



Land Use, Land-use Change, and Forestry (LULUCF) Sector Group Discussion

SESSION REPORT

The 8th Workshop on GHG Inventories in Asia (WGIA8)
14 July 2010 (14:00 – 17:00)
Room Plaza Hall, Lao Plaza Hotel, Vientiane, Lao PDR

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Background Information



- ✓ **WGIA started the group discussion on LULUCF Sector since WGIA 7**
- ✓ **WGIA recognized that the development of a LULUCF inventory with *reasonable* accuracy is needed**
 - **To fulfill the requirement of the Convention (Article 4 and 12), and**
 - **As a basis for the nationally appropriate mitigation actions including the REDD**

Background Information

→ Theme of WGIA 7: How to Utilize RS and GIS Data for LULUCF Inventory

(Chair: Dr. Abdul Rahim Nik (FRIM, Malaysia), Rapporteur: Dr. Rizaldi Boer (CCROM, Indonesia))

→ Discussion was focused on

- Noriko Kishimoto (GSI): Utilizing Global Map for addressing Climate Change
- Yasumasa Hirata (FFPRI): Application of Remote Sensing to Forest Inventory for Identifying Deforestation and Degradation
- Savitri Garivait (JGSEE): Thailand's experience with Remote Sensing and GIS – Estimation of Biomass Burning Emissions

→ Conclusions

- Global GIS and RS data exist however uncertainty may be high while applying them to national context
- Need of sharing experience with Annex I-countries for data collection and verification
- For SEA: special focus on forest/peat fires emission inventory using RS and GIS data should be emphasized

Recommendations from WGIA7

➤ Needs:

- 1) review of the development process of the latest inventory,
 - 2) identification of remaining gaps and barriers, and
 - 3) consideration to the development of a better national inventory system;
- How to acquire relevant data nationally and globally for LULUCF inventories, including training GIS experts in deriving AD and EFs from global data, should be discussed;
- Enhancement of cooperation among experts in Agriculture and LULUCF sectors and among those in RS and GIS, in the application of RS and GIS data to the GHG inventory is needed to be considered for adopting the *2006 IPCC Guidelines*.

WGIA8 - WG3: LULUCF

Theme: Follow up on the use of Remote-sensing and GIS data for GHGI

Discussion topics

- 1. What kind of progress was made in RS technology and GIS data? (What kind of data are available now and could be available in the near future?)**
- 2. What kind of progress was made in the application to the LULUCF inventory in the WGIA countries? (Can we learn their good practices and apply to our own LULUCF inventories?)**
- 3. What kind of gaps and barriers are still to be overcome in the WGIA countries?**
- 4. How can we enhance the interaction between GHG inventory and GIS experts?**

Chair: Dr. Abdul Rahim Bin Nik

Rapporteur: Dr. Savitri Garivait

Number of participants: About 40 attendees (WGIA, Inter Agencies, Lao PDR)

WGIA8 - WG3: LULUCF

→ 7 presentations including the introduction by Dr. Junko Akagi

Leandro Buendia (SEA GHG Project Coordinator)

Progress in the use of ALU Software by Participating Countries to the SEA GHG Project

- ***Content***

- Background and need of ALU development; Background of SEA GHG Project, and Advantages and challenges of ALU implementation in SEA

- ***Discussion***

- How to include GIS data in ALU?; What source of GIS data are used for the case studies from the Philippines and Cambodia? ; What results are obtained for the adjustment of ALU for the SEA countries?; and How ground survey may help conducting GIS-RS data verification?

WGIA8 - WG3: LULUCF

Yasumasa Hirata (FFPRI, Japan)

Potential of RS/GIS data for GHG inventory in forest sector

- *Content*

Methodology of Forest monitoring by RS; what are the gaps between RS and definition of deforestation and forest degradation; Challenges of forest monitoring for C accounting (REDD); Uncertainties issues; Further issues on spatial resolution; and Example on Japanese national forest resources database for forest inventory highlighting the need of activity data to quantify C stock.

- *Discussion*

What are limitations of ALOS-PALSAR data for GHGI?; How to distinguish deforestation and degradation (should we develop a reference level to quantify forest degradation?)?; Is there any resolution limitation when using RS data for GHGI?

WGIA8 - WG3: LULUCF

Noriko Kishimoto Hosonuma (GSI, Japan)

Utilization of Global Map for GHG Inventory

- *Content*

What data are available in the Global Map?; Why the Global Map was developed? What are the data sources of Global Map? How to use the Global Map?; Initiatives on organizing Training Workshops for regional experts.

- *Discussion*

Clarification on the methodology and if it would be possible to get the age of forest by RS; What information could be obtained from the change rate information of the Global Map?; What is the accuracy of global map compared to the ground formulated map?; How to distinguish between natural and planted forest? What are the data requirements to distinguish natural from plantation?; Enhancement of coordination between GHGI and Global Map Expert Training initiatives.

WGIA8 - WG3: LULUCF

Rizaldi Boer (Indonesia)

Indonesia's experience with the RS and GIS data - The Development of GHG Inventory for LULUCF-Indonesia

- ***Content***

How LULUCF is included in the GHGI of the SNC; How is the inter-annual variation; Use of Landsat7 ETM+ and GPG 2003 and GL 2006 land classification to support the GHGI; Use of satellite and statistical data for data validation; In the SNC, the peat fires emission is not included although a country-specific methodology for the emission estimation was developed by Boer et al. (2009): the details of the methodology were presented.

- ***Discussion***

What are the causes of peat fires? Clarifications on the developed country-specific methodology to estimate peat fires emissions; How to improve the quality of AD in case of peat fires?; How to better use data from MODIS to improve the assessment of Area and Depth of the Burning.

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Savitri Garivait (Thailand)

Thailand's Experience with Remote Sensing and GIS Data – Estimation of Biomass Burning Emissions and Application of RS-GIS data for Emission Inventory

- ***Content***

How the estimation of biomass burning in GMS was developed using RS-GIS data (reminder of WGIA7)?; Application of RS-GIS data to inventory of C stock at provincial scale: Case study of Ratchaburi; Future work: Application of ALU to Ratchaburi to support the development of LCS scenario.

- ***Discussion***

Causes of biomass burning in Thailand? How to estimate the amount of biomass burned? Limitations in the use of land-use matrix resulted from RS-GIS data; Need of RS and GIS data verification; Importance of keeping high disaggregation for land classification especially for the inventory at provincial scale.

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Min Zaw Oo (Myanmar)

GHG inventory in LULUCF Sector of Myanmar

- *Content*

Introduction on GHGI of Myanmar with 2000 as base year; LULUCF GHGI: Details of the methodology (IPCC 2006 GL), How to identify sinks and sources?; What are the obtained results?; and What are the data gaps and constraints?

- *Discussion*

What are difficulties of using IPCC 2006 GL for LULUCF inventory? Uncertainties of projection to 2020; Improvements required for including biomass burning emissions in the inventory; How to account home and garden trees in the inventory?; and Myanmar's government initiatives on replanting.

WGIA8 - WG3: LULUCF's General Recommendations

- **Need of further discussion on how to use RS to quantify forest (case study of LANDSAT or other RS data use might be good)**
- **Effort on estimation of peat emissions should be pursued in the region (Indonesia and Malaysia) – Water drainage; Uncertainty analysis; Uncertainties due to RS data.**
- **Needs of developing methodology for quantifying C stock change in the region using RS-GIS – criteria for selection of base year, RS data, soil data, climate data, reference level, ...**
- **Getting updates of new available data is required for WGIA members (Satellite WG, other new free high resolution data available, ...)**
- **Interaction between GHGI and REDD should be strengthened**
- **Future discussion on MRV is required (Institutional issues are important; Need to know other country's systems; How to define baseline and link to NAMA, ...)**

WGIA8 - WG3: LULUCF's General Recommendations

- **Need of getting updates on available softwares to support LULUCF GHGI – ALU, IPCC 2006 GL; ...**
- **GIS map of soil, climate and LU of SEA is required to facilitate the use of softwares dedicated to support LULUCF GHGI**
- **Need of strengthening the coordination of GHGI and RS-GIS expert initiatives: Training and WS**
- **WGIA countries are encouraged to access currently available RS data, e.g. USGS, Google Earth, Land Cover Map from ESA, ... to support their LULUCF GHGI**



Khob Jai Lai Lai
Thank You