accurate and transparent biennial transparency reports. This system will support evidence-based decision-making, effective climate change mitigation, and adaptation strategies, and contribute to Nepal's international commitments in combating climate change.

## Objective

The goal is to enhance technical understanding of country experts responsible for preparing GHG inventory and national reporting under the ETF of Paris Agreement. Discussion on experiences, lessons learned and common challenges in different sectors.

The comprehensive national inventory management system will enable accurate measurement, reporting, and verification of GHG emissions and removals. This system will lay the foundation for preparing Nepal's first biennial transparency report, enhancing transparency, and supporting effective climate change mitigation and adaptation strategies.

## Target Audience

The virtual exchange will bring together relevant national transparency stakeholders, such as coordinators of NC, BUR and BTR, senior experts from the national institutions, organisations and agencies dealing with climate change reporting who supervise the establishment of MRV

and coordination of GHG inventory preparation for various sectors, including sector-specific experts. The meeting will be held **in English**.

## Duration

The meeting will last **2 hours** with sufficient timing dedicated to discussion and Q&A sessions.

## Proposed Agenda

Nepal Time	Session
14:00 - 14:05	<b>Opening session, introduction and welcoming remarks</b> <b>Speaker:</b> Mr. Jaypalsinh Chauhan, Asia Transparency Network Coordinator <b>Mentimeter &amp; Group Photo</b>
14:05 - 14:25	<b>ETFs and MPGs: Reporting requirement under Paris Agreement for GHG Inventory</b> (including Q&A) <b>Speaker:</b> Mr. Jaypalsinh Chauhan, Asia Transparency Network Coordinator
14:25 - 14:40	<b>Importance of the National Inventory Management System</b> (including Q&A) <b>Speaker:</b> Mr. Jaypalsinh Chauhan, Asia Transparency Network Coordinator
14:40 - 15:00	<b>Nepal's Existing GHG Inventory arrangement and Way Forward</b> <b>Speaker:</b> Mr. Shiva Khanal, Ministry of Forests and Environment, Government of Nepal
15:00 - 15:25	<b>Group Discussion about data gaps and challenges</b>
15:25 - 15:45	<b>Nepal's CBIT Project: Roadmap to Transparency in GHG Inventory</b> (including Q&A) <b>Speaker:</b> Mr. Rajan Thapa, National Project Manager, WWF US
15:45 - 15:55	<b>International Examples of National Inventory Management System</b> (including Q&A) <b>Speaker:</b> Mr. Jaypalsinh Chauhan, Asia Transparency Network Coordinator
15:55 - 16:00	<b>Wrap-up and closing remarks, Mentimeter</b>

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