

## **Annex 2: Good Practice in Inventory Preparation**

This section outlines the framework agendas for good practice recommendations workshops, including a matrix of issues and list of workshop inputs and outputs.

### ***Introduction***

At the Expert Group Meeting, a subgroup met to discuss the development of good practice guidance in inventory preparation, to enable IPCC to fulfil a request to prepare a report on good practice in inventory management as outlined in the Introduction. To initiate work on this report, a series of sector-level expert meetings will be held to discuss specific issues related to good practice in inventory preparation for sources within that sector. Thus, the specific focus of the sub-group was to describe good practice in inventory management, to prepare a framework agenda for the sector workshops, and to identify the technical materials needed in advance of the sector workshops. The sub-group also discussed a schedule for the workshops.

The following documents reflecting the sub-group's discussion are included in this Annex:

- Proposed framework agenda for the sector workshops;
- Proposed Schedule and location for sector workshops;
- List of materials to be compiled in advance of the sector workshops (taken from the column labelled "inputs" on the matrix table);
- List of outputs from sector workshops
- Matrix Table on Issues for Sectoral Workshops to Consider

## ***Proposed Framework Agenda for Sector Workshops***

The aim of the sector workshops is to develop further the framework for good practice guidance for emission sources. Issues to be covered will include a process to choose among the IPCC methodological tiers for various sources, as well as determining good practice in data collection and emission factor development/selection/verification, inventory calculations, quality assurance and quality control, and reporting and documentation. Sector workshops will also assess issues related to uncertainty assessment for input into the general workshop on uncertainty.

The Paris meeting identified six elements of good practice for consideration at the workshops:

1. Completeness – Inclusion of all anthropogenic sources, consistent with *1996 Revised IPCC Guidelines*, taking account of:
  - (a) the need for consistent use of definitions (e.g. NA, NO, NE, IE, 0) within sectors, including thresholds for non-reporting
  - (b) meaning of “other” categories (any missing anthropogenic sources within sector)
2. Methodological Issues – These will likely be addressed by source, in break-out groups at the workshops for the key sources in sector. Methodological issues include:
  - (a) Framework for the good practice method, specifying a process for identifying the method that is as rigorous as possible while still being appropriate for the selected country/region
  - (b) Recommendation for developing emission factors, (including regional, national, technology-based information, as available) or key model parameters in the context of good practice
  - (c) Recommendations on collecting activity data in context of good practice.
  - (d) Identify key elements in the choice among methods (e.g., the structure of decision trees). The workshops should consider the use of decision trees to formalise the decision-making processes associated with (a) to (c) above.
3. Inventory Quality
  - (a) Review general information requirements for QA/QC systems (e.g. by looking at the QA/QC frameworks specified in ISO 9000, EIIP) with respect to particular sources
  - (b) Identify information needed to provide transparency
    - tier used
    - rationale for approach
    - replicability
    - documentation and references
    - explanation of key factors and assumptions and any changes in them
  - (c) Consider scope and content of public/peer reviews
  - (d) Verification and validation undertaken by Party; identification of data sources suitable for verification
4. Uncertainty Assessment – Consideration of key issues identified by the Uncertainty Group at the expert workshop. Key questions for consideration include:
  - (a) Can default quantitative uncertainties be identified for the default emissions factors recommended for specific sources?
  - (b) What is the appropriate level of uncertainty analysis for a particular sector or source?

- (c) What types of uncertainty assessment are most appropriate for various sectors, sources or sub-sources? Are some emissions sub-sectors suitable for quantitative uncertainty estimates? What caveats are necessary on quantitative uncertainty estimates?
  - (d) Can areas of potential covariance between emissions estimates for different sources or sub-sources be identified?
  - (e) Are there specific weak spots or areas of inconsistency within a source or sector that should be addressed in uncertainty analysis (i.e. missing sources, systematic errors, trend errors...)?
  - (f) What documentation will be necessary for the default and specific uncertainty estimates?
5. Reporting Issues – consider technical adequacy of current reporting requirements
- (e) Review relevant standard tables & IPCC worksheets for technical adequacy
  - (f) Level of desegregation of national average data
  - (g) Useful data for external verification
6. Identification of Priority Areas – identify key issues for further research or analysis for each source

***Proposed Schedule and Location for Sector Workshops***

The Paris meeting identified the need for the following workshops:

Topic	Location	Date
1. Industrial Emissions – especially high-GWP gases, but also other industrial processes	US (Washington DC)	Jan 27-30
2. Agricultural Sources	Netherlands	Feb 24-26
3. Energy, Fugitives & Transport	Czech Republic	April 1999
5. Waste	Brazil	July 1999
4. Uncertainty Assessment and Inventory Management	United Kingdom	October 1999
6. Concluding Workshop	Australia	Feb 2000

No workshop is at present proposed on land use, land use change, or forestry because the IPCC Special Report will cover inventory issues.

***List of materials to be compiled in advance of the sector workshops***

1. Compilation of Relevant Guidance – Workshop participants should have copies of relevant sector of the IPCC 96 Guidelines as background for the workshops, and be familiar with them including the reference material, copies of standard worksheets, and copies of formal reporting tables for the sources and gases covered at each workshop.
  - For sources at each workshop, copies of formal reporting tables
2. General Background Paper – In preparation for all sector workshops, a general paper summarising key issues from a general perspective should be prepared. It should include discussion of:
  - Selection/use of emission factors (including assessment of the recent scientific literature since the IPCC 1996 Revised Guidelines were published for material relevant to their implementation )
  - Selection/use of activity data (including the identification of related data sets for cross-checking.)

- For use of terms (NA, NE, etc.)
  - Considerations for QA/QC
  - Considerations for transparency, verification and validation
  - Considerations for uncertainty assessment (taken from materials presented at the Expert meeting & the questions identified for consideration at the sector workshops)
3. National Inputs – Prior to the workshop, expert participants should review their current inventory practice for key sources and prepare brief summaries. Areas to cover include:
- Completeness: how are terms used
  - Emission factors
  - Activity data
  - QA/QC systems
  - Efforts to ensure transparency
  - Uncertainty analysis
  - Reporting practices
  - Priority areas for further research

4. Background documents for key sources

For key sources, a document synthesizing current practice with respect to the issues to be discussed at the meeting, and (where possible) identifying specific options on good practice for consideration at the meeting. At a minimum, the documents would cover the six elements of good practice identified at the meeting and numbered 1 to 6 above (completeness, methodological issues, etc.)

List of Outputs from Sector Workshops:

The Sector workshops should provide good practice guidance on:

- Completeness and priorities
- Choice of estimation methodology, including emission factors or equivalent model parameters, probably formalised by use of decision trees
- Choice of activity data to use with estimation methodology, again probably formalised by use of decision trees
- Relevant aspects of QA/QC, transparency, verification and validation
- Methods for analysing uncertainties, including consideration of likely uncertainties for emissions factors (or equivalent model parameters) and activity data in proposed good practice methodologies

***Format Reporting requirements, converting standard data tables, electronic formats, etc.***

***Products of the Sector workshops***

The background documents for key sources referred to above will be discussed at the workshops and each breakout group will develop draft good practice guidance for its source. These good practice guidance documents will be reviewed and compiled into a workshop report for each sector workshop. After all of the sector workshops are completed, the good practice guidance for all sources shall be compiled into a draft report prior to the Concluding Workshop, and will form the basis for the report on good practice in inventory management that the IPCC has been requested to provide to SBSTA.