

Conclusions and Recommendations

Second meeting of inventory lead reviewers Wellington, New Zealand, 23–25 February 2004

The second meeting of inventory lead reviewers was held in Wellington, New Zealand, in February 2004. Thirty-two experts, split evenly between Annex I and non-Annex I Parties were invited to attend. Of the 29 participants who attended the meeting, 28 will serve as lead reviewers in 2004.

The meeting addressed both procedural and technical issues related to the annual review of greenhouse gas inventories of Parties included in Annex I to the Convention. The conclusions of the meeting are presented below.

Management and logistic issues

The lead reviewers (LRs) recognized that centralized and desk reviews present additional challenges for expert review teams (ERTs) because of the number of inventories that must be reviewed while they are convened.

The LRs agreed that, if resources are available, the secretariat should schedule an additional day during the centralized reviews to help ERTs complete as much work as possible during the period when they are convened. They also requested that the secretariat provide at least one printed copy of the review materials for each Party under review for the centralized review teams.

The LRs recommended that the secretariat coordinate with Parties that are the subjects of centralized and desk reviews so that these Parties can respond quickly to any questions from the ERT during the review.

The LRs agreed that ERTs should not be restricted in the number of questions that can be asked of a Party during a centralized or desk review. However, guidance by LRs is needed in order to ensure an appropriate balance in the number of questions across different sectors, and with respect to key and non-key sources, giving priority to the former.

The LRs welcomed the secretariat's plan to prepare the greater part of the review materials on CD-ROM and send it to each expert involved in the reviews.

The LRs noted that fewer materials would be provided to ERTs in future than in previous years. However, all materials, such as previous years' submissions, can be provided to experts upon request.

The LRs recommended that the secretariat explore the possibility of establishing a protected website for use by ERTs.

Departures from the Intergovernmental Panel on Climate Change (IPCC) good practice guidance

The LRs agreed that, in general, ERTs have applied the guidance on identifying departures from the *IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* which resulted from the first meeting of inventory LRs. However, they felt that additional guidance on this matter is needed to further promote a common approach by ERTs to identifying departures from the IPCC good practice guidance and correspondingly reflect this in review reports.

The LRs noted the importance of interaction with the Party being reviewed in order for the ERT to explore the national circumstances of the Party with respect to a source in which a possible departure from the IPCC good practice guidance has been identified. In considering these circumstances, the LRs recommended that ERTs should consider the Party's overall national inventory improvement plan and what, if any, plans the Party has to address the problem identified.

The LRs also recommended that Parties be encouraged to better document their specific national circumstances and inventory improvement plans in the national inventory report (NIR) in order to facilitate ERTs' consideration of these matters.

The LRs recommended that ERTs should clearly explain any departures from the IPCC good practice guidance that are identified and recommend solutions in the review reports in relation to them, and requested the secretariat to revise the review report templates to reflect these recommendations.

The LRs requested that the secretariat further develop the guidance in the review handbook in order to promote a common approach by ERTs to identifying and considering departures from the good practice guidance, following the conclusions of LRs on this matter, for further consideration by the LRs at their next meeting.

International data sets

The LRs recognized the usefulness of data and data comparisons provided by the International Energy Agency (IEA) for the Energy sector, and welcomed the initiative by IEA to provide additional information to improve the transparency and usefulness of these data and data comparisons for inventory reviews. IEA has indicated that it could provide a spreadsheet with the original energy units reported by country, net calorific values and other parameters used by IEA to convert these data. In addition, IEA has indicated that it could provide information on the institutional source (i.e., the reporting organization) within each country.

The secretariat will cooperate with IEA to make the enhanced information available to the ERTs and the Party concerned.

To facilitate a consistent and careful approach to the use of information from other data sources during reviews, the LRs recommended that the following guidance be applied by ERTs and incorporated into the review handbook.

- Data from other international data sources (whether provided by the secretariat or obtained by the reviewer directly) should be considered as a tool to be used in assessing inventories but the discovery of discrepancies should not in itself be seen as indicating an inventory problem. Discrepancies between a Party's reported activity data (AD) and data from other organizations (international or otherwise) may or may not be indicative of an underlying problem.
- If a discrepancy between a Party's reported AD and data from another source is identified, the ERT should consult with the Party to determine whether it can be explained. The ERT should also consider whether the Party's data and data collection procedures are reliable and transparent.
- If the ERT considers the Party's AD to be reliable and transparent, then the discrepancy should not be considered a problem and therefore should not be reflected in the review report.
- If major discrepancies are found between the Party's reported data and those provided by another recognized data source used in the Synthesis and Assessment (S&A) report (e.g., IEA or the Food and Agriculture Organization of the United Nations (FAO)), and they cannot be adequately

explained by the Party, the ERT may, as appropriate, encourage the Party to explore the reason for these discrepancies.

- In comparing the Party's reported data to those from other sources, the ERT should consider the reliability of the other data source (see the next bullet point below). The following questions may help in these considerations: Is the organization providing the data a recognized international organization? Are the data regularly updated, maintained and disseminated? Are the data used by the organization generated by the countries themselves?
- The LRs confirmed their request to the secretariat to identify a limited number of international data sources to be used in the review process and to provide information (metadata) on these sources in order to assist ERTs in assessing any discrepancies between a Party's reported data and data from these sources.

Consideration of implied emission factors and results of the outlier detection tool

The LRs agreed that implied emission factors (IEFs) and the identification of statistical outliers in greenhouse gas (GHG) inventory data are useful tools which facilitate the review of GHG inventories, including trends. However, they recognized that in some case these tools have not been used properly in the reviews. They emphasized that these tools should not be used as substitutes for expert judgement and consideration of the underlying facts and circumstances relating to the source considered.

The LRs recommended that the following guidance on the appropriate consideration of IEFs and statistical outliers in the review process be applied by ERTs and elaborated by the secretariat in the review handbook:

- IEFs are top-down ratios calculated from a Party's emission estimate and aggregate activity data. IEFs are intended as a tool to assist in comparing a Party's estimate with those of other Parties and/or the IPCC default emission factors. IEFs do not necessarily correspond to the actual emission factors used by the Party in producing the emission estimate, and in many cases they are aggregated values.
- Unusual values in IEFs or other outlier results do not necessarily indicate an underlying inventory problem. In cases when an unusual value is identified, the ERT should consider the actual underlying value (i.e., the emission factor and/or other parameters) and methodology, and evaluate whether the value(s) and methodology are appropriate for the Party concerned (and comparable to the IPCC default value, if appropriate). In doing so, the ERT should consider the particular characteristics of the source for that Party and any relevant findings of previous reviews. It is not appropriate to base a judgement on a departure from the IPCC good practice guidance solely on the basis of an unusual IEF or other statistical outlier.
- The reviewers' conclusions, as reflected in the review report, should be based on an assessment of the *actual* values and approaches used in the preparation of the inventory (i.e., the emission factors and other relevant parameters) – not the IEFs. However, it is appropriate to consider the IEFs as part of this assessment, as described above.
- In cases where the reviewer cannot adequately assess the actual value(s) or methodology used by the Party because of lack of documentation or transparency, the reviewer should explain this fact in the review report.

Use of the secretariat's key source assessment

The LRs noted that the UNFCCC review guidelines direct the secretariat to identify key sources for each Party.

To clarify the appropriate use of the secretariat's key source analyses, the LRs recommended that ERTs apply the following guidance and that the secretariat reflect this guidance in the review handbook:

- If the Party has not reported a key source analysis, the ERT should use the secretariat's analysis to focus and prioritize the review in accordance with the good practice guidance. The results of the review should be presented in the report according to the secretariat's key source assessment.
- If the Party has reported a key source analysis and the results of this analysis differ substantively from those of the secretariat, the ERT should explore the reason for this difference, as requested by the UNFCCC review guidelines, and explain the reason in the review report. In many cases this is due to the fact that the Party has used a different level of aggregation from that used by the secretariat in conducting the assessment. In cases where the Party has conducted a tier 2 assessment, this fact alone may explain the difference.
- If the ERT determines that the Party's key source assessment was conducted correctly, then the results of that assessment should be the basis for focusing and conducting the review. However, the *organization* of the report should be at the level of source disaggregation in the secretariat's key source analysis, as reflected in the review report template. At the same time, the specific key sources reported by the Party should be given proper consideration in the report and reconciled with the key sources identified by the secretariat.
- In cases where the ERT (on the basis of documentation and any additional explanations provided by the Party) does not consider the Party's key source analysis to have been conducted correctly, then the secretariat's key source assessment should be used as the basis for review.
- The team's generalist should primarily be responsible for evaluating the Party's key source assessment and comparing it to that of the secretariat.

Use of country-specific sources

The LRs recognized that the existence of country-specific sources for which there is no agreed IPCC methodology may create some difficulty for a review team's considerations because of the lack of clear guidance on how to treat these sources.

To facilitate a common approach to the consideration of these sources, the LRs recommended that the following guidance be applied by ERTs and elaborated by the secretariat for inclusion in the review handbook:

- The UNFCCC reporting guidelines encourage Parties to estimate all existing (anthropogenic) source and sink categories, including sources for which there are no agreed IPCC methodologies. However, it may be inappropriate to expect a particular Party to provide an estimate of a country-specific source when estimating such a source/sink would divert resources from key source/sink categories, unless that source is likely to be significant. The ERT should therefore consider the likely significance of an unreported country-specific source, as well as the overall key sources of the Party, in evaluating whether to encourage the Party to investigate the significance of the source.
- Because good practice (and the reporting guidelines) encourage completeness of reporting, a Party should not be criticized for including such a country-specific source/sink in its inventory.

However, the ERT should consider whether the source has been reported consistently over time. Previous reporting of the source by the Party should be considered here.

- In considering a reported country-specific source/sink where there is no agreed IPCC methodology, the ERT should always consider cross-cutting good practice principles (i.e., transparency, completeness, consistency). In addition, the ERT should assess whether the methods used for a country-specific source are well documented and scientifically based, and reflect this, as appropriate, in the review report.
- In addition, ERTs may consider similar or related sources and methodologies reported by other Parties as a basis for comparison.
- ERTs should bear in mind that for each inventory sector the common reporting format (CRF) contains a category 'Other', in line with the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (hereafter referred to as the IPCC Guidelines), which has been provided to allow Parties to report sources/sinks that do not fall into clear IPCC source categories, according to the Party's national circumstances.

The LRs also requested that the secretariat identify and maintain examples of country-specific sources that have been reported, to be used as reference material by ERTs. LRs may also wish to consult with other LRs regarding specific cases.

Experiences with review of the European Community inventory

The LRs agreed that the review of the GHG inventory of the European Community (EUC) has been challenging for ERTs because it is a compilation of inventories of the individual member states.

The LRs recommended that the secretariat consult with the European Community regarding the experience to date in the review of the EUC inventory, and the planned improvements in the EUC inventory, with a view to identifying ways to ensure that the European Community adheres as closely as possible to the requirements of the UNFCCC reporting guidelines and to facilitating the review of the inventory in accordance with the provisions of the UNFCCC review guidelines.

The LRs agreed to give further consideration at their next meeting to possible options and/or guidance to assist the ERTs in reviewing the EUC GHG inventory.

Use of non-calendar year data

The LRs noted that neither the UNFCCC reporting guidelines nor the IPCC good practice guidance requires Parties to use calendar year data in the preparation of their GHG inventories, although the IPCC Guidelines mention in chapter 2 that inventories are prepared on a calendar year basis.

The LRs recognized that activity data used in the preparation of national GHG inventories are often collected for purposes other than the GHG inventory, and for that reason it may not be feasible for a Party to change its national data collection practices to a calendar year basis.

For these reasons, the LRs agreed that the use of non-calendar year data for inventory reporting under the UNFCCC is consistent with the IPCC good practice guidance in cases where collection of data on a non-calendar year basis conforms with the normal statistical practices of the Party concerned and the use of such non-calendar year data results in a more accurate estimate, provided that other principles of the IPCC good practice guidance (e.g., transparency, time-series consistency, use of correct/appropriate methodologies etc.) are correctly applied.

In addition, the LRs agreed that, while the use of mixed calendar year and non-calendar year data in the preparation of a GHG inventory is not ideal, it may be unavoidable for some Parties. The use of mixed data may also be consistent with the IPCC good practice guidance, provided that they are used consistently and presented transparently in the GHG inventory.

The LRs recommended that ERTs apply this guidance and requested the secretariat to reflect it in the review handbook.

The use of net versus gross calorific values in the Energy sector

The LRs noted that the CRF allows Parties to report fuel consumption in energy units based on net calorific values (NCV) or gross calorific values (GCV) and that the IPCC Guidelines recommend using NCV to convert the AD (energy consumption) into energy units for the estimation of GHG emissions.

For Parties that report using GCV, the LRs noted that IEFs for energy consumption seem unusually low compared to those of other Parties that report using NCV, and a straightforward comparison of IEFs across all Parties is therefore difficult.

To facilitate comparison across all Parties, the LRs requested the UNFCCC secretariat to collect from those Parties which report their activity data on a GCV basis the conversion factors they use to convert data based on GCV to NCV, and to use this information to calculate NCV-based IEFs for those Parties for comparison in Part I of the S&A report. If a Party's conversion factors are not available, the secretariat should use conversion factors provided by IEA to calculate NCV-based IEFs for those Parties.

Comparison of the reference and sectoral approaches

The UNFCCC reporting guidelines (in accordance with the IPCC Guidelines) require that Parties compare activity data for fuel combustion using the sectoral approach to activity data using the reference approach. Such comparison may assist in verifying the sectoral estimates.

The LRs noted that, for Parties that follow the sectoral approach estimations, the expectation of agreement with the reference approach may be misleading, as the two methods correspond to different tier methods, the sectoral approach being a higher-tier method than the reference approach.

The LRs requested the secretariat, in consultation with IEA, to develop clearer guidance to ERTs to assist them in assessing differences between the reference approach and the sectoral approach, based on the elements below, and recommended that this guidance be applied by ERTs:

- Comparison of AD using the reference approach with AD using the sectoral approach should be considered as a tool in assessing inventories, and the results should not in themselves be considered as indicating an inventory problem. The ERT should always consider the Party's explanation for any discrepancies between the two approaches and consider whether the emission factors (EFs) and AD used by the Party in the sectoral and reference approaches are appropriate.
- In considering differences between a Party's estimates using the sectoral approach and those obtained using the reference approach, ERTs should consider whether such differences can be adequately explained by differences in the level of aggregation of AD and other input parameters. ERTs should consider, to the extent possible, the Party's particular procedures for the collection of energy statistics, as well as any specific characteristics of its energy statistics. ERTs should also consider whether the same fuels are included in the estimation of

the reference approach as in the sectoral approach (for instance, feedstocks are often excluded from the reference approach).

- In cases where procedures for the collection of energy statistics are well established and the differences between the reference and sectoral approaches can be adequately explained by characteristics of the Party's national energy statistics, any difference between the reference and the sectoral approaches need not be considered further.

UNFCCC procedures for the protection of confidential inventory information

The LRs endorsed the secretariat's planned procedures for implementation of the code of practice for the treatment of confidential information in the technical review of GHG inventories from Parties included in Annex I to the Convention. They recommended that the secretariat develop guidance to assist reviewers in reflecting any conclusions regarding confidential information in the review report.

Agreement for Expert Review Services

The LRs recommended that, in developing the Agreement for Expert Review Services mandated by the Conference of the Parties (COP), the secretariat should include only those minimum elements from decision 19/CP.9 that are necessary to give effect to the mandate and, in particular, to comply with the code of practice for the treatment of confidential information in the technical review of GHG inventories.

The LRs welcomed the secretariat's plan to provide a draft agreement following this recommendation for their consideration and agreed to provide feedback prior to the next meeting of the Subsidiary Body for Scientific and Technological Advice (SBSTA).

Taking overall inventory quality into account in focusing the efforts of review teams

The LRs initiated consideration of a number of questions related to ensuring the value of the review process for individual Parties and improving the relevance of the results for Parties, the subsidiary bodies and the Conference:

- What flexibility should ERTs have to respond to different levels of inventory quality without compromising the technical rigour and consistency of the reviews?
- How can recognition of Parties' efforts and progress made in improving their inventories be ensured in the reports without jeopardizing the need to identify problems and recommend possible solutions? How deeply should ERTs be expected to search for problems?
- Should ERTs make a distinction between inventory problems that *directly* affect the accuracy of emission estimates (e.g., incorrect choice of an EF or AD, inconsistent time-series) from those that may *indirectly* affect emission estimates? If so, how should this distinction be reflected in the reports?
- How can the results of the technical review process be made more relevant to Parties? How can the results of the review process be better reflected in the documents for the COP and subsidiary bodies?

The LRs made a number of observations and agreed that further consideration of these issues would be helpful:

- It is not currently possible to establish a 'rating' of overall inventory quality. However, it would be useful to explore qualitative indicators of inventory quality and inventory improvements (e.g., a matrix of improvements over time and information on recalculations). The LRs requested the secretariat to prepare options in this regard for the next LRs' meeting.
- The LRs recommended that the secretariat include in the reports prepared for the subsidiary bodies and the COP information on the continuous improvements achieved by Parties in preparing GHG inventories since the technical review process began.
- ERTs should ensure that a clear indication of any major improvements and problems is provided in the overview section of review reports. Presentation of these findings in the overview sections would greatly facilitate consideration of the review reports by policy makers.
- ERTs should clearly recognize improvements made in their inventories by Parties. The LRs recommended that the secretariat indicate in the review template where ERTs should do this.
- ERTs should have flexibility to respond to the particular circumstance of individual countries under review in order to ensure that the review is facilitative and constructive for the Party concerned.
- ERTs should ensure that the inventory review is as thorough as possible given the time available. They should use their expert judgement in determining the appropriate depth of their review, taking into account both the IPCC good practice guidance and the national circumstances of the Party concerned.
- Because of time constraints, it was not possible to arrive at recommendations relating to the possibility that ERTs could make a distinction between inventory problems that *directly* affect the accuracy of emission estimates from those that may *indirectly* affect emission estimates. The LRs decided to consider this question in the next LRs' meeting.

Review of time-series consistency

The LRs agreed to encourage ERTs to emphasize the importance of reviewing GHG emission trends as part of the inventory reviews. They noted that the secretariat's paper on the review of time-series consistency, including the table for checking factors affecting time-series consistency, could be used by ERTs in 2004, under the guidance of LRs, to facilitate a more systematic review of emission trends. This paper will be provided to review experts for consideration.

The LRs recommended the continued development of the outlier detection tool to facilitate this approach, depending on the availability of resources.

Further consideration of this issue could be undertaken at the next LRs' meeting, taking into account any experiences in 2004 and the secretariat's progress in developing the outlier detection tool.

Changes for the 2004 review process

The LRs welcomed the secretariat's modifications to the format of Part II of the S&A report, and agreed that these modifications would make it easier for Parties to provide comments to the issues raised. They also noted that the modifications will allow Part II to be integrated into the review transcript and thus reduce the amount of work for experts in completing the transcripts.

The LRs agreed to continue to encourage experts to complete their review transcripts during the reviews. They recognized that having a record of the review is particularly important in cases where something that appeared to be a potential inventory problem was adequately explained by the Party during the review. The LRs recommended that the secretariat further improve the instructions for the use of the review transcript.

Adjustments

To facilitate the process of gaining experience with the methods for adjustments, the secretariat provided a paper on case studies in the calculation of adjustments. The LRs appreciated this paper as useful reference material for ERTs in calculating adjustments. The LRs agreed to provide comments on the paper by 1 May, which will be included as part of the reference materials for ERTs.

The LRs further agreed that the process of gaining experience in the methods for adjustments should be initiated in 2004. To this end, they recommended that the secretariat facilitate the calculation of adjustments by three ERTs in 2004, specifically two in-country review teams and one centralized review team. The secretariat will consult with the Parties concerned to ensure that only Parties that volunteer for this process participate.

The experiences of these three teams will be considered at the LRs' meeting in 2005, and further guidance will be provided to the secretariat on the testing of adjustments in 2005 by all ERTs, taking into account the fact that training on adjustments may be necessary to enable this to take place.

Status report on CRF software

The LRs took note of the information provided by the secretariat on the status of the development of the new CRF reporting software and how this software will be deployed in 2004. They also noted that an independent module for reporting of land use, land-use change and forestry (LULUCF) following agreed reporting guidelines will be developed and deployed using Excel software on a trial basis in 2004.

The LRs recommended that the secretariat provide Annex I Parties with early versions of the software and technical documentation to enable them to familiarize themselves with the software before it is provided in the final version. They also asked the secretariat to provide demonstrations and opportunities for Parties to use the software during the meetings of the SBSTA, and to organize a hands-on training workshop once the final version is available.

Training activities

The LRs took note of the information provided by the secretariat on its activities related to training for members of expert review teams and its request that they inform the secretariat of good candidates for such training.
