

Summary of Mutual Learning

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11th Workshop on GHG Inventories in Asia

Greenhouse Gas Inventory Office of Japan (GIO)
National Institute for Environmental Studies (NIES)

Outline

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- Overview
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Background of ML programme

Overview

■ Objective

- To develop capacity of inventory compilation learning partner's inventory
 - To familiar methodology
 - To progress inventory compilation (data collection, quality control, and etc.)
 - To improve transparency of documentation

■ Approach

- Bilateral learning
- Exchange of the inventories
 - document for methodology
 - spreadsheet for calculation
- Reading carefully, clarifying questions
- Learning mutually good practices in partner's inventory
 - Not one sided lecture
 - Not peer review with criticism

History

	2008	2009	2010	2011	2012	2013
outside WGIA	JPN-KOR (Waste)	JPN-KOR (Waste)	JPN-KOR (Whole inventory)	-	-	-
WGIA activity	WGIA6	WGIA7	WGIA8	WGIA9	WGIA10	WGIA11
	-	-	Introduction to ML (with hands on training)	IDN-MGL (Energy)	KHM-THA (Energy)	LAO-THA (Energy)
				-	IDN-JPN (IP)	-
				-	IDN-VNM (Agriculture)	CHN-MMR (Agriculture)
				JPN-LAO (LULUCF)	-	-
IDN-KHM -KOR (Waste)				CHN-KOR (Waste)	MYS-VNM (Waste)	

- Trial implementation between Japan and Korea since 2008
- Introduction to ML activity on WGIA 8
- Official programme into WGIA since 2011

Experienced countries

	2011 (WGIA9)	2012 (WGIA10)	2013 (WGIA11)
Cambodia	✓	✓	
China		✓	✓
India			
Indonesia	✓	✓	
R.O.K	✓	✓	
Japan	✓	✓	
Lao PDR	✓		✓
Malaysia			✓
Mongolia	✓		
Myanmar			✓
Philippines			
Singapore			
Thailand		✓	✓
Viet Nam		✓	✓

- In spite of many applicant every year, all of the parties have not experienced ML yet..

Outcome of past MLs

■ Issues discussed in the past mutual leanings

Estimation methodology

- Acquisition of activity data
- Adoption of emission factor
- Uncertainty analysis
- Transparency of documentation

National system

- Responsible system structuring
- Quality assurance & quality control

Etc.

■ Benefit to the parties

- Good opportunity to know other country's inventory
- Motivation for continuous inventory compilation
- Improvement of methodology, etc.
- Benefit to **Japan** and **ROK** (Example)

Japan:

- Improvement of transparency in documentation
- Research on CS methodologies in other country's inventory

Republic of Korea:

- Annual inventory compilation
- Adoption of high tier methodology

Implementation on WGIA11

Overview

Sector	Country	Number of Participants
Energy	Laos	3
	Thailand	4
Agriculture	China	2
	Myanmar	2
Waste	Malaysia	3
	Viet Nam	5

Framework of each session

A scene of the waste sector session between Malaysia and Viet Nam



- Closed sessions for limited participants
 - No observers
 - For very frank discussion
 - Supported by several facilitators

Process of ML

- **Preliminary process**

- **Announcement** : Nov. 2012
- **Application** : Mid Nov. – Mid Dec.
- **Setting of partner** : Mar. 2013

- **Main process**

- **Submission of materials** :Late Mar. – Mid Apr.
- **Material Exchange** :Early May
- **[Learning the materials** :During May]
- **Comment exchange** :Late May
- **Answer to comments** :Mid Jun.
- **Sessions** :5th Jul.

➤ WGIA secretariat support whole process of ML.

Materials used

Sector	Country	Inventory	Document for methodology	Spreadsheets	Others
Energy	Laos	SNC (in preparation)	-	UNFCCC Software worksheets	-
	Thailand	SNC in 2011	Thailand's GHG Inventory (Energy sector), etc. (in Thai)	IPCC Inventory Software	-
Agriculture	China	SNC in 2012	<u>SNC of China</u>	-	Papers for estimation models
	Myanmar	INC in 2012	<u>INC of Myanmar</u>	UNFCCC Software worksheets	-
Waste	Malaysia	SNC in 2011	<u>SNC of Malaysia</u>	IPCC Waste Model	-
	Viet Nam	Inventory on JICA Project (in preparation)	National GHGs Inventory in waste sector for year 2005	IPCC Inventory Software	-

Comment exchange

1. Category: Solid Waste Disposal on Land

<input type="checkbox"/> Methodology	<input type="checkbox"/> Emission Factor	<input checked="" type="checkbox"/> Activity Data	<input type="checkbox"/> Other
Question or Comment:			
Could you show the amount of landfills by waste type and by year in table form?			
Answer:			
See attached file; it is a confidential data. Please keep a secret.			

<input type="checkbox"/> Methodology	<input type="checkbox"/> Emission Factor	<input type="checkbox"/> Activity Data	<input checked="" type="checkbox"/> Other
Question or Comment:			
All landfills in Japan are considered 'Managed landfill' in accordance with Waste Disposal and Public Cleaning Law. Are the specific contents of this law available in relation to the design of landfills and can it be compared with the standard of 'Managed landfill' of 2006 IPCC G/L?			
Answer:			
Our 'Managed Landfill' meets the standard of 2006 Guidelines. Please refer for details to the 'Ministerial Ordinance on Technological Standards for Final Disposal Sites of Municipal and Industrial Waste.' (http://law.e-gov.go.jp/mwd/data/S52/S52F03102004001.html).			

<input type="checkbox"/> Methodology	<input type="checkbox"/> Emission Factor	<input type="checkbox"/> Activity Data	<input checked="" type="checkbox"/> Other
Question or Comment:			
The country-specific value is used for "methane generation speed constant (k)". How is the uncertainty of country-specific methane generation rate value(k) estimated?			
Answer:			
We estimate XXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXX.			
Items	Half life (y)	K value	Uncertainty of k value (%)
Kitchen garbage	***	***	***
Waste paper	***	***	***
Waste textile (natural fiber)	***	***	***
Waste wood	***	***	***
Sludge	***	***	***

■ Procedures

- Reading partner's materials carefully
- Filling up **questions and comments** on "comment exchange sheet"
- Comment exchange through the secretariat
- **Answering** to the comments
- Session on the comment exchange

Comment exchange sheet

Energy sector (1)

(Lao PDR and Thailand)

■ Overview

- Scope of mutual learning : Fuel combustion (1A) and fugitive emissions from fuels (1B)

Lao PDR

- 2000 data for preparing SNC are used for the material
- Tier 1 are used for estimation method.
- Acquired and requested basis data are mainly used and some official statistics are used as activity data.
- Revised 1996 Guideline default values are used for EFs.

Thailand

- 2000-2004 data for SNC are used for the material.
- Tier 1 is used for estimation method.
- Official statistics are used for all activity data.
- The heating values are country specific.
The Other EFs and parameters are the default values of Revised 1996 Guidelines.

Energy sector (2)

(Lao PDR and Thailand)

■ Outstanding issues

- Based on the experience of past ML on LULUCF, following items were considered, but more improvements will be still needed. (Laos)
 - ✓ Some variations on the use of EFs and parameters in energy sector;
 - ✓ Improvement of verification and QA/QC.
- Coordination between relevant ministries is insufficient. (Thailand)

■ Good practices

- Transparency: the use of notation key including explanation of the reasons. (Laos)
- There is an expert team to compile inventory. (Thailand)

■ Follow-up activity

- Both countries have already close communication such as through visits and will continue communications.

■ Suggestion for future ML

- There is extra value if ML is conducted before submission of NCs or BURs.

Agriculture sector (1)

(China and Myanmar)

■ Overview

- Focused on “4.C. Rice Cultivation” and “4.D. Agricultural Soil”.

Myanmar

- Emission Data are data of 2000 described in INC Submitted in 2012.
- Estimation methods of 2006GLs were used.
- For AD, main statistics were national statistics.
- Default EFs described in 2006GL were used.

China

- Emission data are Data of 2005 described in SNC Submitted in 2012.
- For estimation methods, CS-models were used.
- For AD, main statistics were yearbooks.
- CS-EFs constructed from domestic research papers were used.



Agriculture sector (2)

(China and Myanmar)

■ Issues and solutions / Outstanding issues / Good practice

- China's CS-EFs cover most of China's crop production area.
- Rice cultivation practices were found to be quite different between China and Myanmar.
- Good practice: Myanmar's inventory is in line with the IPCC GLs and uses spreadsheet from 2006 GLs.
- Chinese institutional arrangement for inventory is well established.
- Rate of crop residue burning in Myanmar is determined by expert judgment taking into account the management practices of lands.

■ Follow-up activity

- Myanmar will recheck some data which seem to be inconsistent.

■ Suggestion for future ML

- ML may be more fruitful to be done between neighboring countries (e.g. Japan-China, Thailand-Myanmar)
- Comparison studies of CS-EFs may be carried out based on the publications from WGIA member countries

Waste sector (1) (Malaysia and Viet Nam)

■ Overview

Malaysia

- Applying IPCC 2006 Guidelines methodology and 2006 IPCC Software
- Estimating emissions for 4A(CH₄) and 4D(CH₄ and N₂O)
- Using default values for most EFs and partly applying country-specific parameters for 4A and 4D (Tier2)
- Preparing for GHG Inventory Report for Waste Sector, NC3

Viet Nam

- Applying Revised 1996 Guidelines and GPG 2000 methodology and
- Estimating emissions for 6A(CH₄), 6B(CH₄ and N₂O), and 6C(CO₂)
- Using default values for most EFs and parameters (Tier1)
- Preparing for Greenhouse Gas Inventory Report in 2005, Waste Sector

Waste sector (2) (Malaysia and Viet Nam)

■ Issues and solutions / Outstanding issues / Good practice

- Clarifying technical issues on estimation practice on each other's national inventories, such as the use of methodology and parameters
- Acknowledging the use of different IPCC Guidelines in neighboring countries as well as their effort and challenges to comply with, such as data collection and their applications to inventories
- Recognizing that other countries is also facing the similar issues and their effort to tackle them, such as lack of statistic data (especially for industrial waste and wastewater), data collection and their approval system, and how to develop EFs in the country

■ Follow-up activity

- Exchanging technical suggestions or solutions for outstanding issues, such as the appropriate use of methodology, how to employ appropriate assumptions with regard to historical data, and emissions reporting in association with CDM project

Summary

- WGIA has introduced ML programme as one of an activity of capacity building since 2011.
- Many participants have experienced ML, and have learned other countries' inventory through the programme.
- Participants on WGIA11 were;
 - Lao PDR & Thailand (Energy sector)
 - China & Myanmar (Agriculture sector)
 - Malaysia & Vietnam (Waste sector)

Discussion

- Suggestion from participants
 - ...
 - ...
- Suggestion from secretariat
 - Feedback to parties' new inventory (NC, BUR, etc.)
 - Report on inventory improvement on future WGIA