Potential Role of Regional Networks for Improving GHG Inventories

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Background (1)

- Almost all the Parties estimated, at least for one year, emissions of CO_2, CH_4 and N_2O.
    - Twelve Parties (10 per cent) reported for the year 1990, and 94 Parties (77 per cent) for the year 1994, and the remaining Parties (13 per cent) reported for various years.
    - A total of 107 Parties (88 per cent) provided emission estimates for some or all GHG precursors. Fifteen Parties (12 per cent) did not provide estimates of these gases.
    - Eighteen Parties (15 per cent) provided estimates of HFCs, PFCs and/or SF6. Sixty-four Parties (52 per cent) reported emission estimates of sulphur dioxide (SO_2).
- All Parties followed the IPCC Guidelines in compiling their national GHG inventories. Most Parties (89 per cent) used the Revised 1996 IPCC Guidelines; some Parties (11 per cent) used the 1995 IPCC Guidelines either as sole guidance or, in very few cases, in combination with the Revised 1996 IPCC Guidelines.

Background (2)

- Limitations identified in NAI National Communications
  - Unavailability, quality, and lack of disaggregated data required to apply IPCC methodologies.
  - Some country-specific problems were also encountered:
    - the inappropriateness of most default emission factors;
    - the difficulty of obtaining activity data in a suitable format;
    - differences in statistical categories and definitions;
    - an inappropriate forest classification;
    - the need to adjust the methodology for rice cultivation;
    - the need to develop a methodology for estimating methane from reservoirs;
    - the need to identify other potential sinks of CO_2;
    - difficulties in calculating emissions from waste combustion;
    - the lack of default values for SO_2 emissions from the mining and metallurgy industry; and
    - inappropriate classification of eco-climatic zones.
  - Almost half of the Parties (55) reported uncertainties, 11 of them providing the information quantitatively, 33 qualitatively, and 11 both qualitatively and quantitatively. The sectors covered in estimating the range of uncertainty were more often energy, agriculture and land-use change and forestry (LUCF), and in some cases the waste and industrial sectors.

Background (3)

- About half of the Parties reported that some important activity data were either lacking, or, not accessible due to inadequate data collection and/or management systems. Most Parties reported generally on this issue, but some elaborated on their needs, relating mainly to the energy and forestry sectors. These needs were often identified as a lack of institutional capacity for the collection, archiving and management of data for preparing the inventory and systematization/standardization of activity data.

- The source of the national activity data used for the emission estimates of the different sectors and source categories was referenced by many Parties with varying levels of detail, even though this information is not explicitly requested by the UNFCCC guidelines. Parties indicated that activity data were obtained from various national sources, such as national statistics provided by the respective ministries, municipalities and agencies, or from industrial facilities. In some instances, expert judgment was also used when data were not available.

Background (4)

- Sixty-eight Parties reported that the default emission factors provided by the IPCC Guidelines often did not reflect national circumstances well, so their use in inventory calculations led to uncertainties in the national GHG inventory estimates. The inappropriateness of the IPCC emission factors was reported more often for the industrial processes and waste sectors, and to a lesser extent for agriculture and LUCF. Parties sometimes mentioned large uncertainties in the emission estimates as a result of the unavailability of emission factors specific to national circumstances, for example, in small island developing States (SIDS).

- The IPCC Guidelines encourage the development and use of local emission factors that suit national circumstances. However, most Parties used only IPCC default methods. It is only in the recently submitted national communications (over the past two years) that one can notice an increase in the number of Parties who have developed their own emission factors for one or more sectors of their national GHG inventory. These mostly relate to the energy and agriculture sectors, that is, to the most important emitting sectors

Background (5)

- Most Parties expressed their financial and technological needs in order to ensure the continuous collection and archiving of data with a view to improving future inventories. This warranted the establishment and maintenance of stable national institutions and inventory teams. The improvement of infrastructure coupled with more efficient equipment and better facilities would permit the creation and/or strengthening of statistical systems for managing basic information relating to GHG emissions on an ongoing basis. Parties also expressed the need to establish a reliable and effective GHG inventory database system.

- Financial and technical assistance is also needed for improving data quality (availability, accuracy and reliability) in various key socio-economic sectors, particularly in the LUCF sector. For many Parties, data are either lacking or highly uncertain. Specific technical needs relate to establishing systematic mechanisms to collect data, undertaking field studies and validation of emission factors, carrying out further surveys in order to reduce uncertainties in activity data, improving the use of methodologies to determine forest area, improving institutional capacity to collect forest data, and improving and expanding carbon sequestration studies.

- Parties also expressed the need to improve the availability and reliability of data through active cooperation with relevant government departments and agencies, industry, non-governmental organizations and other institutions that provide, collect and maintain relevant data. Access to adequate training was also considered to be an important element in enhancing local technical capacity and expertise in data collection, management and dissemination.

Background (7)

- Parties also referred to the need to strengthen the capacity of institutions involved in the preparation of the GHG inventory, including the training of personnel. Some Parties requested assistance to expand the scope of their original inventories by including other gases.

- Some Parties stressed the need to develop a comprehensive energy balance to help compute GHG emissions in the energy sector on a continuous basis, and a few pointed out the need to link the energy balance with GHG emissions methodologies such that data changes in the energy balance are automatically reflected in the GHG emissions values.

- Some Parties stressed the lack of data on household consumption of biomass fuels, and requested funds to conduct and update, on a more sustainable basis, studies to gather consumption data for conventional and non-conventional fuels.

- Some Parties outlined technological and financial difficulties encountered in collecting data in the transport sector for accurate estimates of vehicular emissions and in measuring and applying default values for data sets.

- Several Parties indicated the need to undertake research studies on savannah burning, as well as the need to generate data on crop residues to help estimate emissions from burning of agricultural residues.

- Several Parties expressed a need for the training of personnel in the compilation and analysis of GHG inventories as well as in order to keep abreast of refinements to the IPCC methodologies.

- More generally, some Parties expressed the need for support for research on emission factors and for obtaining relevant activity data, and the need for GHG inventory workshops to help improve the expertise of national experts was also mentioned.

Perceived needs

- Activity data – energy and LULUCF, in particular. Underlying national statistics.
- Relevant emission factors.
- Institutional and personnel capacity (data collection, analysis, judgment, inventory compilation and reporting) and continuity.
- Inventory databases.
- Supportive research.
- QA & QC
- Wider participation and use of outside expertise.
- International assistance and collaboration!

Future Needs?

- More accurate and complete inventories –
  - Improved activity data and relevant Efs?
  - Time series?
- More elaborated inventories –
  - industrial subsectors?
  - Geo-referenced land use?
  - Provision of detailed emission data for policy-makers?
    - For mitigation actions.
    - Estimation of climate co-benefits.
    - Efficient industry development.
    - Supportive role relevant to CDM and NAMAs.

Benefits from regional collaboration?

- Sharing expertise, information and experience
    - Activity data – energy and LULUCF, in particular. Underlying national statistics.
    - Relevant emission factors.
    - Institutional and personnel capacity (data collection, analysis, judgment, inventory compilation and reporting) and continuity.
    - Inventory databases.
    - Supportive research.
    - QA & QC
    - Wider participation and use of outside expertise.
- Regional roster of experts and institutions?
- More formalized mutual informal review?

Just some food for thoughts!