

Needs for Capacity Building on National Greenhouse Gas Inventory in Non-Annex I Countries

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Outline of this Presentation

1. What is a national Greenhouse Gas (GHG) inventory?
2. Why are national GHG inventories necessary for non-Annex I countries?
3. Gaps in non-Annex I countries for periodical national GHG inventory preparation
4. Example of a capacity building project implemented by JICA

What is a national Greenhouse Gas inventory?

- A national greenhouse gas (GHG) inventory provides information on emissions and removals of greenhouse gases, which is one of fundamental information for a country to develop and monitor policies and measures on mitigation of climate change.

➤ Basic information on GHG emissions and removals provided by a national GHG inventory

- ❑ National total emissions and removals due to anthropogenic causes,
- ❑ Methodologies how to estimate the emissions and removals
- ❑ Structure of national system (institutional and procedural arrangement for preparing national GHG inventories)

GHGs to be estimated	Carbon dioxide (CO ₂), Methane (CH ₄), Dinitrogen monoxide (N ₂ O), Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), Sulphur hexafluoride (SF ₆)
Sectors to be estimated	Energy; Industrial processes; Agriculture; Land use, land-use changes and forestry (LULUCF); Waste

Why are national GHG inventories necessary for non-Annex I countries?

➤ National Demand:

- Information on the GHG emissions and removals provided by the national GHG inventory is one of the fundamental data for
 - Simulating future scenario on GHG emissions and removals for drawing a business-as-usual emission/removal level, and
 - Monitoring the degree of attainment of Nationally Appropriate Mitigation Actions (NAMAs).

➤ International Demand:

- Decision 2/CP.17 includes a requirement for non-Annex I countries to submit their national GHG inventories biennially as a part of biennial update reports (BUR), if possible to submit the 1st BUR by December 2014.
- Periodical national GHG inventory preparation came to be an urgent and important issue for non-Annex I countries.

Gaps in non-Annex I countries for periodical national GHG inventory preparation

- * Basically, non-Annex I countries have gaps for periodical national GHG inventory preparation.
- * In order to consider gaps in your country for periodical national GHG inventory preparation, we should consider whether the following items are sufficiently prepared in your country:
 1. National system for periodical national GHG inventory preparation;
 2. Documentation on national GHG inventory preparation;
 3. Data collection system for estimating GHG emissions and removals;
 4. Number of experts for GHG inventory compilation.

Gaps in non-Annex I countries for periodical national GHG inventory preparation

1. National system for periodical national GHG inventory preparation:

- * National System = officially accepted institutional, legal and procedural arrangements for periodical national GHG inventory preparation.
 - * Basic elements of national system:
 - * Permanent national focal point responsible for periodical national GHG inventory preparation,
 - * Organizational structure of institutional arrangement,
 - * Procedural arrangement how to collect necessary data, estimate GHG emissions and removals, compile national GHG inventories, and approve the inventories as official data.
- * National system is a stable organizational foundation which enables periodical national GHG inventory preparation.

Gaps in non-Annex I countries for periodical national GHG inventory preparation

1. National system for periodical national GHG inventory preparation;

* Non-Annex I countries:

- * There are few countries which have their permanent national systems
 - * because there was no requirement for non-Annex I countries to periodically prepare national GHG inventories until COP17 issued Decision 2/CP.17 which required non-Annex I countries to submit BUR.
- * As a result, many non-Annex I countries prepared national GHG inventories as an **ad-hoc basis** by temporarily hired experts.
- * This ad-hoc based preparation is unstable and not sufficient for periodically and systematically prepare national GHG inventories.
- * In order to stably prepare national GHG inventories biennially, establishment of national system is indispensable.

Gaps in non-Annex I countries for periodical national GHG inventory preparation

2. Documentation on national GHG inventory preparation:

- * Documentation on national GHG inventory preparation is essential as a reference for national experts to periodically prepare national GHG inventories.
 - * The documentation enable countries to reproduce previous GHG emission/removal estimates and make it easy for newly joined inventory compilers to understand estimation methods on GHG emissions and removals by following the description in the documents.
- * The documentation should include information on
 - * GHG emission/removal estimation methods,
 - * Activity data,
 - * Emission factors,
 - * National system,
 - * Key category analysis, uncertainty assessment and other necessary items.

Gaps in non-Annex I countries for periodical national GHG inventory preparation

2. Documentation on national GHG inventory preparation:

- * Non-Annex I countries:
 - * Documentation on national GHG inventory preparation in non-Annex I countries is basically insufficient due to lack of requirement of submission to the UNFCCC and constraints of budget and time.
 - * The insufficient documentation makes non-Annex I countries difficult to reproduce estimates prepared in their previous GHG inventory preparation and inherit estimation methods to young experts who newly join national GHG inventory preparation.

Gaps in non-Annex I countries for periodical national GHG inventory preparation

3. Data collection system for estimating GHG emissions and removals;

- * Estimation of GHG emissions and removals requires to collect various statistical data as activity data.
- * Non-Annex I countries:
 - * Due to lack of sufficient data collection system for national GHG inventory preparation, there is difficulty to sufficiently collect statistical data necessary as activity data.

Gaps in non-Annex I countries for periodical national GHG inventory preparation

4. Experts for GHG inventory compilation;

- * Permanent personnel in a designated official institute responsible for GHG inventory compilation is necessary for sustainably implementing periodical GHG inventory preparation.
- * Non-Annex I countries:
 - * Many non-Annex I countries do not have sufficient permanent personnel for national GHG inventory preparation due to ad-hoc based inventory preparation up to now.
 - * In order to prepare national GHG inventories biennially, enhancing the number and capacity of permanent personnel for the inventory preparation is necessary.

Example of a capacity building project implemented by JICA

- * JICA implements 2 projects for enhancing capacity of periodical national GHG inventory preparation in Indonesia and Vietnam.
- * **Objective of the Project in Vietnam**
 - * To strengthen Vietnam's capacity to prepare accurate, reliable and periodical national GHG inventories.
- * **Expected Outputs from the Project:**
 - * Output 1: Development of National System and implementation of national GHG inventory preparation
 - * Output 2: Enhancement of the awareness of importance of GHG inventories
 - * Output 3: Improvement of estimation methods in each sector

Example of a capacity building project implemented by JICA

- Output 1 -

- * Output 1: Development of National System and implementation of national GHG inventory preparation
 - * Activities for this output aims at enhancing capacity to periodically and systematically collect and compile necessary data for national GHG inventories.

Activity No.	Description of Activities
Activity 1-1	Examine the existing system for preparing national GHG inventories and assess current capacity of DMHCC and other relevant parties involved in the preparation
Activity 1-2	Study methods for cross-cutting QA/QC of national GHG inventories
Activity 1-3	Prepare a roadmap for improving the national system for GHG inventory preparation
Activity 1-4	Draft and improve a manual for institutional arrangement for preparing national GHG inventories
Activity 1-5	Collect necessary data for national GHG inventory from relevant parties
Activity 1-6	Develop a database , consisting of file systems, of national GHG inventories
Activity 1-7	Compile national GHG inventories with time series consistency
Activity 1-8	Plan and implement cross-cutting QA/QC activities for national GHG inventories
Activity 1-9	Draft and improve manuals for procedures of inventory compilation and cross-cutting and each sector's QA/QC activities
Activity 1-10	Draft and improve a national GHG inventory improvement plan

Example of a capacity building project implemented by JICA

- Output 1 -

* Deliverables from Output 1 up to now:

Red-colored reports are main deliverables, and other black-colored reports are background paper for preparing the main deliverables.

* From Activity 1-1 (Capacity assessment)

- * Report on Investigation of the System and Role Assignment of National GHG Inventory Preparation when Vietnam Prepared its Second National Communication (SNC)
- * Report on Instruction Manual on the UNFCCC Guidelines for National Systems and a Recommendation on the Vietnamese National System
- * **Report on Capacity Assessment Plan**

* From Activity 1-2 (QA/QC activities)

- * Report on Investigation of the Vietnamese Status of Implementing Quality Assurance/Quality Control (QA/QC) Activities when Vietnam Prepared its Second National Communication
- * **Draft Report on Cross-Cutting QA/QC Activity Plan**

* From Activity 1-3 (Roadmap for improving the national GHG inventory system)

- * Report on Identified Items for Improving National System,
- * Report on Prioritization of the Items for Improving the National System,
- * **Draft Report on Roadmap for Improving the National Inventory System for Greenhouse Gas Inventory.**

Example of a capacity building project implemented by JICA

- Output 1 -

- * Deliverables from Output 1 up to now:
 - * From Activity 1-4 (Institutional and procedural arrangement)
 - * Report on Analysis of the Institutional Arrangement for the Previous Greenhouse Gas Inventory,
 - * **Draft Report on the Institutional Arrangement among Ministries and Agencies relevant to the GHG Inventory Preparation.**
 - * From Activity 1-5 (Data collection framework)
 - * Report on Analysis of the Status of Data Collection for the Previous Greenhouse Gas Inventory Preparation,
 - * **Draft Report on the Data Collection Framework for Estimating Greenhouse Gas Emissions/Removals in the National Inventory Preparation.**
 - * Presently, the Vietnamese counterparts for the project, in cooperation with JICA experts, are implementing inter-ministerial consultation for confirming these main deliverables are suitable as Vietnamese national system for periodical inventory preparation.
 - * After developing the national system through activities 1-1 to 1-5, the Project implements actual national GHG inventory preparation two times (for 2005 and 2010 inventories) as on-the-job training through activities 1-6 to 1-9.
 - * National GHG inventory improvement plan, which includes items to be improved on national system and estimation methods, will be developed through activity 1-10.

Example of a capacity building project implemented by JICA

- Output 2 -

- * **Output 2: Enhancement of the awareness of importance of GHG inventories**
 - * Activities for this output intend to enhance capacity to promote understanding of national GHG inventories in relevant ministries and agencies.

Activity No.	Description of Activities
Activity 2-1	Conduct workshops for acquiring general knowledge on preparation of national GHG inventories
Activity 2-2	Conduct workshops on preparation for the national GHG inventories and their improvement
Activity 2-3	Conduct workshops on methodological study on accuracy and reliability of national GHG inventories

Example of a capacity building project implemented by JICA

- Output 2 -

- * Workshop for Activity 2-1 (Kick-off Workshop)
 - * The kick-off workshop was held on 2nd November 2011 in order to launch the GHG inventory project and to explain general knowledge on preparation of national GHG inventories.
 - * Presentations.
 - * The role of GHG inventories
 - * GHG inventories by Non Annex I Parties (NAI)
 - * Introduction of the JICA project
 - * Implementation of national GHG inventory in the Second National Communication and institutional arrangement in JICA project
 - * The importance of ministerial support for GHG inventory compilation

Example of a capacity building project implemented by JICA

- Output 3 -

- * **Output 3: Improvement of estimation methods in each sector**
 - * Activities for this output aim to improve capacity to manage quality assurance/quality control (QA/QC) of GHG inventories for each sector (energy; industrial processes; agriculture; land use, land-use change and forestry [LULUCF]; and waste).

Activity No.	Description of Activities
Activity 3-1	Study methods for preparing activity data and emission factors and for implementing data compilation and QA/QC for each sector of the national GHG inventories
Activity 3-2	Conduct key category analysis and identify categories which should be given priority in improving the accuracy and reliability of data
Activity 3-3	Investigate measures for reducing uncertainties in order to improve accuracy and reliability of emission/removal estimates for prioritized key categories
Activity 3-4	Collect and compile information and identify emission factors and other relevant parameters that better reflect national or regional circumstances (in prioritized key categories)
Activity 3-5	Prepare time series of activity data for each sector

Example of a capacity building project implemented by JICA

- Output 3 -

- * **Output 3: Improvement of estimation methods in each sector**
- * Deliverables from Output 3 up to now:
 - * Summary reports on estimation methodologies of IPCC Guidelines (Preparation of these summary reports is almost completed.)
 - * Reports on collected activity data for GHG emission/removal estimation (Preparation of these reports is on going, and will be completed by October 2012.)

Conclusion

- * A national greenhouse gas (GHG) inventory provides one of fundamental information for a country to simulate future projection of GHG emissions and removals, to develop NAMA and to monitor the progress of NAMA activities.
- * Submission of the national GHG inventory to the UNFCCC biennially as a part of BUR came to be a requirement for non-Annex I countries under Decision 2/CP.17.
- * Although preparing national GHG inventories biennially came to be a requirement under Decision 2/CP.17, there are still many gaps for non-Annex I countries to periodically prepare national GHG inventories.
- * In order to enable periodical national GHG inventory preparation, capacities on the following items should be enhanced:
 1. National system for periodical national GHG inventory preparation;
 2. Documentation on national GHG inventory preparation;
 3. Data collection system for estimating GHG emissions and removals;
 4. Number of experts for GHG inventory compilation.

Thank You!

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