



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE
NATIONAL GREENHOUSE GAS INVENTORIES PROGRAMME



IPCC project on Establishment of a Database on GHG Emission Factors

*NARSTO Workshop on Innovative Methods for
Emission Inventory Development and Evaluation*

Austin, Texas

October 14-17, 2003

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Acknowledgements for Database Programming

- Josef Skakala (Spirit Inc., Slovakia)
- Peter Gregus (Spirit Inc., Slovakia)

UNFCCC Reporting Requirements

- Countries have to submit greenhouse gas inventories on regular basis, which are *consistent, complete, comparable, transparent, and accurate*
- Quality of GHG inventories depends on reliable emission factors and activity data

Emission Factors

- *Emission factors* should reflect national/regional circumstances.
 - *Emission factors* have to be accompanied with appropriate scientific background information
 - *Emission factor* development – costly, time consuming, requires much expertise
-  *Need for an easily accessible, shared database on emission factors and other parameters used in inventory calculations*

Objective of the EFDB Project

- To develop a database of emission factors and underlying information for the purposes of securing and disseminating the most current scientific information on emission factors and assisting in increasing transparency and reliability of national inventories.
- Sharing data/information will avoid duplication of research efforts



User's comparisons of the underlying information will facilitate the selection of the most appropriate parameters for their inventory development.

Why an IPCC EFDB?

- Regional inventory workshops (IPCC, UNDP, UNFCCC,.....)
 - ✓ Cuba (IPCC/UNFCCC joint expert meeting, Havana, September 1998)
 - ✓ Ghana (UNFCCC expert meeting, Accra, July, 1999)
 - ✓ UNDP – (Capacity building to Improve National GHG Inventories 2000-2002)
- Development of Revised 1996 IPCC Guidelines
- Development of Good Practice Guidance 2000
- Upcoming revisions and updates to IPCC Guidelines

Development of the database

- Phase I: Planning, Design, and Pilot Testing
 - ✓ New Delhi, 24 – 25 July 2000 (scoping meeting)
 - ✓ Paris, 2 – 4 July 2001 (implementation plan)
 - ✓ Steering group to guide and supervise the database development & testing
 - ✓ Bratislava 23-24 April 2002 (Pilot testing results, needs for improvement)
- ⇒ **EFDB launched at COP8, Oct. 2002**
- Phase II: Use, population, maintenance & improvement as well as dissemination of information on the database 2003 onwards

Users of the EFDB

➤ **Primary Users:**

- ✓ **Inventory compilers** (inventory agencies from every Party to the UNFCCC)
- ✓ **IPCC** (for future update of the IPCC Guidelines)

➤ **Other user groups:**

- ✓ Inventory expert review teams (ERT)
- ✓ Project developers, involved in e.g. CDM & JI
- ✓ Scientist, Consultants involved in GHG inventories work
- ✓ General public and NGOs

Nature of the EFDB

- more of a “Library” than an “Authority”

- Users of the EFDB must be able to trust the background information provided with the quantitative value they find. This means that the inclusion/exclusion of new data in/from the database must be controlled.
- However, usage of the EFDB information for compiling GHG inventories will always be the full responsibility of the user.

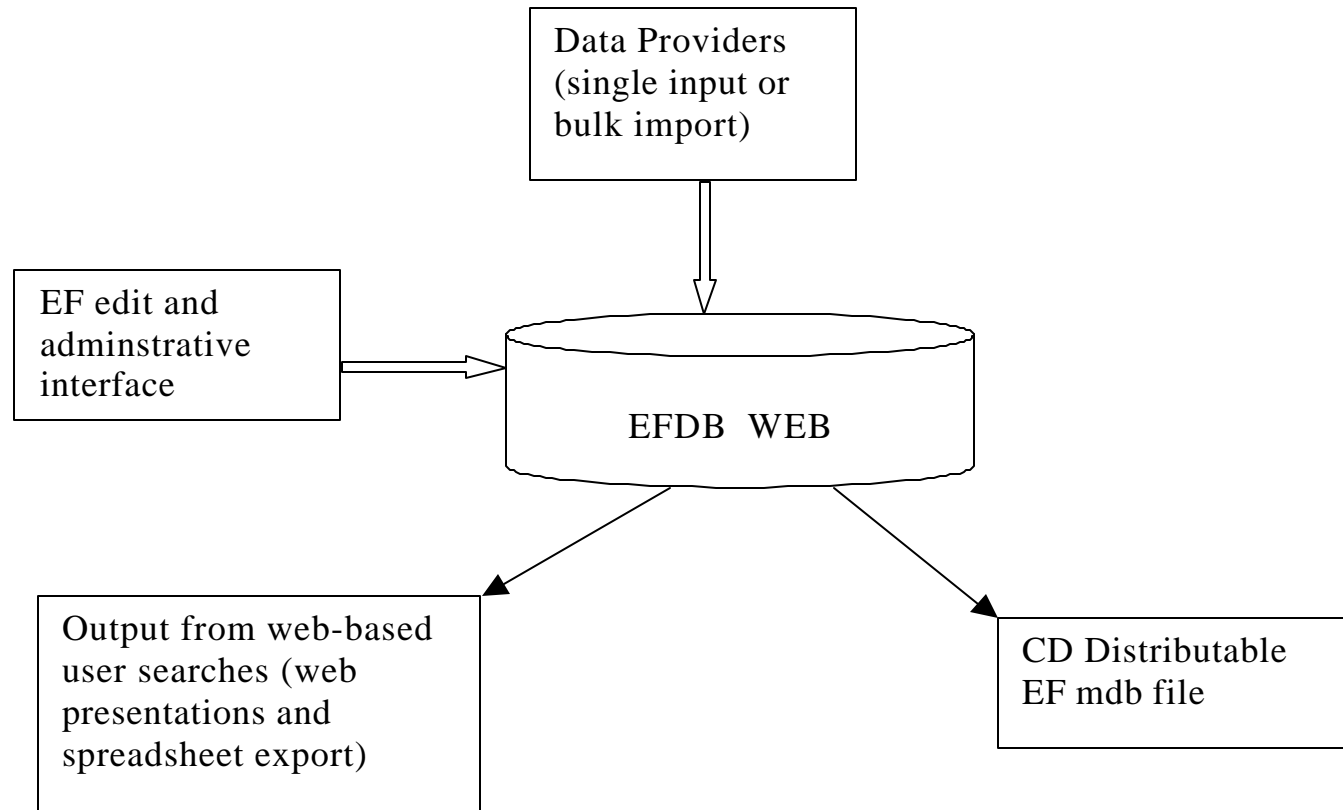
Contents of the EFDB

- **Gases to be included**
 - **CO₂, CH₄, N₂O, HFCs, PFCs, SF₆**
 - + Some other gases (indirect GHGs ...)
- **Structure (categorization) to be followed**
 - **IPCC Source/Sink Categories**
 - **IPCC Fuel Categories (with slight modifications)**
- **Information to be presented (Data fields)**
 - **Administrative information**
 - data provider, date of receipt of the data, etc.
 - **Technical information**
 - descriptive name, value, unit, confidence limit, technical reference, properties, etc.
 - **Usage/Review information**
 - type of EF (Measured/Modeled/...), external QC, etc.

Population of the database

- Goal – a recognised library of EFs with supporting scientific material
- EFDB should assist countries in producing inventories that are neither over- nor under-estimates as far as can be judged and where uncertainties are reduced as far as possible
- At present: IPCC Defaults; CORINAIR data
- To be populated with data from researchers/scientists/experts, research programmes, industry, national databases, ...
- Open to any proposals – the Editorial Board will assess the data for entry to the database using well-defined criteria

EFDB Data Flow



EF SEARCH

➤ **Categorization stage**

- User defines the relevant:
 - Sector
 - Fuel (only in case of Energy Sector)
 - Gas (Plural gases can be chosen at a time)

➤ **Search stage**

- Output table will appear on the webpage.
- User screens them out for the optimal choices by
 - filtering on the webpage, or
 - exporting to MS-Excel and using its functions.

➤ **Acquisition stage**

- User gets detailed information on the selected data.
(Export to MS-Excel)

EF Input (Single, Bulk, Minibatch)

➤ Categorization stage

User defines the relevant:

- Sector
- Fuel (only in case of Energy Sector)
- Gas (Plural gases can be chosen at a time)

➤ Input stage

User specifies:

- Administrative information
- Technical information
- Usage/Review information

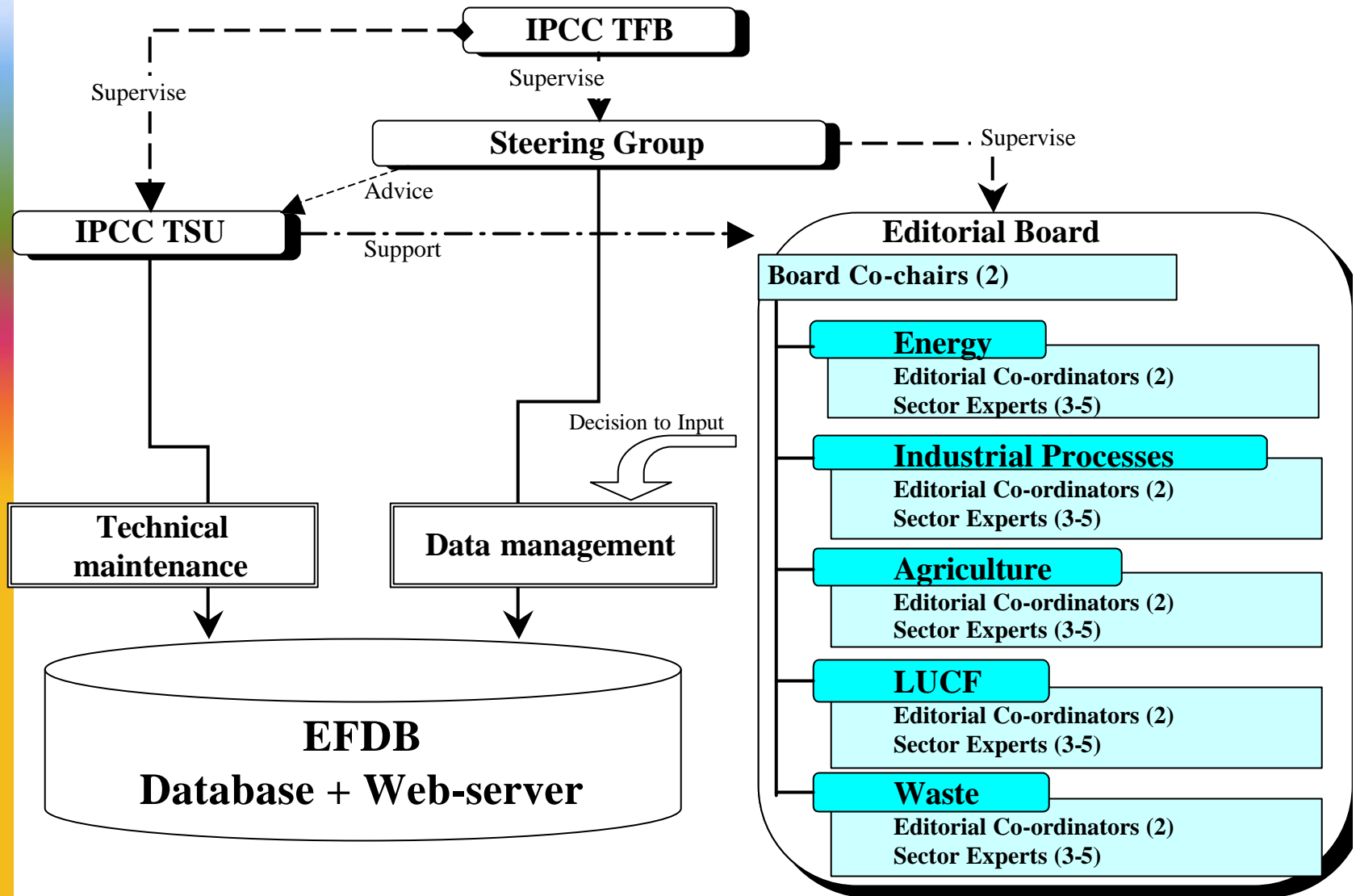


Standardised checks and Editorial Review

Editorial Board

- Evaluation and decision to accept/reject based on following criteria:
 - ✓ Is the EF robust in terms of supporting information on validation, verification, uncertainty?
 - ✓ Is the EF applicable in terms of IPCC source categories or recognized national inventory applications?
 - ✓ Is the EF documented sufficiently to allow user to determine applicability?

Management of the EFDB



Publishing and distribution

- **Web version available now on IPCC website**
 - ✓ <http://www.ipcc-nggip.iges.or.jp/EFDB/main.php>
 - ✓ Updates of the database at fixed intervals (2 to 4 times per year)
 - ✓ User's Guide available soon (to be posted at website)
 - ✓ Website currently provides step-by-step instructions on how to input and find EF data
- **Distribution copies on CD ROM**
 - ✓ For experts with limited access to the Internet
 - ✓ Updates once or twice a year (to be available in late 2003)

Future

- Success – dependent on regular input from the global scientific/inventory society and editorial board review process
- Measure of success – input population and usage statistics along with feedback on usage
- Continuous improvement on the content and functionality – experiences and feedback on user friendliness and reliability is very important (please forward any comments on usage to IPCC TSU: ipcc-efdb@iges.or.jp)

Note on Hardware/Software Requirements for Web application

- Pentium processor and 32 MB of RAM connected to Internet. For optimal performance it is recommended to have at least 64 Kb/s Internet connection speed.
- Microsoft Windows 9x/NT/2000/XP operating system
- Microsoft Internet Explorer version 5.0 or higher for best performance. Alternatively Netscape Navigator version 6.0 or higher can be used.
- Microsoft Office 97 or higher for generating Word and Excel outputs
- Adobe Acrobat Reader version 4.0 or higher (to read relevant documents)