Greenhouse gas Inventory Office of Japan

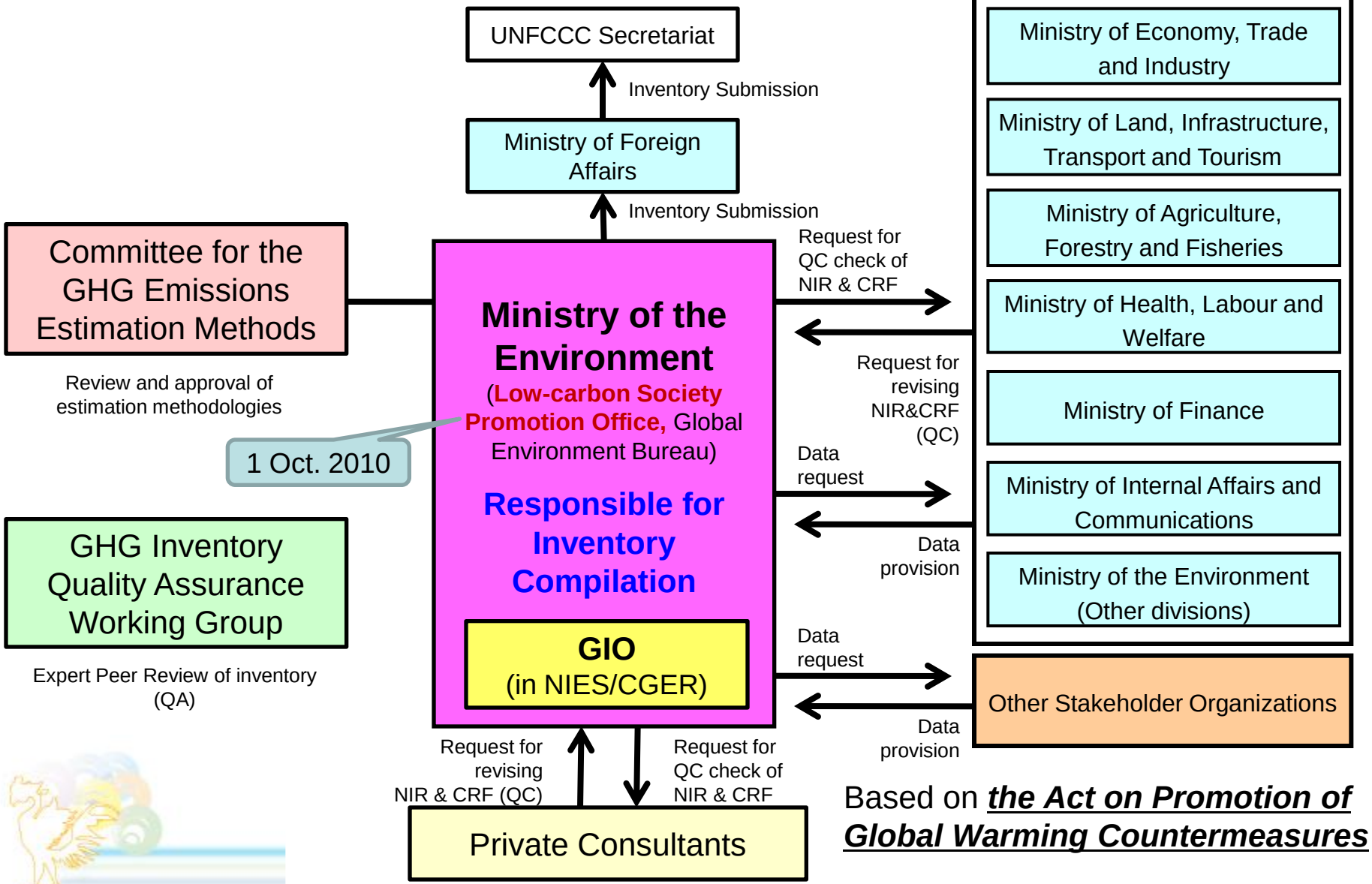
Inventory Working Group (cross-cutting issues) on Quality Assurance/Quality Control

Japan's QA/QC System

The 9th Workshop on GHG Inventories in Asia (WGIA9)
14 July 2011 (13:30 – 17:00)
InterContinental Phnom Penh, Phnom Penh, Cambodia

Elsa Hatanaka
Greenhouse Gas Inventory Office of Japan (GIO)
Center for Global Environmental Research (CGER)
National Institute for Environmental Studies (NIES)

Institutional Arrangement



Based on ***the Act on Promotion of Global Warming Countermeasures***

Inventory Compilation Process

1. **MOE and GIO identify items for improvement and prepare a schedule for examining the items.** [June – September]
2. **MOE holds the Committee for the Greenhouse Gas Emissions Estimation Methods, in which the items for improvement are examined by experts with different scientific backgrounds.** [June – January]
3. **MOE, GIO, and relevant ministries and governmental agencies collect data necessary for GHG inventory preparation.** [December - March]
4. **MOE and GIO compile the NIR and CRF (incl. KCA & uncertainty assessment).** [January – March]
5. **Relevant ministries and private consultants check the accuracy of the NIR and CRF.** [late March – April]
6. **Ministry of Foreign Affairs submits the inventory to the UNFCCC, and MOE and GIO release relevant information domestically.** [early April – 15 April]

Quality Control

UNFCCC Inventory Review

Quality Assurance

MOE and GIO hold the Inventory Quality Assurance Working Group that externally assesses the quality of the inventory

Japan's QA/QC

QA/QC activities are key in developing the quality and the completeness of GHG Inventories, and are implemented in accordance with the QA/QC Plan.

Quality Control (QC)

QC is done mainly by the Greenhouse Gas Inventory Office (GIO), the Ministry of Environment, relevant ministries/agencies/organizations, the Committee for the Greenhouse Gas Emission Estimation, and private consultants.

QC activities include...

QA/QC Plan internally documents the specifics of all QA/QC activities in all processes from the start of National Inventory Report compilation to the final report, the scheduled time frame, and the institutional arrangements and responsibilities of all involved entities.

Tier 1 QC by compilers

General QC procedures (Tier 1)

- Conducted mainly by Sectoral Experts and the National Inventory Compiler
- Includes the general items to be confirmed which are related to the calculation, data processing, completeness, documentation, and archiving applicable to all emission source and sink categories.

Archiving of information in GIO

Tier 1 QC by Sectoral Experts

- ✓ Checking for **transcription errors** in data entry and referencing
- ✓ Checking to ensure that **emissions** are **accurate**ly estimated
- ✓ Checking to see that **parameters and emission units are accurate**ly recorded, and that **proper conversion factors are used**
- ✓ Checking the **conformity** of databases and/or files
- ✓ Checking the **consistency of data** from one category to another
- ✓ Checking the **accuracy of** inventory **data behavior** from one processing step to the next
- ✓ Checking **completeness**
- ✓ Checking **time series consistency**
- ✓ Checking **trends**
- ✓ Conducting **comparisons with past** estimated **values**
- ✓ Checking that **uncertainties** in emissions and removals are **accurate**ly estimated and calculated
- ✓ Carrying out reviews of internal **documentation**
- ✓ Checking that the **assumptions and criteria for** selecting **activity data and emission factors are documented**

Tier 1 QC by the National Inventory Compiler

- ✓ Confirming that CRF Reporter **data provided by Sectoral Experts** are **imported without omission**
- ✓ Confirming that the information needed for the **documentation box** is **properly entered**
- ✓ Confirming that the **reasons for "NE" and "IE"** are **correctly entered**
- ✓ Confirming that the **key category analysis results** are **correctly entered**
- ✓ Confirming that **recalculations** have been **correctly performed**
- ✓ Confirming **time series consistency for emissions**
- ✓ Confirming inventory **completeness**
- ✓ Confirming that **CRF Reporter data** are **correctly transferred to CRF Excel files**
- ✓ Confirming that **emissions** are **correctly totaled**

CRF: Common Reporting Format

NE: Not Estimated

IE: Included Elsewhere

Tier 2 QC

QC procedures for each category (Tier 2)

- Performed by private consultants

  - external QC on the CRF and NIR drafts, and estimation files prepared by GIO for each emission source/sink category

- Performed by relevant ministries and agencies

  - confirmation and verification of the content of the CRF and NIR drafts, and estimation files, as well as drafts of press releases, for categories relevant to each ministry or agency

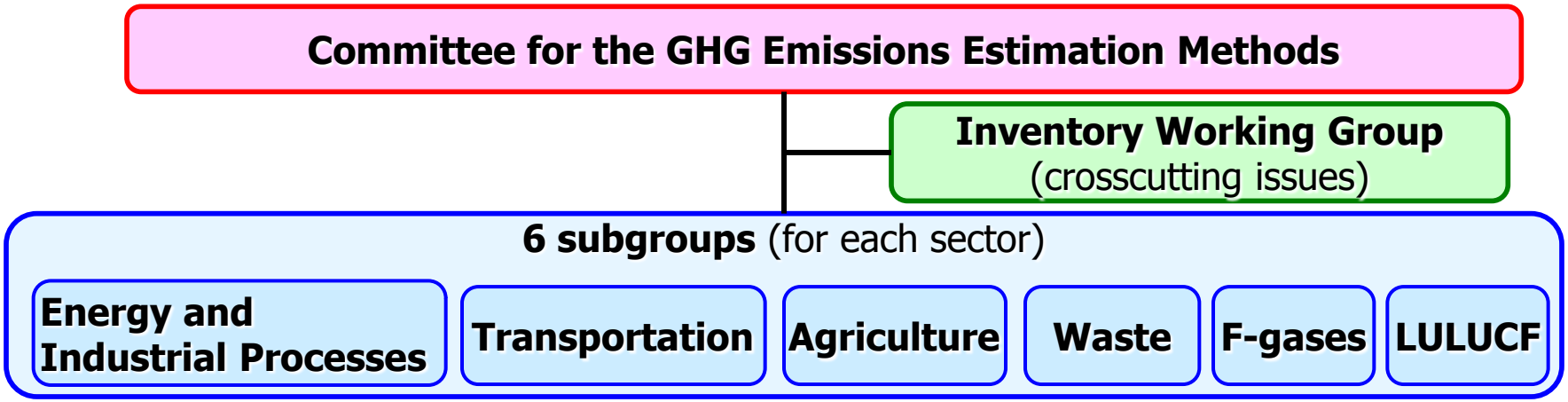
QC by relevant ministries /agencies/organizations, private consultants

QC Activity	Entity
Preparation of activity data, emission factor data, and other data needed for inventory compilation, and submission of the data by the submission deadline.	M, A, O
QC of the data provided to the Ministry of the Environment and the GIO.	M, A, O
Confirmation and verification of the inventory (CRF, NIR, spreadsheets, and other information) prepared by the Ministry of the Environment and the GIO.	M, A
(When necessary), responding to questions from expert review teams about the statistics controlled by relevant ministries/agencies/organizations, or about certain data they have prepared, and preparing comments on draft reviews.	M, A, O
(When necessary), responding to visits by expert review teams.	M, A
QC of inventory (CRF, NIR, spreadsheets, and other information) compiled by the Ministry of the Environment and the GIO.	P
(When necessary), providing support for responding to questions from expert review teams and for preparing comments on draft reviews.	P
(When necessary), providing support for responding to visits by expert review teams.	P

M: ministries, A: agencies, O: organizations, P: private consultants

QC by the Committee for the Greenhouse Gas Emission Estimation Methods

- ◆ Committee for the GHG Emissions Estimation Methods in place since 1999
- ◆ Members: Approximately 60 external experts
- ◆ The Committee is in charge of considering the methods for calculating inventory emissions and removals, and the selection of parameters such as activity data and emission factors



➢ *Inventory Compilation* and *Inventory Improvement* are implemented in close consultation with the Committee.

...which effectively acts as QC

Examples of revision of estimation methods by the Committee

Industrial Processes - Fire Extinguishers

Emissions: Partially NE for stocks

→The Fire and Disaster Management Agency started to provide estimations of installation amounts, for emissions estimation

Agriculture - Plowing of Organic Soil

EF: default value from GPG 2000

→ New measurement data available for N_2O from paddy field cultivation of organic soils, to establish a country-specific EF

QA by external experts

- QA is a peer review done by experts, who are not involved in the Inventory preparation and compilation
- The GHG Inventory Quality Assurance Working Group implements the QA activities
- Previously, the Committee for the GHG Emissions Estimation Methods performed quality assurance
- This continued until it was pointed out in the Initial Review Report (under the Kyoto Protocol, 2007) that:

QA by external experts

"...QA is performed by experts who are members of the Japan's Committee for the Greenhouse Gases Emissions Estimation Methods, and they are therefore part of the inventory process. Taking into account the IPCC good practice guidance, the ERT recommends that Japan invite experts who are not involved in the inventory process to undertake QA of its future GHG inventories."

QA Working Group

- A new form of quality assurance started in 2009, by inviting experts who are not involved in the inventory preparation process to conduct expert peer review

Requirements for QA-WG review experts	
a.	No direct involvement in the inventory preparation process for estimating emissions/ removals from the sectors/categories to be reviewed (i.e., no involvement in the Committee, the data creation and the data provision for those sectors/categories)
b.	No specific interests related to the inventory and the capability to judge objectively without being affected by any specific organizations and/or stakeholders.
c.	Sufficient skills, knowledge and experiences to assure the quality of the inventory

QA Working Group

Since then, the following sectors have been taken up:

- ✓ Agriculture and Waste sectors (2009)
- ✓ Industrial Processes and Solvent and Other Product Use sectors (2010)
- ✓ Energy sector (currently ongoing)

What do these external experts do then?

QA Working Group

- The QA-WG performs detailed reviews (expert peer reviews) for each emission source and sink in order to assure inventory quality and to identify places that need improvement.
- The scope of the review is mainly:

✓ Confirming the soundness of estimation methods, activity data, emission factors, and other items

✓ Confirming the soundness of content reported in the CRF and NIR

QA Working Group

QA reviews were conducted with regard to these points:		
A. Appropriate Implementation of Improvements to the Previous-Year Inventory (Check for the Improvement Process)		
	A1	Are the comments made in the inventory review under the Convention/Protocol appropriately addressed?
	A2	Are the recommendations of the Committee for the Greenhouse Gas Emission Estimation Methods appropriately implemented?
B. The Appropriateness of Estimation Methods and Data Used (Check for content)		
	B1	Are the estimation methods/data used in line with IPCC methodology?
	B2	Are the estimation methods/data used appropriate from a scientific viewpoint?
C. The Appropriateness of Reporting		
	C1	Are the estimation methods/data used appropriately reflected in the CRF?
	C2	Are the descriptions in the NIR sufficiently accurate and transparent? (Are there any descriptions that are notably nontransparent, or inaccurate?)
D. Other (Any matters, aside from the above A to C, whose improvement would be desirable from the viewpoint of quality assurance)		

QA Working Group

Some of the results were:

- Key data and the methods of estimation used in these sectors have been validated by the QA-WG
- Some issues were identified by the QA-WG and submitted to the Committee for the GHG Emissions Estimation Methods
- Some insufficient explanations and incorrect descriptions in the NIR were identified by the QA-WG and addressed, in order to improve transparency and accuracy

Thank you !

ご清聴有難うございました。