

Summary from LUCF Working Group

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Key Issues

- Methods for deriving Mean Annual Increment
- Approaches to estimate the uncertainty of the estimates
- Experiences in using IPCC-GPG Guidance for LULUCF (Stock Change Approach)
- Proposals for Improving National Capacity to improve National GHG Inventory for LUCF sector

Methods for deriving MAI

- Indonesia presented a number of approaches to estimate MAI
 - Natural Forest (Logged-over forest) using Reported Tree Diameter Increment Data collected by Forest Concession Companies
 - Plantation Forest using Wood Volume Data
- The selection of MAI for a certain forest categories has huge impact of the estimate of carbon removal. Level of certainty for the MAI for such forest categories is very crucial to increase the reliability the estimates. The key forest categories (of the 26 land use/forest categories) for Indonesia were production forest, conversion forest, rubber plantation and coconut/palm oil plantation. These four forest categories contributed to about 52% of total carbon removal of the country

Methods for deriving MAI

- Cambodia experience from field measurement study on MAI, ecological condition of forests affect very much on the MAI. However, such information is not taken into account in making Cambodia 1994 inventory as inventories were developed based on “national forest classification only
- Malaysia has conducted good forest inventories four times (every 10 years) and the results are a good basis for improving the National GHG Inventory for LUCF sector. However, such resources have not been used by the National Inventory Team.

Approaches to estimate the uncertainty of the Estimates

- Indonesia presented two cases in assessing the uncertainty of the GHG Inventory for LUCF:
 - Monte Carlo simulation is found to be a good approach however this approach may lead to a greater uncertainty if the availability of the data is limited (e.g. Monte Carlo simulation requires information on standard deviations of the AD and EF where these values are readily available). Malaysia could benefit from using this approach as it has a better database of the AD and EF from its forest inventory.

Approaches to estimate the uncertainty of the Estimates

- ICRAF demonstrated the relationship between simplifying land use/forest categories (AD) and overall uncertainty of the Carbon stock estimates
 - **Broad land use categories are desirable to reduce classification error (eg. Forest, Tree-based, non tree-based, non-vegetation, settlement), however, there is a need to have C-stock samples in finer categories structured in a hierarchy that allows grouping into the broad categories used in image classification (to ensure that the combined land use/forest categories have slight different in C-Stock)**

Experiences in using IPCC-GPG Guidance for LULUCF (Stock Change Approach)

- Japan has applied Carbon Stock Approach (IPCC-GPG for LULUCF) in developing its GHG Inventory. Some important findings
 - The stock change method will provide good results if very accurate forest inventories are available, otherwise default method is recommended
- The choice of using default or stock change method at the appropriate tier level will therefore be a matter for expert judgment.

Experiences in using IPCC-GPG Guidance for LULUCF (Stock Change Approach)

- The challenges for tropical countries are
 - There are big differences of MAI between natural/plantation and among species,
 - Many stands composed of various species, and
 - There are a lot of natural regenerated forests and natural forests
- Single approach may not provide good inventory in tropical zone and tropical countries will need more works to do related to the above issues
- In the context of NATCOM, can developing countries uses combination of the two approaches as appropriate?

Proposals for Improving National Capacity to improve National GHG Inventory for LUCF sector

- The WGIA should play role in facilitating the countries to
 - develop link and collaboration with other national, regional, International organizations to improve their inventories (e.g. opening access to satellite image database owned by the organizations)
- NIES may need to focus on disseminating works that have been done by the WGIA and how the countries can make use of these group to contribute to the process of the development of National GHG Inventories (e.g. developing list of targeted stakeholders/sectors that should receive the publications/articles produced by the NIES and the Group etc)

Proposals for Improving National Capacity to improve National GHG Inventory for LUCF sector

- For tropical countries, more supports are needed to improve their GHG inventories for LUCF sector