



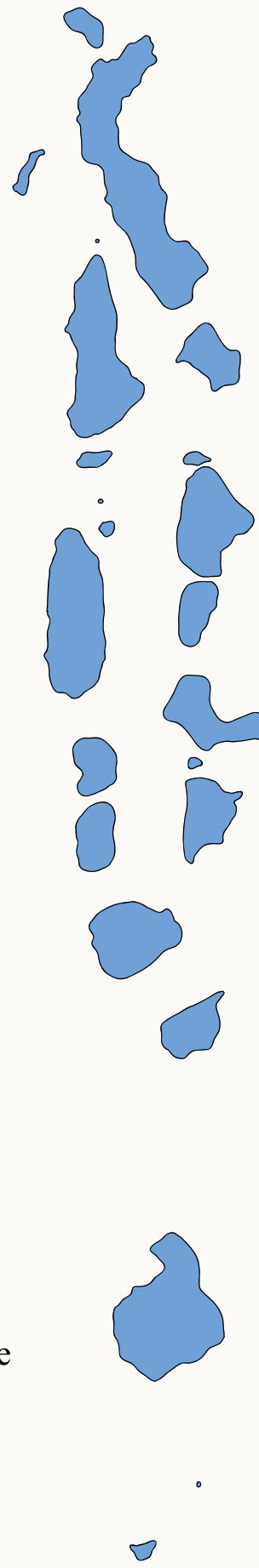
**Ministry of Climate Change,
Environment and Energy**

Stock-take and Design Option Report on the Institutional Arrangements for GHG inventory

Consultancy Services to Review and
Strengthen the Institutional Arrangements for
Climate Change Reporting

CBIT Maldives

Capacity Building for Improved Transparency of Climate Change
Mitigation and Adaptation Actions in the Maldives





Ministry of Environment, Climate Change and Technology
Male', Republic of Maldives

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*Capacity Strengthening for Improved Transparency of
Climate Change Mitigation and Adaptation Actions in
the Maldives Project*





Ministry of Environment, Climate Change and Technology

Capacity Strengthening for Improved
Transparency of Climate Change
Mitigation and Adaptation Actions in
the Maldives Project (CBIT Maldives)



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LIST OF ACRONYMS AND ABBREVIATIONS

BUR1	Initial Biennial Update Report
BTR	Biennial Transparency Report
FNC	First National Communications
GHG	Greenhouse Gases
MACL	Maldives Airports Company Limited
MEA	Maldives Energy Authority
MECCT	Ministry of Environment, Climate Change and Technology
MIFCO	Maldives Industrial Fisheries Company
MNU	Maldives National University
MPL	Maldives Ports Limited
MTCC	Maldives Transport and Contracting Company
NBS	National Bureau of Statistics
SNC	Second National Communications
STELCO	State Electric Company Limited
TNC	Third National Communications
WAMCO	Waste Management Corporation
URA	Utilities Regulatory Authority

EXECUTIVE SUMMARY

Maldives has compiled and reported three GHG inventories as part of their national climate change reports to United Nations Framework Convention on Climate Change (UNFCCC). Different institutions collaborated for the GHG inventory compilation in the form of institutional arrangements. However, these institutional arrangements were established on an ad-hoc basis. This report aims to provide detailed information on institutional arrangements for GHG inventory compilation.

Maldives compiled GHG inventories for year 1994, 2011 and 2015 and reported in national communications and Biennial Update Report. Some barriers and constraints were identified in terms of data availability and quality and Institutional capacity and human resources. In addition, the institutional arrangement for GHG inventory compilation for Initial Biennial Update Report has been described in this report as a case study.

Furthermore, this report provides three design options for institutional arrangements. The first design option involves GHG inventory compilation works assigned to an academic institution. Second design option involves sectorial GHG inventory compilation in which Utilities Regulatory Authority (URA) and Pollution prevention and Waste Management Department of Ministry of Environment, Climate change and Technology assumes the roles of sectorial inventory compiler for energy and waste sector respectively. The third design option for institutional arrangement involves GHG compilation by Climate Change Directorate (CCD) of MECCT.

From the evaluation of the three design options, design option 3 is considered to be the most appropriate institutional arrangement for GHG inventory compilation in Maldives. CCD of MECCT will employ permanent civil service staff for GHG inventory compilation. Capacity building of these civil service staff will be done by external consultants. CCD will establish GHG inventory working groups which will consist of technical staff from different data providers. Furthermore, few recommendations made by stakeholders during consultations has been enlisted. They include;

- Even though establishment of GHG inventory working group is essential, meeting shall be limited to few meetings per year.
- Participants of the GHG inventory working group shall be technical staff rather than political appointees.
- Clear definition of roles and responsibilities for each stakeholder for GHG inventory process should be established.
- Capacity building training on GHG inventory compilation is crucial for CCD staff and stakeholder agencies.
- MOUs for data sharing and Non-Disclosure Agreements are essential.

INTRODUCTION

This report is developed as a part of the consultancy project to review and strengthen the institutional arrangements for climate change reporting. The main objective of this report is to stock-take the existing institutional arrangements for Greenhouse Gas (GHG) inventory compilation. In addition, this report will identify the room for improvement for the existing institutional arrangement for GHG inventory compilation and will make recommendations for the improvement of GHG inventory compilation for future endeavors.

This report is aimed to conduct the following;

- (1) Review the findings of the stocktaking exercise done for the Maldives First Biennial Update Report and assess its relevance and any potential gaps related to role, responsibilities, resources, personnel, legal frameworks and data collection capacity of key line ministries and agencies.
- (2) Develop design options for institutional arrangements and finalizing the design through consultations. The institutional arrangements will outline clear and detailed institutional roles, mandates and responsibilities of involved ministries, agencies and external data providers for data production, collection and reporting. In addition, this will include the human resource requirements and Terms of Reference (TOR) for operating the institutional arrangements.

This report outlines as follows: (1) background information (Roles and Responsibilities of stakeholders) on the institutional arrangements for GHG inventory compilation will be provided. (2) Identified institutional and legal barriers for GHG inventory compilation will be described. (3) Identified room for improvement for institutional arrangement for GHG inventory compilation including recommendations.

EXISTING INSTITUTIONAL ARRANGEMENT FOR GHG INVENTORY COMPILATION

Maldives reported three GHG inventories so far to the UNFCCC. For the first time, a GHG inventory was compiled for the year 1994, which was reported in the First National Communication (FNC) submitted by the Maldives to the UNFCCC in 2001. The second GHG inventory was compiled for the year 2011 and was reported in the Second National Communication (SNC) submitted to UNFCCC in 2016. The third GHG inventory was compiled for the year 2015 and reported in the Initial Biennial Update Report submitted to UNFCCC in 2019. Maldives is currently preparing its Third National Communication (TNC) and will be reporting the GHG inventory for the year 2019. Furthermore, Maldives is expecting to report time series GHG inventory for the first time in TNC which will be from the year 2000 to 2020. The following Table 1 enlists detailed information on the three GHG inventories reported by the Maldives.

Table 1: GHG inventories reported by Maldives.

Inventory Year	Guideline followed	Key Categories	Total CO ₂ emission
1994	1996 IPCC Guideline for GHG inventories	Energy Sector CO ₂ emissions and Land Fills – Methane Emissions	152.98 Gg CO ₂ e
2011	2006 IPCC Guideline for GHG inventories	Electricity generation, transport, fisheries, domestic/commercial food preparation and waste	1225.6 Gg CO ₂ e

2015	2006 IPCC Guidelines for GHG inventories	Energy Industries - Liquid Fuels Water-borne Navigation - Liquid Fuels Civil Aviation Road Transportation	1,536.04 Gg CO2e
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In the Maldives, compilation of GHG inventories is done on ad-hoc basis. These inventories are compiled as a part of national communications to the UNFCCC. The stakeholders and processes described in the part of the report are from such endeavors. The figure 01 is the institutional arrangement for GHG inventory compilation in the Maldives. The Figure 1 is the existing institution arrangement for GHG inventory compilation in Maldives. The Table 02 tabulate the main stakeholders involved in the GHG inventory compilation, their main roles and data collected.

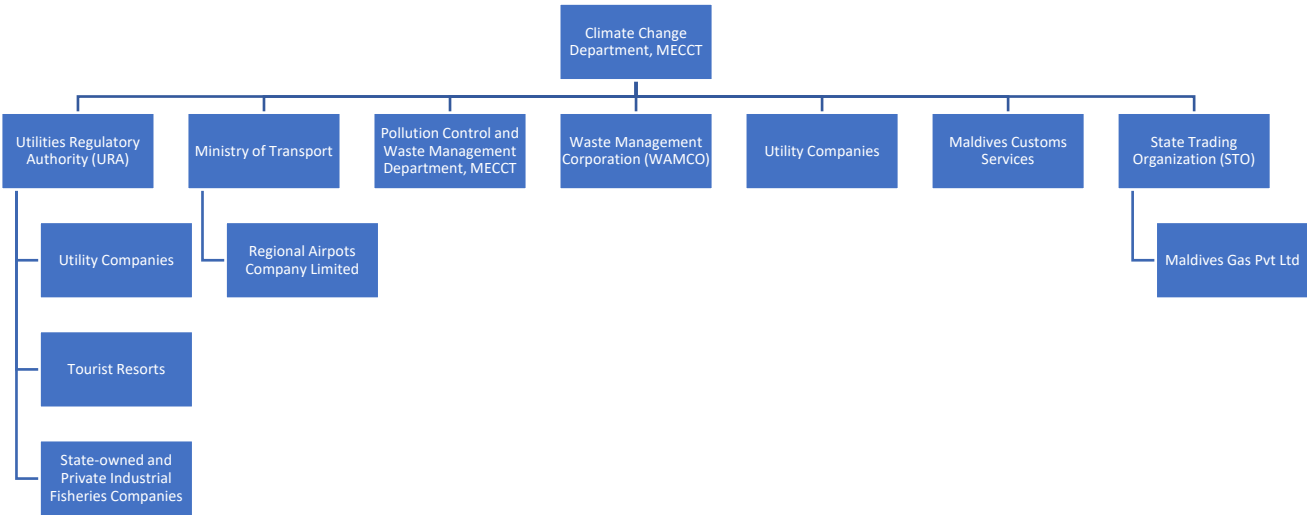


Figure 1: Institutional Arrangement for GHG Inventory Compilation in the Maldives

The Climate Change Department of Ministry of Climate Change, Environment and Energy consist of five main section, they include;

1. Adaptation and Resilience Section: this section consist of two units;
 - a. National Adaptation Planning & Implementation Unit
 - b. Vulnerability and Risk Reduction Unit
2. Low-emission Development; this section consists of two units;
 - a. Green Technology Unit;
 - b. Carbon Market Unit;
3. Greenhous gas Inventory Section;

4. Monitoring, Reporting and Verification Section; This section consists of two units
 - a. NDC Implementation Unit
 - b. Climate Change Reporting Unit
5. Climate Finance Section: This section consists of two units:
 - a. International Climate Fund Unit
 - b. National Implementation Entities Unit
6. Climate Research & Negotiation Outreach Section: This section consists of two units:
 - a. Climate Research Unit
 - b. Negotiation and Outreach Unit

Greenhouse gas inventory Section coordinates the GHG inventory compilation. There are 4 proposed positions in the Greenhouse gas inventory section of CCD. They include Director, Senior Environment Analyst, Statistical Officer, and Quality Control Officer. However, this section is not fully functional due to a lack of staff. The main mandate of the Greenhouse Gas inventory section includes collection of data for the GHG inventory compilation, research on GHG inventory related works, disclose information to stakeholders regarding GHG inventory.

Table 2: Main Stakeholders and their responsibilities for GHG inventory compilation in the Maldives

Name of the stakeholder	General Role, Responsibilities and Legal Mandate	Role and Data Collected for Inventory Purpose
Climate Change Directorate (CCD), Ministry of Environment, Climate Change and Technology (MECCT)	<p>CCD is responsible for the national climate change report preparation.</p> <p>As the focal point for UNFCCC, CCD is responsible for the preparation of National Communications (NC) and Biennial Transparency Report (BTRs).</p> <p>Maldives Climate Emergency Act (Act no. 9/2021) Chapter 3 – Administrative Roles mandates Climate Change Department of MECCT compilation of GHG inventory and share GHG inventory data.</p>	The main institution responsible for compilation of GHG inventory in the Maldives
Utilities Regulatory Authority (URA)	<p>The Regulator of the Energy Sector in the Maldives.</p> <p>The Maldives Energy Act (Act no. 18/2021) Chapter 2 – Institutional Roles and Responsibilities mandates URA to collect data on energy sector and conduct research and provide data and research findings to MECCT where required.</p>	Collection of energy sector data from utilities and tourism sector.
Utility Companies	State Owned companies responsible for the generation and supply of electricity to customers throughout the Maldives	Grass root level data collection in the power sector
State-owned industrial fisheries companies and canneries	Fish processing is one of the most energy intensive industry in the Maldives.	Electricity Generation Data
Ministry of Tourism	Coordinate with URA on collection of energy and waste sector data from tourist resort.	Energy and waste generation data
Tourist Resorts	One of the most energy intensive islands of the Maldives	Energy and waste generation data
National Bureau of Statistic (NBS)	Responsible for the core statistical activities in the country; conducting population census	Demographic data and electricity data

	survey, compiling and disseminating economic and social statistics.	
Pollution Control and Waste Management Department, Ministry of Environment and Energy	The policy making institution for waste management and pollution control sector in the Maldives.	Waste Quantity Waste Composition Waste Audits conducted for various purposes.
Waste Management Corporation Limited (WAMCO)	With a mandate to provide a sustainable waste management solution throughout the country, WAMCO is responsible for the waste management functions of the Greater Male' Region	Grass root level data collection in the waste management sector
Ministry of Transport and Civil Aviation	Regulatory and Policy making institution for transport sector. Ministry of Transport and Civil Aviation collects and maintains data regarding land and sea transport.	Land and Sea Transport Data: Vehicle/Vessels type, Engine type, Type of fuel used, Engine/Motor Capacity, Seating capacity, Tonnage Model Number, Chassis Number, Date of Import, Date of registration, Information on sea/road worthiness
Transport Companies and companies with transport fleets	These state-owned enterprises provide public transport service	Transport Activity Data and fuel consumption data
International and Regional Airport	International aviation fuel bunkering service	Fuel data regarding International aviation and fuel bunkering
Maldives Customs Service	Maintains and regulate import duty and related data	Fuel Import Data
State Trading Organization	Main importers of oil and LPG in the Maldives	Import and consumption data of oil and LPG
Maldives Gas and Villa Gas	Importers and Suppliers of LPG in Maldives	Import and consumption data of oil and LPG

BARRIERS FOR GHG INVENTORY COMPILATION

The following barriers have been identified during the GHG inventory compilation for the previous national climate change reports. They can be categorized into two main categories namely data availability/reliability and institutional capacity and human resources. The following Table 3 provides information on these barriers identified in the Second National Communication (2016).

Table 3: Barriers and constraints identified for GHG inventory compilation

Aspect	Barriers and Constraints
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Data availability and quality	<ul style="list-style-type: none"> • Lack of institutional arrangements for data collection and data sharing. • Lack of local emission factors in energy, waste and transport sector; • Inconsistent data formats from the same sources and do not provide information for analysis; • Lack of proper methods in data acquisition, analysis and management • Lack of means for data quality control • Reluctance by the private sector in provision of their data as it is collected on a commercial basis. • Lack of the necessary infrastructure for collection of data such as atmospheric and oceanic data, coastal and geomorphological changes etc.
Institutional capacity and human resources	<ul style="list-style-type: none"> • Shortage of skilled and professional staff in various institutions among the stakeholders • Insufficient information and technical knowhow of climate change mainstreaming into planning • Weak intersectoral coordination. • Frequent staff turnover at reporting agency as well as stakeholder agencies • Frequent changes to institutions (mostly occurs when government changes) or lapping mandates among institutions

The following table 4 provides update on the gaps identified in MRV outlined in the initial Biennial Update Report (2019).

Table 4: Stock-take of gaps identified in BUR1

Aspect	Information in BUR1	Current Status
Legal Aspects		
Legal Mandate	A legal mandate is only identified for the Maldives Climate Change Team at the Ministry of Environment and Energy. This follows its mandate to carry out the obligations of all climate change related International treaties and activities related to organizations that the Maldives is party to.	Clear legal mandate for MRV and GHG inventory compilation have been given to MECCT from Maldives Climate Emergency Act (Act no. 9/2021).

Compliance and Legal Frameworks	No compliance system defined and no existing legal frameworks for MRV in the country	The Maldives Energy Act (Act no. 18/2021) Chapter 2 – Institutional Roles and Responsibilities mandates URA to collect data on energy sector and conduct research and provide data and research findings to MECCT where required. A regulation to formalize MRV will be formulated under CBIT support.
Institutional Aspects		
Institutional Setup	Although the Department of Climate Change has a clear role as a coordinator of climate initiatives in the country, and stakeholders were identified, the official definition of a system with institutions participating on a regular basis is still missing. This implies that no coordination work made by the Department of Climate Change team is based upon a formal system.	An existing institutional arrangement which will be improved via CBIT support.
Roles and Responsibilities	It is declared that roles and responsibilities of stakeholders (ministries, government departments, private sector and civil society) are only defined to a small extent and even for sub-national governments or academia they are not defined at all	A guideline defining roles and responsibilities of stakeholders is being developed under CBIT support.
Capacity and skills training	The core of the more solid climate expertise at Government level is limited to the members of the Department of Climate Change team, but technical capacities are lacking in top line ministries and stakeholders in general	Reliance on external consultant for technical expertise. technical capacities are lacking in top line ministries and stakeholders in general
Sectoral arrangements for collaboration	Sectoral arrangements for collaboration is not in place	Data sharing MOUs will be elaborated under CBIT support.
Procedural Aspects		
Database management systems and Information systems	Data base management systems and informational systems are not in place, but with initial level of development	To be developed under CBIT support.

Tools and Guidelines	Limited tools and guidelines for data collection and this is limited mostly to the team of the Department of Climate Change	To be developed under CBIT support.
Technical working groups	Technical Working groups are not identified on a regular basis, unless for the preparation of consolidated reporting documents to UNFCCC, including National Communications and BUR on a specific basis.	Technical Working groups are not identified on a regular basis, unless for the preparation of consolidated reporting documents to UNFCCC
Baseline setting: Projections	Lacks the capacities to set baselines for projections	Lacks the capacities to set baselines for projections
Verification	Data verification protocols are not in place	Data verification protocols are not in place
Stakeholder Engagement	Stakeholder engagement is limited to publication of data	Stakeholders are involved in publication of data and working groups.
Availability and Management of GHG Data for MRV System		
Identification of key datasets and templates or guidelines for data collection and reporting at sectoral level	To a moderate extent	To a moderate extent
Obstacles identified for data collection	Cost of data; Submission of data is non compulsory	Cost of data; Submission of data is non compulsory
Data collection performed on a voluntary basis	Not at all	Not at all
Strategy for data management including regular updates, backup and archive routines	To some extent	Data collection, documentation and archiving protocols are developed under CBIT support.
Policies for data handling in place including confidentiality and privacy	To a small extent	MOUs and Non-disclosure agreements to be developed under CBIT support.
National GHG registry for collecting emissions	Not at all	Not at all

data from regulated facilities		
Public availability of GHG data	To a small extent	To a small extent
Quality Assurance & Quality Control at national level including a plan with activities and responsibilities	Not at all currently, but external Quality Assurance will be used for GHG inventory compilation	QA/QC plans are being developed under CBIT support.
Quality Assurance & Quality Control at sectorial level	Some level of quality control is done at sectorial level	QA/QC plans are being developed under CBIT support.
Indicators for Mitigation Actions		
Initial identification of mitigation indicators, templates for compilation of data on indicators and timelines for compilation of data on indicators	To some extent	To be developed under CBIT support.
Data on indicators collected on a regular basis	Every two year	Every two year
QA & QC for mitigation actions	To a small extent	To a small extent

DESIGN OPTIONS FOR GHG INVENTORY COMPILATION

To propose design options for GHG inventory compilation, the institutional arrangements used for compilation of GHG inventory for previous national climate change reports were evaluated. These institutional arrangements were convened on a project basis. They involved ad-hoc working groups which were formulated for the purpose of developing the respective climate change report.

This section of the report will evaluate institutional arrangement used for GHG inventory compilation for Initial Biennial Update Report. Based on the aforementioned evaluation and review of institutional arrangements in other countries with similar national circumstances, 2 design options for Institutional Arrangement for GHG inventory compilation will be described and evaluated. These design options were developed in consultation with the stakeholder participating in the GHG inventory compilation. Last, the most appropriate design option for GHG inventory compilation will be discussed.

INSTITUTIONAL ARRANGEMENT FOR GHG INVENTORY COMPILATION FOR BUR1

The following table 5 shows evolution of roles and institutions involved in GHG inventory compilation over the years in Maldives.

Table 5: Evolution of GHG inventory compilation in the Maldives

GHG Inventory Year	National Climate Change Report	Inventory Compiler	Working Groups involved	Main Data Providers	Guidelines Utilized
1994	FNC	Ministry of Home Affairs, Housing and Environment.		In line ministries, STELCO	1996 IPCC guidelines on GHG inventory compilation.
2011	SNC	Ministry of Environment and Energy	Inventory and Mitigation Working Group	All stakeholders described in table 3.	2006 IPCC guidelines on GHG inventory compilation.
2015	BUR1	Ministry of Environment	Inventory and Mitigation Working Group	All stakeholders described in table 3.	2006 IPCC guidelines on GHG inventory compilation.

The Institutional Arrangement for GHG inventory compilation for BUR1 was selected as a case study due to the following reasons.

1. Most recent GHG inventory was reported in the BUR1.
2. The details of Institutional Arrangements for GHG inventory compilation were well documented for BUR1.
3. BUR1 inventory compilation took the least amount of time in comparison with FNC, SNC and TNC.

The following Figure 2 shows the institutional arrangement used for compilation of GHG inventory for BUR1. Table 6 is the composition of the GHG inventory and mitigation working group used for BUR1.

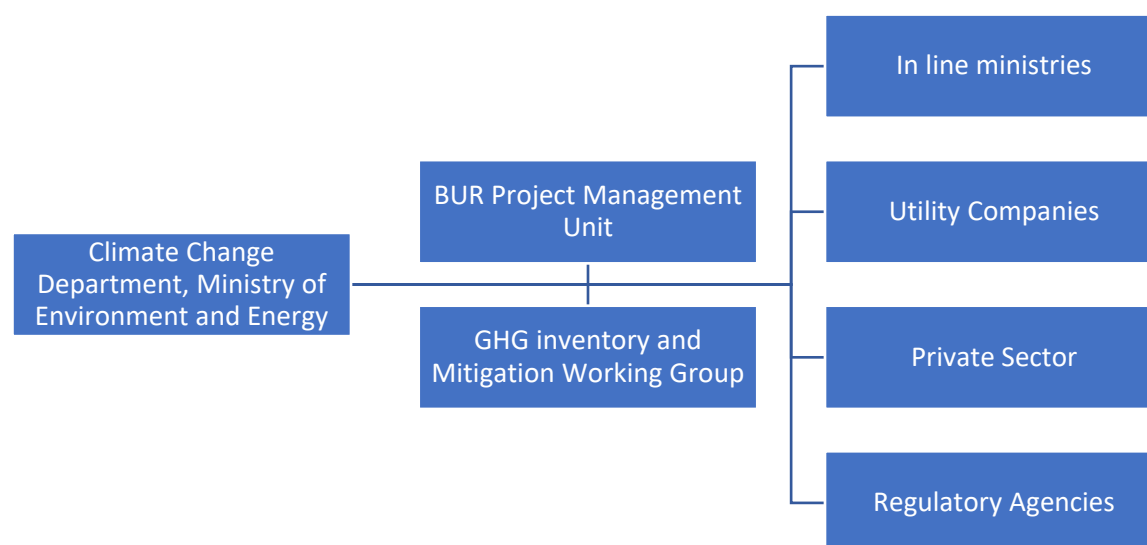


Figure 2: Institutional Arrangements for GHG inventory compilation for BUR1

Table 6: Composition of GHG inventory and Mitigation Working Group

Name of the Stakeholder	Type of Stakeholders	Role in the GHG inventory and Mitigation Working group
Maldives Customs Services	Government Institution	Data Provider on Fuel Import
Fenaka Corporation	Utility Company	Data Provider on Power Production
Flyme	Private Sector	Data on fuel consumption from domestic aviation
Island Aviation	Private Sector	Data on fuel consumption from domestic aviation
Maldives Airports Company Limited (MACL)	State Owned Enterprise	Data on fuel bunkering
Maldives Energy Authority (MEA)	Government Institution	Regulatory Agency for Energy Sector
Maldives Industrial Fisheries Company (MIFCO)	State Owned Enterprise	Data on Power Production
Maldives Ports Limited (MPL)	State Owned Enterprise	Data on Power Production
Maldives Transport and Contracting Company (MTCC)	State Owned Enterprise	Data on Fuel consumption from transport sector
State Electric Company Limited (STELCO)	State Owned Enterprise	Data on Power Production

Ministry of Tourism	Inline Ministry	Data on Power Production from Tourist resorts
Water and Sanitation Department, Ministry of Environment and Energy	State Owned Enterprise	Data on fuel consumption from desalination

Main challenges identified for the Institutional Arrangement for GHG inventory compilation for BUR1 include the following;

1. Difficulty to conduct the working group meetings due to prior engagement of working group members;
2. High turnover of the working group members;
3. Lack of capacity and understanding among the working group members regarding GHG inventory compilation.
4. Lack of clearly defined roles and responsibilities each participating institution of the GHG inventory working group.

Despite of the challenges, these working groups were able to share the data required for GHG inventory compilation in short period of time (12 months). However, it has to be noted that Data Collection officers were hired from three main data providers during the BUR1 project to collect data in a format shared by GHG inventory compiler. Hence, the success of GHG inventory compilation of BUR1 cannot be exclusively dedicated to GHG inventory and mitigation working group. The Terms of Reference for a typical working group for GHG inventory compilation is attached in the Annex 01 of this report.

DESIGN OPTIONS FOR INSTITUTIONAL ARRANGEMENT FOR GHG INVENTORY COMPILATION

This section of the report described 3 different design options for Institutional Arrangement for GHG inventory compilation in Maldives. They include the following;

DESIGN OPTION 1 – ACADEMIC INSTITUTION

Academic Institution such as Maldives National University (MNU) will be given the key responsibility of the data collection and compilation of GHG inventory for the Maldives. Furthermore, academic institutions will be responsible for conducting research to determine country specific emission factors for key categories of GHG inventory. This Institutional arrangement will utilize working groups for data sharing. The academic institution will utilize the data collection teams for collection of GHG inventory data. These could be university students working on final year thesis. The main agency for preparation of national climate change reports will be CCD of MECCT, however the role of GHG inventory compilation will be handed by academic institution. The financial resources required for the GHG inventory compilation can be transferred to an academic institution. In this option, data sharing Memorandum Of Understandings (MOUs) will be between Academic Institutions and data providers. Figure 3 shows the Institutional Arrangements for design option 1. Table 7 provides main information of the design option 1.

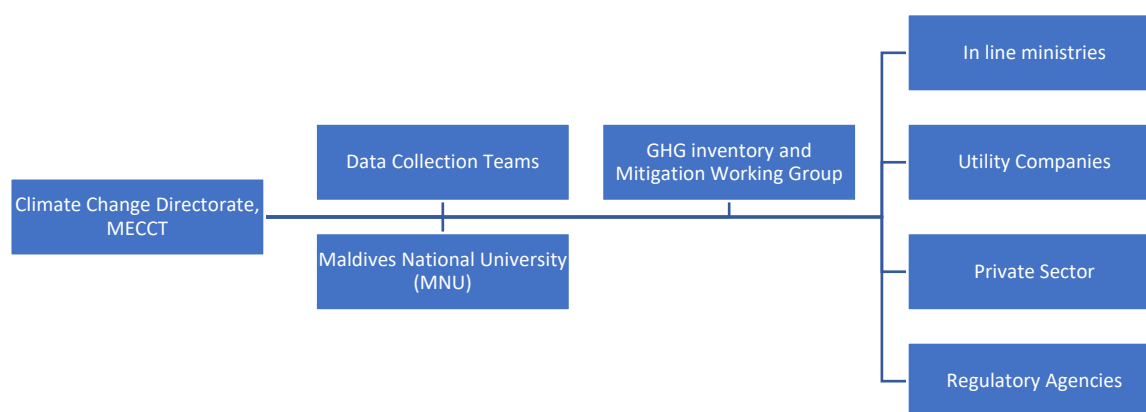


Figure 3: Design Option 1 - Academic Institution

Table 7: Details of Design Option 1 - Academic Institutions

Design Option 1 – Academic Institutions	
Responsibilities for	Responsible Institution
Preparation of Climate Change Report	Climate Change Directorate, MECCT
GHG inventory compilation	Academic Institution (Maldives National University)
Convening of working groups	Academic Institution (Maldives National University)
Allocation of Finance and Resources for GHG inventory compilation	Climate Change Directorate, MECCT
Data sharing MOUs	Between Academic Institution and Data Providers

DESIGN OPTION 2 – SECTORIAL GHG INVENTORY COMPILATION

The Design Option 2 will involve sectorial GHG inventory compilation. The responsibility of sectorial GHG inventory compilation will be handed to key agencies of that sector. The responsibility of energy sector GHG inventory compilation will be on Utilities Regulatory Authority (URA), Waste Sector GHG inventory compilation to Pollution control and Waste Management Department of MECCT. The CCD of MECCT will be responsible for compilation of the National GHG inventory based on the sectorial GHG inventories provided by the sectorial GHG inventory compiler. Data sharing MOUs will be signed between sectorial inventory compilers and data providers. The following Figure 4 shows the Design Option 2 – Sectorial GHG inventory compilation. Table 6 provides information of the option 2 – sectorial GHG inventory compilation.

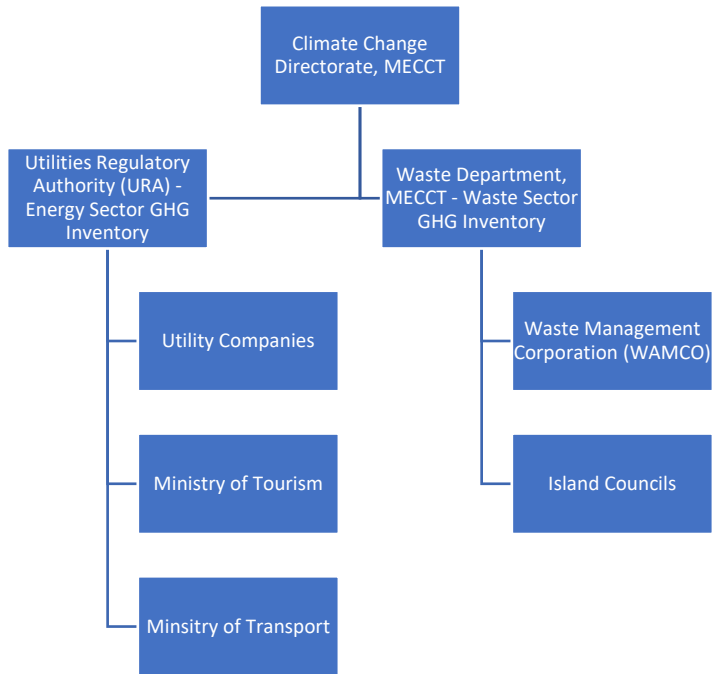


Figure 4: Design Option 2 - Sectorial GHG inventory compilation

Table 8: Detailed information on Design Option 2 - Sectorial GHG inventory compilation

Design Option 2 – Sectorial GHG inventory compilation	
Responsibilities for	Responsible Institution
Preparation of Climate Change Report	Climate Change Directorate, MECCT
GHG inventory compilation	Energy Sector – Utilities Regulatory Authority (URA) Waste Sector – Pollution Prevention and Waste Management Department - MECCT
Convening of working groups	Energy Sector – Utilities Regulatory Authority (URA) Waste Sector – Pollution Prevention and Waste Management Department - MECCT
Allocation of Finance and Resources for GHG inventory compilation	Climate Change Directorate, MECCT
Data sharing MOUs	Between Sectorial GHG inventory compilers and Data Providers

DESIGN OPTION 3 – GHG INVENTORY COMPILATION BY CCD

Design option 3 will involve GHG inventory compilation by CCD with dedicated staff for GHG inventory compilation. These dedicated staff will be trained and supported by external consultants. CCD will build the capacity of civil service staff employed in MECCT for compilation of GHG inventory. This design option will rely on working groups and data collection officers from different major data providers. Figure 5 shows the institutional arrangement for GHG

inventory compilation for design option 3 – GHG inventory compilation by CCD. Table 8 provides detailed information on the design option 3 – GHG inventory compilation by CCD.

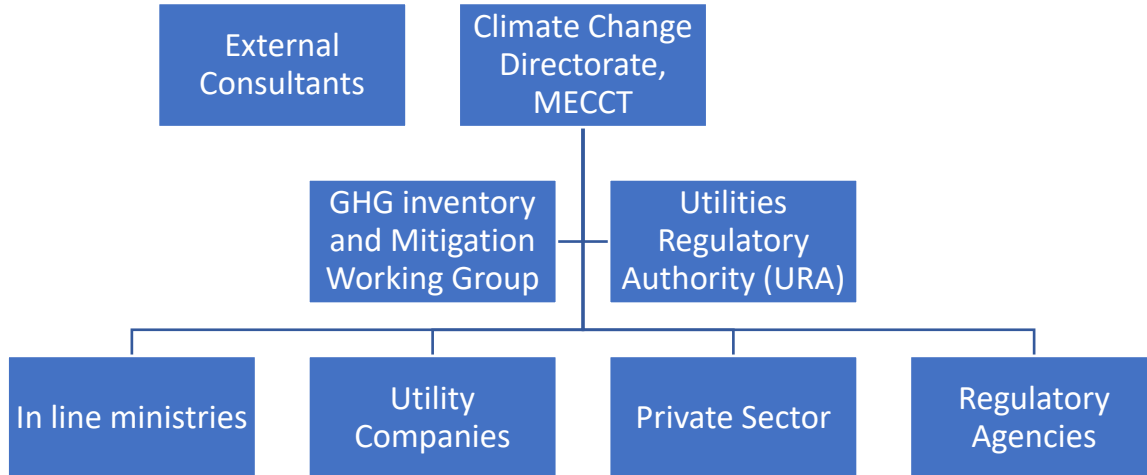


Figure 5: Institutional Arrangements for Design Option 3 - GHG inventory compilation by CCD

Table 9: Detailed information on Design Option 3 - GHG inventory compilation by CCD

Design Option 3 – GHG Inventory Compilation by CCD	
Responsibilities for	Responsible Institution
Preparation of Climate Change Report	Climate Change Directorate, MECCT
GHG inventory compilation	Climate Change Directorate, MECCT
Convening of working groups	Climate Change Directorate, MECCT
Allocation of Finance and Resources for GHG inventory compilation	Climate Change Directorate, MECCT
Data sharing MOUs	Between Climate Change Directorate, MECCT and data providers

The following Table 10 provides information on the review of this option 3 based on the previous GHG inventory compilation, structure and staffing of climate change department and legal mandate provided in climate change department.

Table 10: Detail information on Design Option 3

Aspect	Details
Previous GHG inventory compilation	GHG inventory compilation works for FNC followed a similar arrangement with reliance with external consultants.

<p>Structure and Staffing of CCD</p>	<p>It is anticipated that 2 staff with a minimum qualification in bachelor’s degree in environmental management, statistics or related field is required for this option 3.</p> <p>CCD: 1 staff will be utilized for coordination of GHG inventory data collection and coordination with URA, inline ministries, private sector and external consultant. This staff will be hosted by CCD.</p> <p>URA: 1 staff will be utilized for collection of energy sector data and statistics from utilities company and tourism sector. This staff will be hosted by URA.</p> <p>These staffs are already existing in the organization structure of CCD and URA approved by Civil Service Commission of Maldives.</p>
<p>Legal Mandate to CCD and URA</p>	<p>CCD: Maldives Climate Emergency Act (Act no. 9/2021) Chapter 3 – Administrative Roles mandates Climate Change Department of MECCT compilation of GHG inventory and share GHG inventory data.</p> <p>URA: The Maldives Energy Act (Act no. 18/2021) Chapter 2 – Institutional Roles and Responsibilities mandates URA to collect data on energy sector and conduct research and provide data and research findings to MECCT where required.</p>

ANALYSIS AND EVALUATION OF DESIGN OPTIONS FOR INSTITUTIONAL ARRANGEMENT FOR GHG INVENTORY COMPILATION

The following Table 8 provides information on the advantages and disadvantages of the different design options described above.

Table 11: Evaluation of different design options for institutional arrangements for GHG inventory compilation

Design Option	Advantages	Disadvantages
Design Option 1 – Academic Institutions	<ul style="list-style-type: none"> • More experts will be involved in GHG inventory compilation process. • More opportunity for capacity building of academic institutions and students. • More avenues for research on GHG inventory work. 	<ul style="list-style-type: none"> • Lack of technical capacity of academic institution of GHG inventory compilation. • More workload for academic staff. • Difficult to archive GHG data. • High staff turnover.
Design Option 2 - Sectorial GHG inventory compilation	<ul style="list-style-type: none"> • Better quality data will be available for GHG inventory compilation. • More avenues for incorporation of GHG inventory data for sectorial policy and planning. • More experts will be involved in GHG inventory compilation process. 	<ul style="list-style-type: none"> • Lack of technical capacity in Sectorial Agencies. • Lack of awareness amongst sectorial policy makers regarding importance of GHG inventory data. • High staff turnover.
Design Option 3 – GHG Inventory Compilation by CCD	<ul style="list-style-type: none"> • Ease for resource allocation as GHG inventory compilation is done by the institution responsible for national climate change report preparation. • More training opportunities for CCD staff as CCD is UNFCCC focal point. • Easy to archive GHG inventory data collected. • Dedicated staff can be used for GHG inventory compilation. GHG inventory compilation is already included as a job task. • Dedicated staff is employed in URA for energy data collection and she can be utilized for collection of energy sector data for GHG inventory compilation as well. 	<ul style="list-style-type: none"> • High staff turnover.

CONCLUSION

Three design options have been described in the previous section as institutional arrangements for GHG inventory compilation. Each of the design options has its own advantages and disadvantages. However, reflecting on the technical capabilities of stakeholders in the Maldives and recommendations made by stakeholders during consultations, Option 3 – GHG inventory compilation by CCD is considered to be most appropriate for Maldivian context. The following are the main reasons;

- Technical capacity of Academic Institutions like MNU and sectorial agencies like URA and pollution prevention and waste department need significant improvements in order for them to carry out technical tasks like GHG inventory compilation.
- The workload of staff in these organizations is already very intensive hence, it can be difficult to engage them in GHG inventory compilation.
- The clear mandate for GHG inventory compilation and preparation of national climate change reports is given to CCD as per the National Climate Emergency Act (2020).

Furthermore, the following recommendations were made by stakeholders for establishment of institutional arrangement for GHG inventory compilation.

1. It is important to involve academic institutions for empirical data collection works (such as GHG emission from transport sector on land-based vehicles or tourism sector sea transport).
2. Its is important to take advantage of newly developed legal mandates to institutions working on GHG inventory data collection such as URA the data they collect for their mandated works can be utilized for GHG inventory compilation rather than CCD collecting the data from data providers directly.
3. Even though establishment of GHG inventory working group is essential, meeting shall be limited to few meetings per year.
4. Participants of the GHG inventory working group shall be technical staff rather than political appointees.
5. Clear definition of roles and responsibilities for each stakeholder for GHG inventory process should be established.
6. Capacity building training on GHG inventory compilation is crucial for CCD staff and stakeholder agencies.
7. MOUs for data sharing and Non-Disclosure Agreements are essential.

REFERENCE LIST

Ministry of Environment (2020) “Updated Nationally Determined Contribution (NDC)”, Male’, Maldives.

Ministry of Environment (2021) “Global Environment Facility CEO Endorsement Document for Capacity Strengthening for Improved Transparency of Climate Change Mitigation and Adaptation Actions in the Maldives”, Male’, Maldives

Ministry of Environment and Energy (2016) “Second National Communication of Maldives to UNFCCC”, Male’, Maldives.

Ministry of Environment and Energy (2015) “Maldives’ Intended National Determined Contribution (INDC)”, Male’, Maldives.

Ministry of Environment, Energy and Water (2007) “National Adaptation Programme of Action (NAPA)”.

Ministry of Home Affairs, Housing and Environment (2001) “First National Communication of Maldives to UNFCCC”, Male’, Maldives

UNEP DTU Partnership (2018) “INITIAL PROPOSAL OF A NATIONAL SYSTEM FOR MRV OF MITIGATION ACTIONS FOR MALDIVES”, Copenhagen, Denmark.

United Nations Framework Convention on Climate Change Secretariat (2020), “Reference Manual for the Enhanced Transparency Framework under the Paris Agreement”, Bonn, Germany.

United Nations Framework Convention on Climate Change Secretariat (2020), “Handbook on institutional arrangements to support MRV/transparency of climate action and support”, Bonn, Germany.



**Ministry of Environment and Energy
Republic of Maldives**

**Preparation of Third National Communication for
the United Nations Framework Convention on
Climate Change**

**Inventory and Mitigation Technical Working Group
(IMTWG)**

Terms of Reference

1. Background/Context

Ministry of Environment (ME) in partnership with the United Nations Environment Programme (UNEP) is currently implementing a project titled, Preparation of Third National Communication (TNC) under United Nations Framework Convention on Climate Change (UNFCCC) for the Republic of Maldives.

TNC follows previous work carried out by Republic of Maldives including First National Communication, (FNC), Second National Communication, (SNC), and Maldives' Nationally Determined Contribution (NDC), sets a number of priority areas, and allocates adequate resources in the most cost-effective manner. Project components include: national circumstances; national greenhouse gas (GHG) inventory of anthropogenic emissions by sources and removal by sinks of all GHGs not controlled by the Montreal Protocol; programmes to mitigate climate change; measures to facilitate adequate adaptation; constraints and gaps, and related financial, technical and capacity needs, any other relevant information and preparation of the Third National Communication of the Republic of Maldives and submission.

This project aims to achieve the following outcomes;

1. Prepare and submit Maldives' TNC in accordance to the decision 17/CP.8 of the UNFCCC, in fulfilment of its national obligation as a Non-Annex I party to the convention
2. Develop enhanced technical and institutional capacity for effective reporting mechanism under UNFCCC.

For the preparation of TNC, Ministry of Environment will establish a working group for elaboration of GHG inventory and mitigation assessments.

2. Roles and functions of the Inventory and Mitigation Technical Working Group

The role and functions of the Inventory and Mitigation Technical Working Group includes not limited to the following;

- Provide guidance to the Inventory and Mitigation Technical Coordinators on identifying data sources for elaboration of GHG inventory and mitigation assessments;
- Provide the information required by the Inventory and Mitigation Technical Coordinators for the preparation of GHG inventory, on a timely manner
- Provide assistance on quality control and quality assurance of GHG inventory
- Provide comments and inputs to the Inventory and Mitigation Technical Coordinators during the compilation of GHG inventory and mitigation assessments

3. General

3.1. Composition of the working group

The working group will consist of technical representatives from the following stakeholders as identified in the Inception workshop of the project;

Core Working Group

- Ministry of Tourism
- Ministry of Transport and Civil Aviation
- Maldives Energy Authority
- Maldives Customs Service
- Energy Department, Ministry of Environment
- Waste and Pollution Control Department, Ministry of Environment

Transport Sector

Sub working group

- Maldives Transport and Contracting Company (MTCC)
- Maldives Airports Company Limited (MACL)
- Island Aviation Services Limited
- Trans Maldivian Airways
- Domestic Airlines

Energy Sector

Sub working group

- Fenaka Corporation Pvt Ltd
- State Electric Company (STELCO)
- MWSC

Waste Sector

Core working group

- WAMCO

Technical representatives from stakeholders other than the ones currently mentioned, can take part in the working group discussions when necessary.

3.2. Chair/Convenor

The group will be chaired by Project Director or a Senior Representative of the Climate Change Department of Ministry of Environment or an assigned representative. Meetings will be convened by the Chair and supported by the Inventory and Mitigation Technical Coordinators.

3.3. Agenda items

All agenda items will be forwarded to the Inventory and Mitigation Technical Coordinators by close of business ten working days prior to the next scheduled meeting.

The agenda, with attached meeting papers, will be distributed at least five working days prior to the next scheduled meeting.

3.4. Minutes and meeting papers

The minutes of each Inventory and Mitigation Group meeting will be prepared by Project Coordinator of TNC project.

Full copies of the minutes, including attachments, will be provided to all Inventory and Mitigation Working Group members no later than 7 working days following each meeting.

3.5. Frequency of meetings

The Inventory and Mitigation Working Group will meet at least biannually.

3.6. Proxies to meetings

Members of the Inventory and Mitigation Working Group will nominate a proxy to attend a meeting if the member is unable to attend.

The Chair will be informed of the substitution at least five working days prior to the scheduled nominated meeting.

The nominated proxy will provide relevant comments/feedback about the attended meeting to the Inventory and Mitigation Working Group member they are representing.

3.7. Quorum requirements

A quorum will be half the regular membership plus one.

ANNEX 2: LIST OF STAKEHOLDER INSTITUTIONS CONSULTED

1. Climate Change Department, Ministry of Environment, Climate Change and Technology
2. Maldives CBIT project management unit
3. National GHG inventory experts
4. Utilities Regulatory Authority
5. Energy Department, Ministry of Environment, Climate Change and Technology