



WMO

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

NATIONAL GREENHOUSE GAS INVENTORIES PROGRAMME



UNEP

**DATABASE ON GREENHOUSE GAS EMISSION FACTORS
(IPCC-EFDB)**

EFDB EDITORIAL BOARD

Report of the First Meeting

Hayama, Japan

28-30 January 2003

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Summary

The database on GHG emission factors (EFDB) web application was released to the public at the 8th session of the Conference of the Parties to the UNFCCC (COP8) in October 2002. The Task Force Bureau (TFB) for the IPCC National Greenhouse Gas Inventories Programme (IPCC-NGGIP), at its 9th session (Hayama, Japan, 25-27 November 2002), established the EFDB Editorial Board to assess¹ data proposed for inclusion into the EFDB.

The first meeting of the EFDB Editorial Board was convened in Hayama, Japan, on 28-30 January 2003. Its objectives were:

- To share understanding of the objectives, responsibility and role of the EFDB Editorial Board and relevant procedures and working practises;
- To consider the criteria to be used in the assessment of proposals by data providers in order to ensure the integrity and scientific soundness of the EFDB;
- To consider how to ensure consistency of the assessment criteria over time and between Editorial Co-ordinators and Sector Experts; and
- To consider good strategies for population of the EFDB.

To achieve these objectives, the participants considered key issues such as:

- Modalities and procedures for managing and populating the database
- General aspects of criteria to be used in the assessment of proposals by data providers
- Criteria to be used in the assessment of proposed data for each sector
- Strategies for populating the EFDB

Conclusions of these discussions shown in this report are to be incorporated into the terms of references (TOR) of the EFDB Editorial Board and/or the EFDB User Manual that are considered key documents for the operation of the EFDB.

¹ After the first meeting of EFDB Editorial Board, the Task Force Bureau (TFB), at its 11th session (Geneva, Switzerland, 19 September 2003), decided that the responsibility of the EFDB Editorial Board should be to “evaluate” whether proposed new emission factors or other parameters are acceptable or not according to the criteria set out in the terms of reference (TOR) of the EFDB Editorial Board. The TFB decided to avoid using the term “assess” because it might be misleadingly associated with the IPCC Assessment Reports that are produced through a series of official review processes involving governments and many experts. Pursuant to this decision, the responsibility or exercise of the EFDB Editorial Board should be described as “evaluate” or “evaluation” rather than “assess” or “assessment” in any relevant documents, including the TOR of the EFDB Editorial Board and the EFDB User Manual.

1 Introduction

1.1 Background of the EFDB project

The quality of national inventories of anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol (GHG inventories) depends substantially on reliable emission factors and activity data. Although it is preferable to use emission factors that reflect national circumstances, emission factor development is expensive, time consuming and necessitates a wide degree of expertise. The *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines)* and the report on *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (GPG2000)* provide default emission factors for the majority of source and sink categories. Some of these default emission factors are region- or country-specific, but in general not all regions or countries are covered.

Sharing of research information would enable countries to use or develop emission factors that are more applicable to the circumstances in question than the IPCC default emission factors, without having to bear the associated research costs. For this reason, many countries have indicated (e.g. in the Expert Group Meeting on National Feedback on the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, Havana, Cuba, September 1998) that an easily accessible public database on GHG emission factors with supporting scientific information would help to improve the quality of GHG inventories in a cost-effective way. A database on GHG emission factors with supporting scientific information would also support the future review and update of the *IPCC Guidelines*.

With this background, a project to establish a database on GHG emission factors (EFDB) was initiated with a scoping meeting in New Delhi, India, on 24-25 July 2000. Subsequently, the functional design was agreed upon at the first expert meeting in Paris, France, on 2-4 July 2001. The Task Force Bureau (TFB) for the IPCC National Greenhouse Gas Inventories Programme (IPCC-NGGIP), at its 6th session held in Geneva on 9 August 2001, considered the outcomes of the Paris meeting and established the EFDB Steering Group to oversee the development of the database. A prototype database was constructed under the supervision of the EFDB Steering Group in January 2002, and was subject to pilot testing by a number of inventory experts from different countries for 8 weeks, from 11 February to 8 April 2002. At the second expert meeting in Bratislava, Slovakia, on 23-24 April 2002, participants considered the comments obtained through the pilot testing and discussed how to improve the prototype database. The EFDB was improved in accordance with the conclusion of the Bratislava meeting, and finally released to the public at the 8th session of the Conference of the Parties to the UNFCCC (COP8) in October 2002.

1.2 Establishment of the EFDB Editorial Board

At the second expert meeting in Bratislava, participants also discussed the future development of the EFDB and recommended that an editorial board should be established to ensure that all emission factors and other parameters contained in the EFDB are scientifically sound according to criteria that should be established by the TFB.

In light of this recommendation, the TFB, at its 9th session (Hayama, Japan, 25-27 November 2002), established the EFDB Editorial Board which was composed of 27 members selected from experts nominated by governments. (See Table 1 below.)

Table 1 Members of the EFDB Editorial Board (as of 28 January 2003)

Board Co-chairs	Tinus Pulles (The Netherlands)			Katarina Mareckova (Slovakia)	
	Energy	Industrial Processes ²	Agriculture	LUCF	Waste
Editorial Co-ordinators ³	Pavel Fott (Czech)	William Agyemang-Bonsu (Ghana)	Joe Mangino (US)	Pascal Boeckx (Belgium)	Carlos Lopez (Cuba)
	Timothy Simmons (UK)	Jos Olivier (The Netherlands)	Li Xu (China)	Nagmeldin Goutbi (Sudan)	Elizabeth Scheehle (US)
Sector Experts	Dario Gomez (Argentina)	L. R. Meija (Dominican Rep.)	Keith Lassey (NZ)	Anders Lindroth (Sweden)	Robert Gregory (UK)
	Azhari F. M. Ahamed (Qatar)	Hideaki Nakane (Japan)	Magda Lima (Brazil)	Michael Gytarsky (Russia)	Sonia Maria Manso Vieira (Brazil)
	Micheal Strogies (Germany)	Kristina Saarinen (Finland)	Ian Galbally (Australia)	Xiaoquan Zhang (China)	
			Anna A. Romanovskaya (Russia)		

The TFB noted the list may need to be augmented with additional members (Sector Experts) in order to fulfil expertise required for the task of the EFDB Editorial Board.

1.3 Objectives of the meeting

The first meeting of the EFDB Editorial Board was convened in Hayama, Japan, on 28-30 January 2003. Its objectives were:

- To share understanding of the objectives, responsibility and role of the EFDB Editorial Board and relevant procedures and working practises;
- To consider the criteria to be used in the assessment⁴ of proposals by data providers in order to ensure the integrity and scientific soundness of the EFDB;

² This meeting concluded that the team in charge of the “Industrial Processes” Sector should also take charge of the “Solvent and Other Product Use” Sector.

³ This position was renamed as “Editorial Sector Co-ordinators” after the meeting.

⁴ See footnote 1 on page 3.

- To consider how to ensure consistency of the assessment criteria over time and between Editorial Co-ordinators and Sector Experts; and
- To consider good strategies for population of the EFDB.

1.4 Participants

The meeting was attended by 34 participants, including the EFDB Editorial Board members, the EFDB Steering Group members, a representative from the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), and the Technical Support Unit of the IPCC National Greenhouse Gas Inventories Programme (IPCC-NGGIP/TSU). The list of participants is attached to this report (Appendix 1).

The meeting was kindly hosted by the Institute for Global Environmental Strategies (IGES).

1.5 Proceedings

The meeting was opened at 10:30 on 28 January 2003 with opening remarks by Taka Hiraishi, TFB Co-Chair. It proceeded according to the agenda shown in Appendix 2.

At the opening session, the participants elected Tinus Pulles from the Netherlands and Katarina Mareckova from the Slovak Republic as Office Bearers to co-chair the meeting.

Following the opening session, the TSU gave two presentations to outline the background of the EFDB project, objectives of the meeting, etc. The TSU also made an on-line demonstration of the EFDB to show how it works in practice.

Subsequently, intensive exchange ensued on the following issues at plenary sessions as well as at breakout group sessions⁵ since the afternoon of 28 January through the morning of 30 January.

- Modalities and procedures to manage and to populate the database
- General aspects of criteria to be used in the assessment of proposals by data providers
- Criteria to be used in the assessment of proposed data for each sector
- Strategies for populating the EFDB

At the final plenary session, the outcomes of breakout group discussions were presented by each breakout group. Then, Tinus Pulles made a wrap-up presentation to summarise the achievements and conclude the meeting.

The meeting was closed around noon on 30 January 2003.

Due to the time limitation, the participants could not reach full agreement on some issues at the meeting. After the meeting, therefore, follow-up discussions were made on those remaining issues via e-mail, mainly at a breakout group level (i.e. sector level), including those members of the EFDB Editorial Board who were absent from the meeting.

⁵ Five breakout groups were formed to discuss sector-specific issues; namely, breakout group 1 (BOG1) for Energy, BOG2 for Industrial Processes, BOG3 for Agriculture, BOG4 for LUCF and BOG5 for Waste.

2 Discussions and Conclusions

This chapter summarises the discussions and conclusions at the meeting as well as after the meeting via e-mail communications among relevant breakout group members.

Conclusions of these discussions shown in this chapter are to be incorporated into the terms of references (TOR) of the EFDB Editorial Board and/or the EFDB User Manual that are considered key documents for operation of the EFDB.

2.1 Modalities and procedures to manage and populate the database

The TFB, at its 9th session, considered and provisionally agreed upon modalities and procedures to manage and to populate the database. Those provisional modalities and procedures were presented to the meeting participants in the form of a discussion paper (Discussion Paper No.1) for consideration and further elaboration.

The participants gave their careful consideration to, among others, the issues on the basic nature of the EFDB, the responsibility of the EFDB Editorial Board, the membership of the EFDB Editorial Board, and the concrete procedures for the assessment of data proposals.

2.1.1 Basic nature of EFDB

The basic nature of EFDB had been discussed at a series of the expert meetings on this project. As a result, it had been concluded and agreed by the TFB that the EFDB should serve as a “library”, rather than an “authority”, where users can find emission factors and other parameters with background documentation that can be used for estimating greenhouse gas emissions in national submissions of inventories to the UNFCCC.⁶ The responsibility for using the information in the EFDB appropriately will always remain with the users themselves.

This basic nature of EFDB was repeatedly stressed and reaffirmed during the meeting, as it is crucial in considering the responsibility of EFDB Editorial Board and the criteria for the assessment of data proposals.

2.1.2 Responsibility of EFDB Editorial Board

a) Scientific check or reality check

The discussion paper suggested that the objective of EFDB Editorial Board be to ensure all emission factors and other parameters contained in the EFDB are **scientifically** sound. Many participants expressed concerns or made reservations about it. Considering the limited resources available to the EFDB Editorial Board, many participants were of the opinion that it was difficult to carry out scientific

⁶ An authoritative nature of the EFDB is deemed inconsistent with the fact that the EFDB is not subject to an official review processes defined by the IPCC. The EFDB is supposed to be a database to facilitate the use of the IPCC Methodology Reports (e.g., *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*). It will be classified as Supporting Material according to the “Procedures for the Preparation, Review, Acceptance, Adoption, Approval and Publication of IPCC Reports”.

review. Also, taking into account the basic nature of EFDB, many participants felt that scientific assessment was beyond the mandate of EFDB Editorial Board.

The participants agreed that the responsibility of the EFDB Editorial Board should be to conduct reality checks, rather than scientific checks, in order to ensure that all emission factors and other parameters contained in the EFDB fulfil certain criteria with respect to robustness, applicability and documentation. (These criteria are elaborated in Section 2.2.2 below.)

The terms of reference (TOR) of the Editorial Board were revised accordingly after the meeting. (See **Appendix 3, page 4.**)

b) Responsibility for errors in submitted data/information

It was also questioned whether the EFDB Editorial Board takes any responsibility if the submitted data/information contains errors such as those that may be due to transcription errors on the side of the data provider.

The participants agreed that the TSU and the EFDB Editorial Board should make efforts, to the extent possible, in checking potential mistakes in the data provided. They also agreed, however, that it is difficult for the EFDB Editorial Board to assume full responsibility in this regard. In consequence, the necessity to include a disclaimer on this matter was recognised. To this end, it was decided that the following paragraph be inserted into the EFDB User Manual.

While the EFDB Editorial Board has examined each entry, and associated background technical documentation where made available by the data provider, following review criteria that include robustness and applicability of the data, the ultimate responsibility of using this information appropriately resides with the users themselves. The members of the EFDB Editorial Board are not responsible for errors in the data as shown in the database, such as those that may be due to transcription errors from the data provider or other errors due to the inaccurate presentation of the data on submission from the data provider. The database users are highly encouraged to consult the background technical reference for the entry to better evaluate the application of the data for their own situation.

The participants also recognised the importance of making every effort to have the relevant documentation available to the users.

2.1.3 Membership of the EFDB Editorial Board

The participants agreed with the TFB that the expertise required for assessment of data in a variety of IPCC Source/Sink Categories is not fully covered by the current EFDB Editorial Board. Two proposals were made as solutions to this problem.

- 1) Call for additional nominations of experts for missing expertise (e.g., expertise in forests in North America, South America, Australia, China, etc.)
- 2) Allow EFDB Editorial Board members to consult other experts on an ad hoc basis. In this case, the name and contact information for the expert consulted should be included in the decision on the data proposal. A list of consulted experts should be published in the EFDB to give full credit for their contribution. (The TOR of the

Editorial Board was revised accordingly after the meeting. **See Appendix 3, page 5.)**

The participants also concluded that the team in charge of the “Industrial Processes” Sector should also take charge of the “Solvent and Other Product Use” Sector.

2.1.4 Concrete procedures for the assessment of data proposals

Questions were raised concerning the concrete procedures for the assessment of data proposals. The agreement reached on each of those questions is shown below. For details of agreed procedures, see the revised TOR of the Editorial Board. (**See Appendix 3, page 6.)**

a) Who prepares a draft decision?

For each data proposal, the Editorial Sector Co-ordinators responsible for the relevant sector will appoint one of the members of the sector group to take the lead in the assessment. The **appointed expert** will look into the data proposal and prepare a draft decision to either accept or reject the proposal. The appointed expert should keep the other Sector Experts, Editorial Sector Co-ordinators and the TSU informed. The appointed expert will post the result of this assessment with rationale on the Editorial Board webpage.

Subsequently, the Editorial Sector Co-ordinators responsible for the sector shall comment on the draft decision. Other Sector Experts may post their comments on the website as well.

b) Who takes the final decision?

The final decision will in principle be based on **consensus within the sector group**. The Editorial Sector Co-ordinators will merge the assessment by the appointed expert and the comments by the other members of the sector group into the final decision to either accept or reject a proposed emission factor or other parameter. The decision will be endorsed by the Board Co-chairs, and implemented by the TSU.

If there is no consensus, the Editorial Sector Co-ordinators will decide in consultation with the Board Co-Chairs.

The Board Co-chairs will have overall responsibility for the assessment of emission factors or other parameters for the EFDB. They will decide in case the Editorial Sector Co-ordinators do not reach consensus or the data provider refutes the decision by the EFDB Editorial Board⁷.

c) Who communicates with the data provider?

In principle, it should be the **TSU** who communicates with the data providers.

However, in order to facilitate the assessment, the **appointed expert** to take the lead in assessing the particular data proposal (see above) may directly contact the data

⁷ The data provider will be given the opportunity (once) to comment or refute the decision by the EFDB Editorial Board before the Board Co-chairs endorse it. See the revised TOR of the Editorial Board (Appendix 3, page 6).

provider by e-mail in order to ask for more information on the proposed data. The appointed expert may also contact the data provider to recommend specific revisions/additions to be made. If the data provider agrees to the recommendation, the original proposal should be revised by the data provider himself/herself. All these correspondences should be copied to the TSU.

d) Should communications be via e-mail or web application?

The participants agreed that the Editorial Sector Coordinators and the Sector Experts should **discuss via e-mail** and **provide a draft decision and comments on it via the web application** (EFDB Editorial Board webpage).

Figure 1 EFDB Editorial Board webpage

The screenshot shows the EFDB Editorial Board webpage interface. At the top, it displays 'IPCC NGGIP' and 'Logged user: Sector Expert C [Logout]'. Below this is a navigation menu with links: Home, Login, Find EF, Single Input, Mini-Batch Import, Administrate, Documents, Downloads, and Help. The main heading is 'Editorial Board - Emission Factor QA/QC Status'. Underneath, it specifies the 'Subject of this QA/QC procedure' as 'Single input of new emission factor (ID: 47547)'. A message states: 'You have decided to add comment regarding this request! Please, decide whether you want to accept or refuse this request, supply the reason of your decision into the textarea and click OK!'. There are two radio button options: 'ACCEPT request' and 'REFUSE request'. Below these is a large text area for providing reasons, followed by an 'OK' button. A horizontal line separates this section from the user's profile information, which includes the name 'Peter Greguš', the date 'Date: 25. June 2003, 22:44', the status 'Status: MODIFIED', and the reason 'Reason: changed type of parameter from "other" to "measured"'. At the bottom, it shows statistics: 'Number of acceptances: 0', 'Number of refusals: 0', and 'Number of modifications: 1', along with a 'Back' button.

2.2 General aspects of criteria to be used in the assessment⁸ of proposals submitted by data providers

The EFDB will be open to any relevant proposal on emission factors or other related parameters. Acceptance of such proposals however shall be subject to assessment by the Editorial Board using well-defined criteria. The participants were invited to develop the well-defined criteria at this meeting based on Discussion Paper No.2.

This section summarises major discussions and conclusions on the criteria.

2.2.1 Basic requirements

The participants noted that an initial check has to be made by the TSU to ensure the data proposal satisfies some basic requirements before the EFDB Editorial Board starts the assessment.

a) Need to avoid duplication

In order to avoid duplication of data records, the TSU should check if the same data record coming from the same technical paper or source is already contained in the EFDB. If the same data record is found in the EFDB, the data proposal should not be forwarded to the EFDB Editorial Board. In this case, the TSU should explain it to the data provider.

b) Qualification or classification of data providers

There will be a wide variety of data providers ranging from a national inventory agency to an individual expert who are not so familiar to the community. The participants discussed whether there should be some qualifications for data providers, and whether data providers should be classified according to the level of assessment required.

The conclusion was that there is no need for qualifications or classifications. All data providers who have been registered through the procedure established by the TFB⁹ will be treated equally.

c) Need to complete mandatory fields¹⁰

The EFDB software can automatically check whether the mandatory fields except “Properties” are left blank or not. In the case that a mandatory field except

⁸ See footnote 1 on page 3.

⁹ In order to ensure traceability of all proposals to individuals or institutions and thereby allowing communication between the data provider and the EFDB Editorial Board, the procedure for registration of data providers was developed by the EFDB Steering Group and the TSU, which was endorsed by the TFB at its 9th session.

¹⁰ Mandatory fields are those fields (or pieces of information) that must be specified in data proposals since they are deemed essential in order for EFDB users to examine the applicability of the data record to their national GHG inventories. These include “(name of the) Data Provider”, “Properties”, “Description (of what the data record is)”, “Source of Data”, etc.

“Properties” is left blank, the EFDB software will alert the data provider and urge him/her to complete it. This ensures that all mandatory fields except “Properties” contain information when the TSU receives the data proposal.

Nevertheless, the participants noted that the TSU has to pay attention to mandatory fields before forwarding the data proposal to the EFDB Editorial Board. This is because the information in the mandatory fields may sometimes make no sense. (This cannot be checked by the EFDB software.)

The participants also recognised the necessity for the TSU to ensure that the properties that must be specified are not missing in the “Properties” field before forwarding the data proposal to the EFDB Editorial Board.

2.2.2 Criteria to be used in assessment of a data proposal

As mentioned in Section 2.1.2 above, the participants agreed that the responsibility of the EFDB Editorial Board is not to perform scientific checks, but to ensure that all emission factors and other parameters contained in the EFDB fulfil certain criteria. The criteria were finally defined as shown below.

The EFDB should assist countries in producing inventories that are neither over- nor underestimates so far as can be judged and in which uncertainties are reduced as far as practicable. To achieve this, a proposed emission factor or other parameter should

- be in line with the fundamental principles and approaches of the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* and the IPCC report on *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*;
- be accompanied by documentation describing the conditions of its derivation and information regarding the level of uncertainty, preferably quantified but at a minimum some qualitative indicators, to be attached to it;
- be unbiased and as accurate as possible;
- contribute to the EFDB by adding a value for a source not already covered or by providing a different value or an identical but independent value for an existing emission factor or parameter type. The technical information in the “properties fields” should provide the information needed to differentiate between the alternative values for emission factors or parameters for a particular source.

To meet these standards, the proposed emission factor or other parameter should be:

- **robust**, i.e. within the accepted uncertainty, the value is unlikely to change if there was repetition of the original measurement programme or modelling activity.
- **applicable**, i.e. matches either a specific IPCC Source/Sink Category or subcategory, or another well-defined source category that can be used in a national inventory compilation. An emission factor can only be applicable if the source and its mix of technology, operating and environmental conditions and abatement and control technologies under which the emission factor was measured or modelled are clear and allow the user to see how it can be applied.
- **documented**, i.e. access information to the original technical reference must be provided to evaluate the robustness and applicability as described above. The information provided in the database should be detailed and comprehensive enough so that users may be able to evaluate the applicability to a national GHG inventory.

These criteria are stipulated in more detail in the revised TOR of the EFDB Editorial Board. (See **Appendix 3, pages 4-5.**)

2.2.3 Provision of technical reference/documentation

In relation to one of the criteria set out in Section 2.2.2 above, the participants considered whether the provision of technical reference or documentation should be required of data providers, and if so, how to secure it.

The participants agreed that there should be a minimum provision of documentation to allow for checking robustness and applicability of data proposed. There was also a general consensus that this documentation should be limited to the EFDB Editorial Board usage.

In conclusion, the following stipulation was included in the revised TOR of the EFDB Editorial Board. (See **Appendix 3, page 5, paragraph 7.**)

The data provider should be encouraged to provide an electronic or hard-copy of the technical reference to the TSU at the time of data submission or alternatively, make available this information in a publicly accessible form such as widely available scientific journals or proceedings.

The TSU should archive the documentation provided by data providers, and is not expected to distribute it to EFDB users.

2.2.4 Other requirements

Each data record contained in the EFDB is composed of various data fields. Data providers are requested to provide as much information as possible in relevant data fields when they input the data proposal. The EFDB Editorial Board should examine the information in each data field and consider whether the data proposal satisfies the criteria set out in Section 2.2.2 above.

The participants considered what kind of instructions should be given in order for data providers to complete data fields. As a result, a set of instructions on data fields was elaborated for incorporation into the EFDB User Manual. (See **Appendix 4.**) Data providers are required to follow these instructions.

<Data Provider Contact>

Many participants were of the opinion that contact information of data providers should be made known to EFDB users so that they can contact the data providers to ask for further information if necessary. However, in the procedure for registration of data providers which was endorsed by the TFB at its 9th session, it was stipulated that the contact information of data providers should be kept confidential. As a compromise, the participants concluded that if the data provider consents, the contact information should be made available to general EFDB users. In line with this conclusion, the following arrangement was suggested.

Data providers are highly encouraged to show their e-mail address in “Data Provider Contact” field. However, they can opt to conceal their e-mail addresses from EFDB users if they wish. In this case, contact information of the TSU (ipcc-efdb@iges.or.jp) will be shown in this field so as to enable EFDB users to contact the data provider (the data source) via TSU.

Accordingly, a revision of the procedure for registration of data providers should be proposed to the TFB at its 10th session.

<Properties>

The “Properties” field was originally considered not mandatory¹¹, which meant it could be left unspecified.

The participants however agreed that some of the sub fields under the “Properties” must be specified in order to facilitate users’ judgment of the usefulness and usability of the data record. The EFDB Editorial Board should ensure that such information is provided during data submissions.

Thus, the “Properties” field was turned mandatory. Further details on “Properties” field are mentioned in Section 2.3 below and in Appendix 5.

2.3 Criteria to be used in the assessment¹² of proposed data for each sector

During the meeting, five breakout groups (BOGs) were convened to consider sector-specific issues as follows.

BOG1: Energy Sector

BOG2: Industrial Processes Sector

BOG3: Agriculture Sector

BOG4: LUCF Sector

BOG5: Waste Sector

Each BOG was composed of the Editorial Co-ordinators and Sector Experts for that particular sector, and some other participants in the meeting.

The BOGs were invited to focus on the following issues.

- To consider sector-specific questions (if any) that must be included in the well-defined criteria for assessment of data proposals.
- To elaborate or improve the list of examples of “Properties” for the sector¹³.
- To consider how to collect up-to-date relevant data for the sector.

In particular, a lot of time was devoted to elaboration and improvement of the list of examples of “Properties” for each sector.

Discussion on this issue by each BOG was continued after the meeting via e-mail. The results were integrated as shown in **Appendix 5** of this meeting report, which is intended to be an integral part of the EFDB User Manual.

Outcomes of each BOG discussion are briefly summarised in the following sections.

¹¹ See footnote 10 on page 11.

¹² See footnote 1 on page 3.

¹³ Drafts of the lists were prepared by the TSU and presented in addenda to the Discussion Paper No.3 for the meeting.

2.3.1 BOG1: Energy

Major conclusions of BOG1 discussions include, among others:

- When providing an emission factor for fuel combustion or fugitive emission it is assumed that data providers will have a clear view of the activity to which the emission factor relates and will be able to carefully specify the conditions and fuel type which define the factor and help the user. These essential data should be reported in the sub-fields of the “Properties” field and, depending on the source category, certain of these are marked as mandatory to ensure that the data are made available.
- CO₂ emissions from fuel combustion are directly determined by the carbon content of the fuel. All source categories are treated identically, including mobile sources. If submission of a separate factor for incomplete oxidation is made this should be specific to a source category and technology. However, if the submitted emission factor includes an adjustment for incomplete oxidation this fact must be stated.
- The number of different processes used in the oil and gas sector makes it essential that an emission factor be accompanied by sufficient information for a user to judge whether it is appropriate for use in local conditions. This is particularly important where Tier 1 emission factors are provided as they will be applied to activity data embracing several or many different processes.

The elaborated list of examples of “Properties” for Energy Sector is included in Appendix 5. (See **Appendix 5, Table 1, pages 4-7.**) BOG1 also considered the list of fuel categories after the meeting, which resulted in the table in **Appendix 6.**

2.3.2 BOG2: Industrial Processes/Solvent and Other Product Use

Major conclusions of BOG2 discussions include, among others:

- The Industrial Processes Sector is featured by many sub-categories, many different methods, and many compounds (6 GHGs, 4 precursors).
- “Region/Regional conditions” is not relevant to the Industrial Processes Sector.
- Special attention should be drawn to the issue on CO₂ emissions from non-energy use of fossil fuels (e.g., risk of double counting with fuel combustion). The EFDB Editorial Board should be cautious of this issue so that relevant emission factors or other parameters should be stored in the correct IPCC Source/Sink Category.
- Possible general data providers for the Industrial Processes Sector are: national inventory compilers and their experts; editors and authors of well-accepted emission factor handbooks/databases; international scientific organisations; etc.
- Possible source-specific data providers are: international industry associations; key manufacturing companies; active national industrial organisations; key national research institutes; etc.

It was agreed that the Solvent and Other Product Use Sector will be also taken care of by this sector group.

The elaborated list of examples of “Properties” for Industrial Processes Sector and that for Solvent and Other Product Use Sector are included in Appendix 5. (See **Appendix 5, Tables 2 and 3, pages 8-17.**)

2.3.3 BOG3: Agriculture

Major conclusions of BOG3 discussions include, among others:

- Measurement fields (protocol, time, frequency) need to be highly ‘encouraged’ for records checked as ‘measured’ inputs.
- Is the development of emission factor from background data adequately described from inputs? – This should be described in “Comments from Data Provider” sub field.
- Representativeness of the sampling should be described in “Measurement” field.
- Considerations where emission factor models are the basis for input data (validated? representative?) – This should be described in “Other Information on Data Quality” field.
- Data providers should be encouraged to submit a hard copy of the technical reference to the TSU at time of submission (for internal use only, as library of references for Guidelines development).

BOG3 also came up with suggestions for improvement of instructions on data fields (see Section 2.2.4) that were fully taken into account in developing Appendix 4.

The elaborated list of examples of “Properties” for Agriculture Sector is included in Appendix 5. (See **Appendix 5, Table 4, pages 18-21.**)

2.3.4 BOG4: Land Use Change and Forestry

Major conclusions of BOG4 discussions include, among others:

- Criteria and examples should be considered preliminary, since the report on Good Practice Guidance for LULUCF¹⁴ is under development. It might be possible to revise them, especially for the soil part.
- It is proposed to expand the expertise for LUCF section of EFDB Editorial Board to ensure complete coverage of forest types and geographical regions (e.g., forests in North America, South America, Australia, China, etc.)
- The following sector-specific issues must be assessed in reviewing new data proposals in the LUCF sector.
 - ✓ The significance of emission/removal category for a country.
 - ✓ Measurement fields (protocol, time, frequency) need to be highly ‘encouraged’ for records checked as ‘measured’ inputs.
 - ✓ Do the background (input) data adequately describe the emission factor submitted?
 - ✓ The availability of relevant emission factors and reliability of data used to determine them.
 - ✓ Representativeness of the sampling
 - ✓ Considerations where emission factor models are the basis for input data (validated? representative?)

The elaborated list of examples of “Properties” for LUCF Sector is included in Appendix 5. (See **Appendix 5, Table 5, pages 22-30.**)

¹⁴ This report is scheduled to be completed in November 2003. After completion of this report, the need for additional expertise in various land use types other than forests may arise. Thus, the list of sector experts may need to be extended.

2.3.5 BOG5: Waste

Major conclusions of BOG5 discussions include, among others:

- Use of Surveys: In future it may be useful to have a table similar to measured data.
- Data on how surveys conducted important.
- Provision of information on measurement methods is highly encouraged.
- There may be room for improvement of definition of measurement categories. It is recommended to call for number of measurements, length of measurement period, season, etc.
- Possible data providers for solid waste are the International Solid Waste Association, World Bank, and academia.
- Possible data providers for wastewater are academia, sanitation experts, and water quality experts.
- Possible data providers for multiple sources are regional & local sanitation organizations, sanitation companies, municipalities, statistics agencies, IPCC waste experts, inventory agencies and WHO.
- It should be noted that information on waste is usually collected for other reasons (i.e. waste generation rates on city level – not national).

The elaborated list of examples of “Properties” for LUCF Sector is included in Appendix 5. (See **Appendix 5, Table 6, pages 31-41.**)

2.4 *Strategies for populating the EFDB*

The TSU had received several offers for, or expression of interest in, providing data/information to the EFDB. In fact, in consultation with the EFDB Steering Group, the TSU had started registering the potential data providers following the procedure endorsed by the TFB at its 9th session. However, it was unforeseeable how many data would be proposed to the EFDB in the near future.

In order to enhance the utility as a public library of high quality data on GHG emission factors and other parameters, some procedures or mechanisms should be devised to continuously promote population of the EFDB. The participants were invited to give some consideration also to this issue. Namely, they were asked to consider how to popularise the EFDB as well as how to populate the EFDB strategically.

As a result, the following suggestions were made.

- The EFDB must be popularised enough in order to receive a lot of voluntary data proposals from inventory experts/scientists in various regions of the world. To this end, the TSU should make every effort to advertise it at every opportunity.
- It is recommended that the TSU contact inventory agencies through focal points to provide data.
- List of possible data providers as proposed by BOGs should be utilised by the TSU.
- EFDB Editorial Board members should promote the EFDB in their countries.
- The revision of the 1996 guidelines will trigger the provision of these data.
- Linkages with other databases and the UNFCCC website should be pursued.

- The Second National Communications of non-Annex I parties could be another source for the EFDB population.
- The TSU should seek the possibility of cooperation or collaboration with other organisations such as UNFCCC, UNITAR, and UNDP.
- Ways to enable easy access to the EFDB web application should be sought (e.g., by changing the URL to a simpler one).
- The TSU could contact authors of the report on *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* to provide data.

2.5 Other discussions

2.5.1 Assessment of a proposal for revision of a data record

During the meeting, a question was raised what would happen if a data provider revises a data record.

Data records in the EFDB can be revised ONLY by the data provider who originally submitted them. No data provider can revise or delete data records that were submitted by other data providers. When a data provider takes action on the EFDB webpage to revise a data record which was originally submitted by him/her, the information will be forwarded to the EFDB Editorial Board as a proposal for revision of an existing data record.

The procedure for assessment set out in the revised TOR of the EFDB Editorial Board is applicable to this kind of proposal. The EFDB Editorial Board should assess the proposal for revision of an existing data record according to the same criteria and the same procedure as those for a new data proposal.

2.5.2 Assessment of data proposals made by “Bulk Import”

A question was raised whether the same strict criteria as set out in Section 2.2.2 would be applied to a set of many data proposals made by “Bulk Import” from other databases or documents.

The participants could not reach a clear consensus on this matter at the meeting due to the time constraint, but through e-mail communications after the meeting it was agreed that the following sentence should be included in the revised TOR of the EFDB Editorial Board. (See **Appendix 3, page 6, paragraph 13.**)

The EFDB Editorial Board will accept without further assessment the data already published by the IPCC. The data presented in emission factor handbooks or international scientific emission databases may be also accepted without further assessment on the condition that the Editorial Board collectively judges that those handbooks or databases are internationally recognised as authoritative information sources.

For clarification, those publications or databases that were granted this special treatment (i.e. acceptance without further assessment) should be explicitly listed and marked somewhere on the EFDB webpage.

This issue might be reconsidered when this kind of data proposals are actually made by “Bulk Import”.

2.5.3 Continuation of the EFDB Steering Group

The EFDB Steering Group was convened during the meeting to discuss the future development of the EFDB. They recognised the need of further development of the EFDB functionality, and hence they concluded that the EFDB Steering Group needs to continue to serve for the project. This conclusion was reported to the plenary of this meeting, and supported by the participants.