INTERGOVERNMENTAL PANEL ON climate change

Task Force on National Greenhouse Gas Inventories (TFI)

IPCC Expert Meeting for Technical Assessment of IPCC Inventory Guidelines (Cross-sectoral issues)

Wollongong, Australia, 27 – 29 April 2016

Co-Chairs Summary

1. In accordance with the IPCC Trust Fund programme and budget for the year 2015 and 2016 (approved by the IPCC at its 40th Session and its 42nd Session, respectively), the IPCC Task Force on National Greenhouse Gas Inventories (TFI) is implementing technical assessment of IPCC Inventory Guidelines. This work is to assess where science and data availability have developed sufficiently since the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (*2006 IPCC Guidelines*) to support the refinement or development of methodological advice for specific categories and gases, with a view to identifying any specific areas or issues to be prioritized. Another aim is to conduct technical assessments on cross-sectoral issues, including improvement of user-friendliness of other inventory tools of the IPCC with a view to contributing to capacity development programmes.
2. This technical assessment is being undertaken through a combination of an on-line questionnaire survey and expert meetings. The on-line questionnaire survey was conducted from 30 January to 27 February 2015, and 243 experts submitted a total of 987 comments to the Technical Support Unit for the IPCC TFI (TFI TSU). Among these 987 comments, 155 were on the cross-sectoral issues such as those covered in Volume 1 of the *2006 IPCC Guidelines*.
3. Following the on-line questionnaire survey, two expert meetings focusing on Energy, Industrial Processes & Product Use (IPPU), Waste and Agriculture, Forestry and Other Land Use (AFOLU) sectors were held in 2015 to assess the maturity of scientific advances and the availability of new data, and to identify any specific areas or issues that should be prioritized in TFI's future work, taking significance & prioritization criteria (see Box 1) into account.

Box 1: Significance and prioritization criteria (previously agreed in the Terms of Reference for this work)

- Significance of the source/sink and the gas within the sector on a global scale. Sources significant only for a limited number of particular countries currently or in the foreseeable future may not meet this criterion. The adequacy of the existing guidance for a particular category should be considered, as should the likelihood that new information would lead to a definite improvement in the IPCC Guidelines.
- Availability of relevant new scientific results.
- Sufficient data availability and maturity of scientific advances since 2006 to provide a basis for methodological development or refinement, including:
    - Ability to develop new or updated default emission/removal factors
    - Feasibility of obtaining the necessary data to implement the methods
- Emergence of new sources or gases meeting these criteria

5. Taking the outcome of the 2015 expert meetings, the Bureau of TFI (TFB) made a proposal to the IPCC, at its 43rd Session held in Nairobi, Kenya on 11-13 April 2016, to produce a Methodology Report(s) to refine the *2006 IPCC*

Guidelines. The IPCC approved this proposal[1], and decided to consider the draft Methodology Report(s) at a Plenary session of the IPCC in May 2019[2].

6. With this background, this expert meeting was held as one of a series of technical assessment of IPCC Inventory Guidelines mentioned in paragraph 1 above, with the aim to discuss cross-sectoral issues identified during the on-line questionnaire survey mentioned in paragraph 2 above and two expert meetings held in 2015. This meeting was held back to back with the expert meeting held on 25-26 April 2016 in Wollongong, Australia, to follow up on specified issues from the 2015 expert meetings.

7. The meeting considered comments submitted by experts in response to the on-line questionnaire survey, particularly on the issues identified as high priorities through the prior analysis made by the TFI TSU. This was with a view to making recommendations to the TFB on the following:

    - Cross-sectoral guidance for which the science is sufficiently mature and data/information are available to recommend refinement or development of inventory guidance;
    - Where such refinement or development on the basis of this new information would lead to a noticeable improvement of the *2006 IPCC Guidelines*;
    - Specific type of refinement or updating that is needed for cross-sectoral guidance/tools;
    - References that may be used for refinements; and
    - How these refinements could be made (i.e., suggested possible way(s) to address issues).

8. The issues were considered and discussed through the following two break-out groups (BOGs):

    - BOG1: Approaches to Data Collection, Time Series Consistency and others
      (Co-facilitators: Ms. Riitta Kristiina Pipatti and Mr. Jamidu Hizzam Yahaya Katima, Rapporteur: Mr. Marcelo Theoto Rocha)
    - BOG2: Uncertainties, QA/QC & Verification, Precursors and Indirect Emissions
      (Co-facilitators: Mr. John David Watterson and Mr. Bundit Limmeechokchai, Rapporteur: Mr. Stephen Michael Ogle)

9. The following issues were identified as potential elements/areas for refinements to be made by producing a Methodology Report(s). Details of conclusions are presented in Annexes 1 and 2 to this summary.

    Issue relevant to all Volumes
    - Improvement of transparency and applicability of default emission factors by adding more rationale, references and background information on the parameters used for estimating them

    Issue relevant to Volume 1, Chapter 1: Introduction
    - Clarification of the concept of "anthropogenic emissions and removals"

    Issues relevant to Volume 1, Chapter 2: Approaches to Data Collection
    - Provision of additional guidance to develop country-specific emission factors
    - Provision of additional guidance on activity data collection with regard to, for example, clarity on representative sample, treatment of confidential data
    - Provision of guidance on integration of GHG emissions reported from facilities into national GHG inventories
    - Provision of guidance on use and reporting models

    Issues relevant to Volume 1, Chapter 3: Uncertainties
    - Refinement of guidance on uncertainty based on the latest scientific knowledge and simplification of guidance by providing more default values, calculation examples and best practices, taking the following into consideration:
        - ✓Incorporation of methodological development and/or case studies on issues, such as spatial variability, regional upscaling, correlation/autocorrelation, resampling techniques, addressing representativeness of data, trend analysis, population vs. mean variance

[1] Decision IPCC/XLIII-8. Update of methodologies on National Greenhouse Gas Inventories

[2] Decision IPCC/XLIII-7. Sixth Assessment Report (AR6) Products. Strategic Planning

- ✓Provision of additional simplified explanation of procedures with case studies and decision trees
- ✓Expansion of good practice guidance for Monte Carlo simulations
- ✓Discussion on how to use uncertainty as a way to improve the inventory development
- ✓Discussion on how to propagate uncertainty when applying Approach 1 for some sources and Approach 2 for others
- ✓Discussion on how to address large percentage uncertainties when using Equation 3.1 in Chapter 3, Volume 1 of the *2006 IPCC Guidelines*
- ✓Inclusion of guiding principles for conducting an uncertainty analysis

Issue relevant to Volume 1, Chapter 4: Methodological Choice and Identification of Key Categories

- Provision of additional guidance on key category analysis, in particular on, for example., the suggested level of disaggregation of categories, the consistent definition of "significant subcategories" across different parts of the Guidelines. (This issue is relevant also to associated sections in the other Volumes of the *2006 IPCC Guidelines*.)

Issues relevant to Volume 1, Chapter 5: Time Series Consistency

- Provision of additional guidance on time series consistency, e.g., by incorporating examples of country approaches, by exploring availability of new methods/techniques to ensure time series consistency
- Provision of guidance on applicability of emission factors over time

Issues relevant to Volume 1, Chapter 6: Quality Assurance/Quality Control and Verification

- Development or improvement of guidance on the verification using other estimation results like FAOSTAT emissions database and GHG concentration in atmosphere by satellite observation (remote sensing data)

Issues relevant to Volume 1, Chapter 7: Precursors and Indirect Emissions

- Provision of clearer guidance for the calculation of indirect CO_2 emissions

10. In addition, the following issues were identified as potential elements/areas for refinements that can be made by other means than producing a Methodology Report(s), namely: by using the Frequently Asked Questions (FAQs) on the website and/or producing technical bulletins.
    - Improvement of accessibility and user-friendliness of IPCC inventory guidance, including background information underlying the guidance
    - Addition of examples of tools that could be useful for the purposes of QA/QC, verification or validation
11. The meeting also noted the following:
    - When producing a new Methodology Report(s) to refine the *2006 IPCC Guidelines*, care must be taken to ensure consistency in using key words or concepts such as "good practice" across the different sectors.
    - Instructions on "reporting and documentation" sections may need to be prepared for authors of a new Methodology Report(s) to ensure consistency across the different sectors, because several changes being proposed for a new Methodology Report(s) will have an impact on these sections.
    - It may need to be highlighted in FAQs that the IPCC Guidelines can be applied for different purposes (e.g. mitigation activities).
    - The glossary in the *2006 IPCC Guidelines* may need to be updated.
12. Recommendations from this meeting are forwarded to TFB for consideration, and eventually to the scoping meeting for the Methodology Report(s) referred to in paragraph 5 above which will be held in August 2016. The scoping meeting will consider the scope and format of the Methodology Report(s). Draft terms of reference, draft table of contents and draft work plan for the proposed Methodology Report(s) will be prepared at this scoping meeting, and will be submitted to the 44th Session of the IPCC for its consideration and approval.

Annex 1: Report from break-out group 1 (BOG1)

Annex 2: Report from break-out group 2 (BOG2)