

**IPCC Expert Meeting for Technical Assessment of IPCC Inventory Guidelines:
follow-up on specified issues from the 2015 expert meetings**

Wollongong, Australia, 25 – 26 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. 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

4. Following the two expert meetings in 2015, the Bureau of TFI (TFB) for IPCC AR5 cycle considered the outcome of those meetings and concluded that some of the issues identified would need further in-depth consideration by relevant experts. Subsequently, the new TFB for IPCC AR6 cycle¹ decided, taking into account the conclusion of the

¹ At the 42nd Session of IPCC in Dubrovnik, Croatia on 5-8 October 2015, election of a new IPCC Bureau and a new TFB for the Sixth Assessment Report cycle (AR6 cycle) took place.

former TFB, to organise an expert meeting in April 2016 to follow up on specified issues from the 2015 expert meetings.

5. In addition, taking the outcome of the 2015 expert meetings, the 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 proposal², and decided to consider the draft Methodology Report(s) at a Plenary session of the IPCC in May 2019³.
6. With this background, this expert meeting in Wollongong was held, aiming to focus on four main areas as follows. These were identified by the 2015 expert meetings as potential issues that may need to be addressed in a new Methodology Report(s), but considered requiring further consideration before the work to produce a new Methodology Report(s).
 - (i) Unidentified sources of perfluorocarbons (PFCs);
 - (ii) Emissions from soils;
 - (iii) Land representation; and
 - (iv) Emissions from flooded land
7. The ultimate objective of this meeting was to make recommendations to the TFB on whether these issues need to be addressed in a new Methodology Report(s) to refine the *2006 IPCC Guidelines*. Key considerations included, among others:
 - Whether the science is sufficiently mature and data are available to recommend refinement or development of inventory guidance;
 - Whether such refinement or development on the basis of this new information would lead to a noticeable improvement of the *2006 IPCC Guidelines*;
 - If refinement of the *2006 IPCC Guidelines* is considered necessary with regard to that issue, what type of refinement is needed (e.g., update or addition of default values, elaboration of existing guidance, etc.)
8. The issues were discussed through four break-out groups (BOGs) that were:
 - BOG1: Unidentified sources of perfluorocarbons (PFCs)
(Facilitator: Ms. Deborah Ottinger, Rapporteur: Mr. Rob Sturgiss)
 - BOG2: Emissions from soils
(Co-facilitators: Mr. Fahmuddin Agus and Ms. Maria Jose Sanz Sanchez, Rapporteur: Mr. Douglas Mac Donald)
 - BOG3: Land representation
(Co-facilitators: Mr. Jim Penman and Mr. Nijavalli H. Ravindranath, Rapporteur: Mr. Marcelo Theoto Rocha)
 - BOG4: Emissions from flooded land
(Facilitator: Ms. Catherine Ellen Lovelock, Rapporteur: Ms. Andrea Brandon)
9. Main conclusions of discussion by each BOG are as listed below. Details of conclusions are presented in Annexes 1 – 4 to this summary.

Unidentified sources of perfluorocarbons (PFCs)

 - Refinement of the *2006 IPCC Guidelines* is feasible and needed. The following elements were recommended to be addressed in a Methodology Report(s) referred to in paragraph 5 above:
 - Emissions of PFCs from aluminium industry (e.g., development of new guidance on “low-voltage anode effect” emissions)
 - Emissions of PFCs from semiconductor industry (e.g., update of Tier 2 default emission factors)
 - Emissions of F-gases from fluorochemical production (e.g., update of Tier 1 default emission factor)

² Decision IPCC/XLIII-8. Update of methodologies on National Greenhouse Gas Inventories

³ Decision IPCC/XLIII-7. Sixth Assessment Report (AR6) Products. Strategic Planning

- Emissions of PFCs and CO₂ from production of rare earth elements (e.g., development of new guidance)

Emissions from soils

- Refinement of the *2006 IPCC Guidelines* is feasible and needed. The following elements were recommended to be addressed in a Methodology Report(s) referred to in paragraph 5 above:
 - Emissions of CO₂ from mineral soils under Cropland: carbon stock change factors (e.g., development of new guidance, update and addition of default emission factors)
 - Emissions of CO₂ from mineral soils under Grassland: carbon stock change factors (e.g., development of new guidance, update and addition of default emission factors)
 - Direct N₂O emissions from managed soils: evaluation of EF1 and options for stratification (e.g., update of emission factors, elaboration of existing guidance)

Land representation

- Refinement of the *2006 IPCC Guidelines* is feasible and needed. The following elements were recommended to be addressed in a Methodology Report(s) referred to in paragraph 5 above. All of these elements can be dealt with by elaboration of existing guidance:
 - How to decide when to use global data, products and tools for land use representation
 - Activity data uncertainties
 - Consistent use of time series data, including for tracking land use change
 - Integration of ground observation, ancillary and RS data
 - Identification of disturbances in land representation
 - How to better assess conversion to forest land and forest regrowth in the context of RS and ground data
 - How to relate national land classification to IPCC land categories, including sub-stratification
 - How RS land cover data, ground based data and ancillary data can be used to derive land use
 - How consistency between REDD+ and/or project activities and IPCC Guidelines can be demonstrated
 - How to use Tier 1 and 2 methods with Approach 3
 - How to deal with seasonal nature of specific land categories
- On the other hand, the following elements should not be included in refinement of the *2006 IPCC Guidelines*.
 - How to define forest degradation (because definition is out of the scope of IPCC guidance.)
 - How to measure forest degradation (because there is sufficient guidance on how to measure changes in carbon stocks in Forest Land remaining Forest Land.)

Emissions from flooded land

- Refinement of the *2006 IPCC Guidelines* is feasible and needed. The following elements were recommended to be addressed in a Methodology Report(s) referred to in paragraph 5 above:
 - CH₄ emissions from various types of flooded land such as reservoir (including draw-down lands), run of the river dams, small dams/farm ponds, aquaculture ponds (development of new guidance taking Appendix 3 in Volume 4 of the *2006 IPCC Guidelines* into account)
 - CO₂ emissions from various types of flooded land such as reservoir (including draw-down lands), run of the river dams, small dams/farm ponds, aquaculture ponds (development of new guidance taking Appendix 2 in Volume 4 of the *2006 IPCC Guidelines* into account)
- Some issues were identified to be further considered by the scoping meeting for, or by authors of, a new Methodology Report(s), including:

- Whether to apply the managed land proxy (MLP)⁴ to flooded land as well, or to apply net emissions approach⁵ only to flooded land.
 - Whether to change the definition of flooded land to include run of the river dams.
10. 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 on unidentified sources of PFCs emissions (BOG1)

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

Annex 3: Report from break-out group on land representation (BOG3)

Annex 4: Report from break-out group on emissions from flooded land (BOG4)

⁴ According to MLP, all emissions from managed land should be included in the inventory.

⁵ This approach is meant to include only the difference between post-flood emissions and pre-flood emissions in the inventory.