



SUMMARY OF WORKING GROUP 1 – WASTE

Development of Waste Statistics to Estimate Activity Data

Chair: Tomonori Ishigaki

**Rapporteurs: Ms. Wukir A. Rukmi,
assisted by Mr. Wiryawan Purboyo
and Ms. Rias Parinderati (Indonesia)**

**The 9th Workshop on GHG Inventories
in Asia (WGIA9), Wrap-up Session
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OUTLINE:

- ❖ OVERVIEW
- ❖ KEY POINTS OF PRESENTATIONS
- ❖ KEY POINTS OF DISCUSSION
- ❖ ADDITIONAL INFORMATION
- ❖ RECOMMENDATION



OVERVIEW OF WG-1 (1)

- ❖ **Chairman: Dr. Tomonori Ishigaki (NIES, Japan)**
- ❖ **Participants:**
 - Representatives from Cambodia, China, Indonesia, the Republic of Korea, Malaysia, the Philippines, Singapore, Thailand;
 - Representatives from Japan – consisting of MoE, NIES, GIO, CGER, SURC, JICA Viet Nam
 - Representative of SEA GHG Project
- ❖ **Introduction Session: Mr. Takefumi Oda (NIES)**
 - Overview of the meeting focuses on the Development of Waste Statistics to estimate Activity Data
 - Aim to address the difficulties in providing sufficient data & identification of data categories

OVERVIEW OF WG-1 (2)

- ❖ **Categorization of Asian waste sector inventory:**
 - a) Default method with not enough activity data (Cambodia, Viet Nam, Mongolia, Malaysia)
 - b) High tier but partially enough activity data (Philippines)
 - c) Low tier but many accounting sub-category with not enough category data (Indonesia)
 - d) High tier (excluding FOD) with enough activity data (Korea)
 - e) High tier (including FOD) with enough activity data (China, Thailand)

OVERVIEW OF WG-1 (3)

❖ Presenters:

- a) Mr. Kamal Uy - “Cambodia GHG Emission Estimation in Waste Sector”
- b) Ms. Elizabeth Phillips - “GHG Emissions from Waste Sector in Malaysia”
- c) Ms. Teresita Ramos Perez - “GHG Inventory from the Waste Sector in the Philippines”
- d) Mr. Chart Chiemchaisri - “Development of Waste Statistics to Estimate Activity Data: Waste Sector in Thailand”
- e) Mr. Wonseok Baek – “GHG Waste Sector in Korea” .

KEY POINTS OF PRESENTATIONS (1)

❖ Cambodia:

- Methodology: the Revised 1996 IPCC GL , etc
- Methane Emissions from SWDS: 4 steps to determine 9.69 Gg Net Annual
- Methane Emissions from Wastewater Handling: 4 steps to determine 0.46 Gg Net CH₄ emissions from domestic/commercial wastewater & sludge
- Methane from Industrial Wastewater & sludge streams: 4 steps to determine 0.03 Gg

KEY POINTS OF PRESENTATIONS (2)

❖ MALAYSIA

- Background: GHG inventory waste sector used INC activity data, EF used were from IPCC's EFDB
- Data Sources: Dept. of Statistics, local technical experts, JICA report, etc
- Assumption: All MSW in urban areas goes to dumpsite, no data on recycling, waste generation rate was based on state figures
- Total emissions from waste sector: 26,357.18 Gg CO₂-eq)
- Improvements for NC3: Improved data collection, completeness, development of local EF, capacity building
- Way forward: Improvement of activity data, & enhance capacity of inventory compilers

KEY POINTS OF PRESENTATIONS (3)

❖ PHILIPPINES

- + Subsectoral contributions (source): Solid waste, Municipal wastewater, Industrial wastewater, Human sewage
- + Emissions from waste in term of Gg CO₂-eq:
 - × INC (baseline 1994, submitted in 2000) = +/- 10,000
 - × SNC (baseline 2000,)= +/- 12,000
- + SWDS: CH₄ emissions estimation with mass balance approach (1994) and FOD model (2000)
- + Data requirements per subsector
- + Recommendations (responsible institution on data collection)
- + Sources of Data: published articles, website, etc

KEY POINTS OF PRESENTATIONS (4)

❖ THAILAND

- + Data on general statistics of MSW in Thailand: consists of Total MSW generation, waste recycling fraction, waste disposal fractions (waste treated in sanitary land fill & waste treated in open dumping)
- + Solid Waste Disposal Facilities
- + Data sources, e.g.: Pollution Control Department, Ministry of Natural Resources and Environment, etc
- + Methodology of inventory: Tier 1 and Tier 2 1996 IPCC G/L

KEY POINTS OF DISCUSSIONS (1)

❖ Cambodia's Presentation:

- + Data collection system: need to establish the waste data base management system
- + CDM waste sector: not enough provision for CDM, learning from
- + Difficulty in calculation due to different unit of source data to input in calculation system (need of unit conversion)
- + Corrective suggestion on fraction used in emission estimation from Domestic waste water treatment and discharge – need to reflect the situation of Cambodia
- + Future development: will involve academia from Royal University and other technological institute in developing country specific emission factor

KEY POINTS OF DISCUSSIONS (2)

❖ Malaysia's Presentation:

- + Law on waste management: the existing law is at municipal level
- + Emission from Agriculture waste: not yet estimated since data on agriculture waste is limited
- + Lesson learnt from Malaysia experience on waste management: using bottom-up approach (from municipal to national level – standardization of waste management)
- + Not much industrial solid waste data

KEY POINTS OF DISCUSSIONS (3)

❖ The Philippines' Presentation:

- The historical data used in GHG inventory: combination based on the availability of data
- Waste generation report: penalty for the collector if not reporting
- Prohibition of incinerator by the Government, except for hospital waste
- Waste stream: no documentation on waste stream

KEY POINTS OF DISCUSSIONS (4)

❖ Thailand's Presentation:

- Waste composition: no special regulation on waste separation, use waste composition data based on statistics resulted by study
- Responsible institution:
 - a) for collecting data on solid & liquid waste: Regional Environmental Office
 - b) for conducting National Inventory: Office of Natural Resources and Planning
- Incineration: use European Union standard & strictly monitoring
- Methodology of Tier 2: applied on the complete historical data of landfill

ADDITIONAL INFORMATIONS

- **Cambodia:** no Law but legal documents (Sub-Decree in conducting National Communication including GHG activity) – hope it can be categorized as Law
- **Indonesia:** development of Guideline of GHG Inventory Implementation on Waste Sector in Indoneisa language
- **Korea:** Presentation on GHG Inventory on waste sector (institutional arrangement , effort and reporting of emission reduction from waste sector, etc)

RECOMMENDATIONS

- Development of country specific emission factor: requirement for sharing CS EFs thorough WGIA and EFDB framewrok
- Development of activity data for each region at national level from collected local emission factor
- In order to breakthrough data statistics on waste: need coordination among the national stakehodlers (involving researchers – advice where the data can be provided)

THANK YOU