



Summary of Mutual Learning

13th July 2017, Nay Pyi Taw, Myanmar
15th Workshop on GHG Inventories in Asia
Greenhouse Gas Inventory Office of Japan (GIO)
National Institute for Environmental Studies (NIES)



Outline

■ Background of mutual learning (ML) program

- Overview
- History
- Procedure

■ Report on each session

- Overview of each country's inventory
- Outcome of sessions
 - Energy
 - LULUCF
 - Waste



Background of ML program

Overview

■ Objectives

- To help inventory compilers improve their national GHG inventories
- To provide an opportunity to learn details of other countries' inventory
- To foster and strengthen cooperative relationships among inventory experts

■ Approach

- Active and voluntary participation of experts who actually produced the inventories
- Two-way communication of questions and answers, not one-way communication like examiner vs. examinee
- Not to criticize or audit each other's inventory, or like the UNFCCC review of Annex I Parties' GHG inventories



History

	2011 WGIA9	2012 WGIA10	2013 WGIA11	2014 WGIA12	2015 WGIA13	2016 WGIA14	2017 WGIA15
General	-	-	-	-	Japan Vietnam	-	-
Energy	Indonesia Mongolia	Cambodia Thailand	Lao PDR Thailand	Indonesia Myanmar	-	Brunei Korea	Mongolia Vietnam
IP	-	Indonesia Japan	-	-	-	Malaysia Myanmar	-
Agriculture	-	Indonesia Vietnam	China Myanmar	China Mongolia	Indonesia Lao PDR	-	-
LULUCF	Japan Lao PDR	-	-	Vietnam	Cambodia Mongolia	Indonesia Lao PDR	Lao PDR Myanmar
Waste	Indonesia Cambodia Korea	China Korea	Malaysia Vietnam	-	Korea Myanmar	Mongolia Thailand	China Philippines

- Trial implementation between Japan and Korea since 2008
- Introduction to ML activity on WGIA 8
- Added as official programme into WGIA since 2011(WGIA9)



Experienced countries

	2011 (WGIA9)	2012 (WGIA10)	2013 (WGIA11)	2014 (WGIA12)	2015 (WGIA13)	2016 (WGIA14)	2017 (WGIA15)
Brunei						✓	
Cambodia	✓	✓			✓		
China		✓	✓	✓			✓
India							
Indonesia	✓	✓		✓	✓	✓	
R.O.K	✓	✓			✓	✓	
Japan	✓	✓			✓		
Lao PDR	✓		✓		✓	✓	✓
Malaysia			✓			✓	
Mongolia	✓			✓	✓	✓	✓
Myanmar			✓	✓	✓	✓	✓
Philippines							✓
Singapore							
Thailand		✓	✓			✓	
Viet Nam		✓	✓	✓	✓		✓

- Most of the countries have already experienced the ML.



Procedure of ML

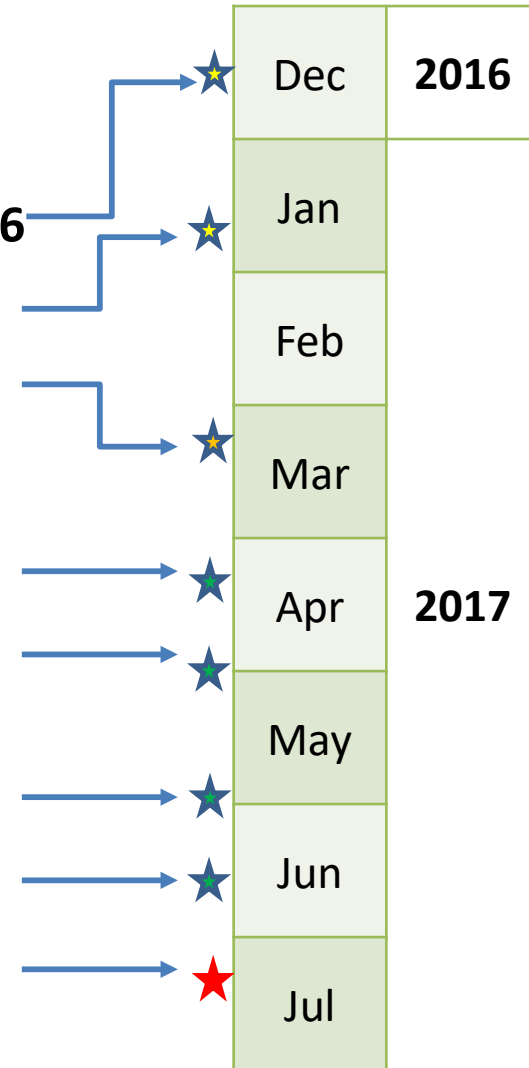
• Preliminary process

- Announcement
- Application
- Determining of partner

: December 2016
 : January 2017
 : March

• Main process

- Submission of materials : Mid April
- Material Exchange : Late April
 [Learning the materials :During May]
- Comment exchange : Late May
- Answer to comments : Mid June
- Sessions : 11 July



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 Technical Standards for Final Disposal Sites of Municipal and Industrial Waste.' (http://law.e-gov.go.jp/now/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 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 GIO secretariat
- **Answering** to the comments
- Session on the comment exchange

Comment exchange sheet

Sessions during WGIA15

Sector	Country	Number of Participants
Energy	Mongolia	3
	Vietnam	3
LULUCF	Lao	3
	Myanmar	7
Waste	China	4
	Philippines	2

A scene of the LULUCF sector session between Lao and Myanmar



- Closed sessions for limited participants
 - For very frank discussion
 - Supported by several resource persons



Report on each session

Overview of each country's inventory

Sector	Country	Inventory	Guidelines applied	Estimation Methodology	Emission factors	Activity data
Energy	Mongolia	BUR1 in 2017 (under preparation)	2006 IPCC GLs	Tier 1	Basically IPCC default values, partially CS	National Statistics
	Vietnam	BUR1 in 2014	Revised 1996 IPCC GLs and partially 2006 IPCC GLs	Tier 1	Basically IPCC default values, partially CS	Energy Balance Table in Vietnam & National Statistics
LULUCF	Lao PDR	Draft TNC	2006 IPCC GLs	Tier 1 and Tier2	CS, Default	Mainly from national forest inventory report/system
	Myanmar	INC in 2012 (inventory year 2000 spreadsheet)	2006 IPCC GLs	Tier 1	Default	Mainly from national statistics and national forest Inventory
Waste	China	BUR in 2016	1996 IPCC GLs and GPG2000/ (2006 IPCC GLs as reference)	Tier 2 and 1	CS and IPCC default values	National statistics
	Philippines	For INDC in 2015	2006 IPCC GLs	Tier 1	IPCC default values	National statistics, Estimations from Pop. statistics

1. Energy (1)

(Mongolia and Vietnam)

■ Issues and solutions / Outstanding issues

- Fuel consumption of civil aviation should be disaggregated between domestic and international flights;
- Fuel consumption of road transportation by type (car, motorcycle, etc.); should be disaggregated;
- In comparing CSEF with default values, the reason of the difference should be explained if CSEF is very lower or higher than default values;
- Fuel consumption of energy and IPPU sectors (e.g. non-energy use) should be disaggregated;
- The activity data from different sources should be matched up;
- Transition of national institutional arrangement from project-based to stable is necessary;
- Duty and responsibility among line ministries especially finance mechanisms are not identified.



1. Energy (2)

(Mongolia and Vietnam)

■ Good practices

Mongolia

- The emissions are estimated from 1990;
- The 2006 IPCC Guidelines were applied;
- The CSEFs for four types of coal was developed;
- The Common Reporting Format tables were produced for full time-series.

Vietnam

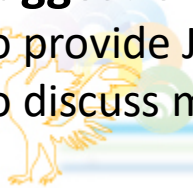
- The energy balance tables (EBT) for 2 inventory years (2005 & 2010) were provided;
- The institutional arrangement is already set up in highest level;
- 1st BUR was submitted;
- Documentation of BUR1 is well done (The NIR 2010 was provided).

■ Follow-up activity

- To estimate time-series;
- To establish and maintain sustainable national institutional arrangement;
- To develop and maintain the national EBTs.

■ Suggestion for future ML

- To provide Japan's experience especially transport category;
- To discuss manner for activity data collection (not limited to energy sector).



LULUCF sector (1)

(Lao PDR and Myanmar)

■ Issues and solutions/ Outstanding issues

- Some categories are not estimated.
- Key category analysis was not conducted, but it will be done in the future.
- Preparation of Land use change matrix were not completed, but it will be done in the future.
- Country specific parameters were not used for some categories, but it would be taken into account in the future.
- Construction of time series GHG estimations were not implemented, but it would be done in the future.



LULUCF sector (2)

(Lao PDR and Myanmar)

■ Good practices

- Institutional arrangement for GHG inventory is established and worked well. However, to make sure improvement of GHGI in the future, specifically more accuracy of activity data, the national GHGI including national experts need to be improved continuously.
- 2006 IPCC Guideline was applied for calculation of GHG emissions and removals based on well understanding of methodologies. How to apply default values and methodologies were considered carefully taking into account its national circumstance.
- Coordination with GHG inventory agency with other organization is done.
- Consistency on the time series data is required (recalculate all previous NGHGI whenever changes occurs in terms of methodology, etc)



LULUCF sector (3)

(Lao PDR and Myanmar)

■ Follow-up activities

- Improving methodologies and data, including land representation should be improved.
- Moving to higher tier for key categories with the use of country specific parameters.
- Both countries face limitation of research information. Applying good practices and/or good parameters used in the GHG inventories of similar countries (i.e south east asian countries) may help improvement.
- Quality Assurance and Quality Control (QA/QC) procedure should be implemented.
- Parameters made from one research could not be used as Country Specific Parameters. Before using it as Country Specific Parameters, quantitative assessment should be needed.



4. Waste sector (1)

(China and Philippines)

■ Issues

- AD acquisition issues persisting for solid waste treatment activities in rural areas
- Lack of separate monitoring on the amount of open-burned waste and possible double-counting with the Agriculture sector
- Lack of centralized data compilation system which collects data from enterprises through municipalities
- Necessity to develop regional EFs for wastewater treatment and parameters for solid waste disposal



4. Waste sector (2)

(China and Philippines)

■ Good practices

China

- Bottom-up data collection procedures has been in place
- The inventory system supports the domestic carbon trading
- Industry-based reporting system has been in place

Philippines

- AD estimation is based on internal assumptions using extrapolation with income class and size of city
- Institutionalized inventory management and reporting system
- By regulation, biodegradable waste must be treated at the village level and this practice contributes to reduce GHG emissions

■ Suggestion for future ML

- Focus on special topics, such as AD collection, QA/QC, key parameters (DOC, MCF, Compositions etc.)
- Have brief presentations on topics during ML



Please take advantage of
this opportunity
to improve your
inventory compilation !!!

