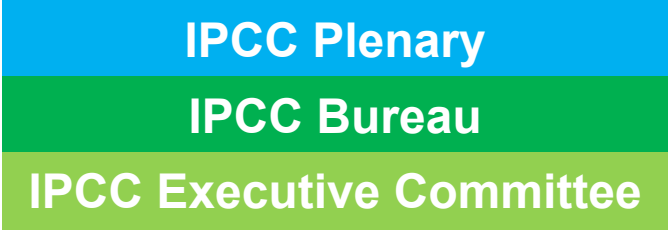




IPCC's Guidelines and Tools for the National GHG Inventory

Seventh meeting of the EGES
Virtual meeting
11 November 2020
IPCC TFI TSU



IPCC Secretariat
 (in Geneva,
 Switzerland)

Working Group I
 The Physical Science Basis
 TSU
 (France/China)

Working Group II
 Climate Change Impacts, Adaptation and Vulnerability
 TSU
 (Germany/South Africa)

Working Group III
 Mitigation of Climate Change
 TSU
 (UK/India)

Task Force on National Greenhouse Gas Inventories (TFI)
 TSU
 (Japan)

Authors, Contributors, Reviewers

Develop and refine the internationally-agreed methodology to estimate GHG emissions and removals at national level
 Encourage the widespread use of this

What are National GHG Inventories?

- **Time series of national Estimates** of all emissions and removals of greenhouse gases (GHG) from given sources and sinks (i.e. GHG Inventory categories) from a defined territory in a specific period of time associated with human activities.
- **National Estimates:**
 - Anthropogenic Greenhouse Gases fluxes,
 - Occurring within a year, in a series across years
 - Across the entire National Territory

Note

under the Paris Agreement, every country shall report NKGIs

Why do we need inventory guidelines?

- Any international agreement to limit climate change must set emission limits/targets/goals and monitor progress in an open and transparent way
- Currently, **most emissions/removals can only be estimated at national scale, not measured**, and so consensus on the best way of doing this is needed
- To do this we need reliable, generally accepted methods and guidelines

How?

Infer emissions based on parameters (EF) associated with activities (AD). For example:

- ✓ Amount of fuel burnt (AD)
- ✓ Carbon content in fuel determines the amount of CO₂ emitted from a unit of fuel burnt (EF)
- ✓ CO₂ proportional to amount of fuel burnt (E)

$$E_{GHG} = AD \times EF_{GHG}$$

Where: E = Emission; AD = Activity Data; EF = Emission Factor

95% CI of AD, EF, and Estimates is to be calculated

Data Collection

- In establishing routine, formalised, data collection use should be made of existing **statistical organisations...**
(e.g. , *waste statistics for the estimation of methane emissions*)
- It is **good practice to engage data suppliers** in the process of inventory compilation and improvement by involving them in activities such as:
 - ...
 - Scientific or statistical workshops on the inventory inputs and outputs
- **Census vs Survey/Sampling**
- **Accuracy & Precision**
- **Uncertainty Analysis**
 - *Uncertainty in the mean vs Uncertainty in the individual*
 - *Standard error vs Standard deviation*

IPCC Guidelines and Paris Agreement

- “Katowice Climate Package” to operationalize the PA. UNFCCC COP24/CMA.1, December 2018.
 - **Each Party shall use the 2006 IPCC Guidelines**, and shall use any subsequent version or refinement of the IPCC guidelines agreed upon by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA).



Source: IISD/ENB

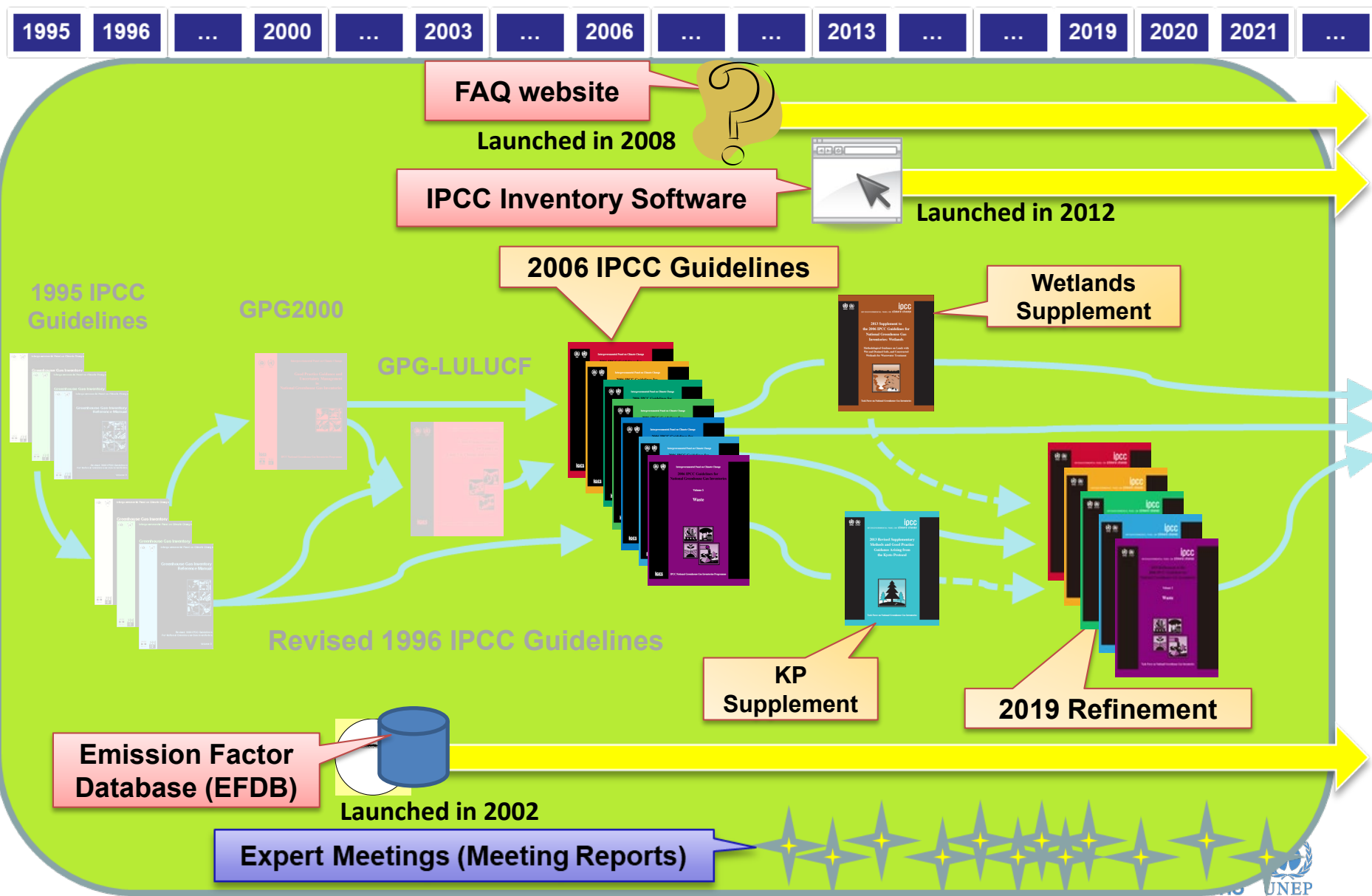


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INTERGOVERNMENTAL PANEL ON climate change



IPCC Guidelines and supporting tools



Various Tools – Supporting Materials

- Emission Factor Database (EFDB)

<https://www.ipcc-nggip.iges.or.jp/EFDB/>

- IPCC Inventory Software

<https://www.ipcc-nggip.iges.or.jp/software/index.html>

- Primer for 2006 IPCC Guidelines

<https://www.ipcc-nggip.iges.or.jp/support/support.html>

- Reports of Expert Meetings

<https://www.ipcc-nggip.iges.or.jp/meeting/meeting.html>

- Frequently Asked Questions

<https://www.ipcc-nggip.iges.or.jp/meeting/meeting.html>

EFDB

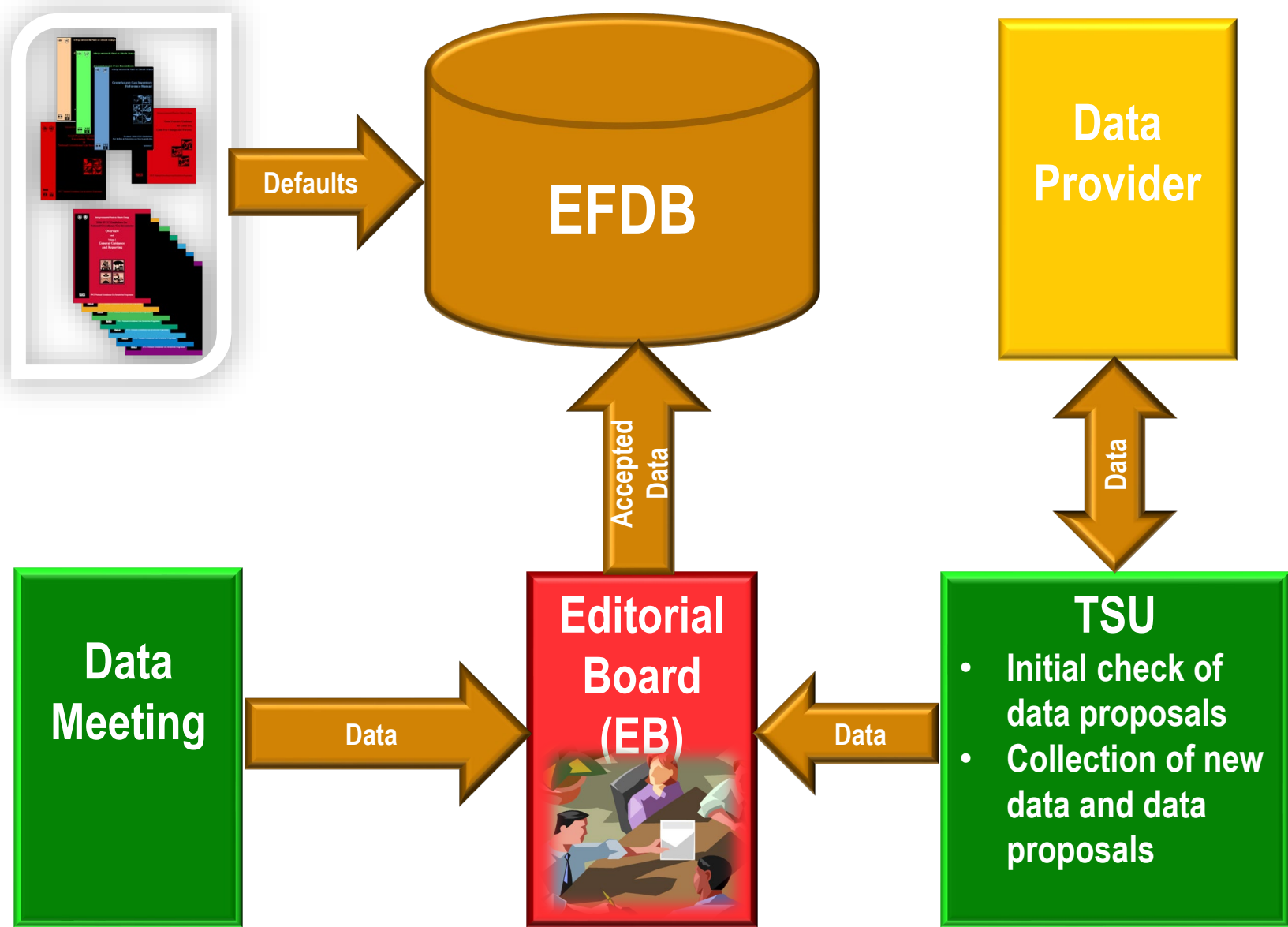
- Library of emission factors and other parameters (*with background documentation and technical references*) that can be used for estimation of GHG emissions and removals in Inventories
- Data collected:
 - Default values from IPCC Guidelines
 - Data from peer-reviewed papers
 - Data from other publications (e.g., national reports)
- It evolves across time

The EFDB is not intended for authorization of use of specific EFs by countries.

It serves as a library where inventory compilers can find EFs suitable to their countries by their own judgement

Data upload procedure

- **Data compiled in proposals** submitted to the Editorial Board of the EFDB for consideration, through the IPCC TFI Technical Support Unit (TSU)
- **Open to any data proposals** from any subject
- Criteria for inclusion of new data: **robustness, applicability and documentation**
- Contact IPCC TFI-TSU at ipcc-efdb@iges.or.jp



Web application

The screenshot shows the EFDB (Emission Factor Database) web application interface. The top navigation bar includes 'Home', 'Basic search', 'Fulltext search', 'Search by ID', 'Documents', 'Downloads', and 'Help'. The 'Basic search' option is highlighted with a pink box. Below the navigation bar, there are links for 'Hide IPCC Category tree', 'Hide status', 'Select Gases', 'Select Fuels', 'Select Type of Parameter', and 'Choose table columns'. The 'Select Gases' link is highlighted with a pink box. A dropdown menu for 'IPCC Guidelines' is set to '2006'. A tree view shows categories: 1 - Energy, 2 - Industrial Processes and Product Use, 3 - Agriculture, Forestry, and Other Land Use, 4 - Waste (selected), and 5 - Other. The 'Status' section shows: 'IPCC 2006 Source/Sink Category: Waste (4)', 'Gases: (All)', 'Fuels: (All + NA)', and 'Type of parameter: (All)'. Below this, there are navigation controls for 'Displayed records: 1 - 20 / 1718.' and an 'Export to XLS' button highlighted with a pink box. A table of search results is shown with columns: Filter, EF ID, IPCC 1996, IPCC 2006, Gas, Fuel, Type of parameter, Description, Regional emissions, Value, Unit, and Action. The first two rows of data are visible. The 'Apply filter' button is highlighted with a pink box. Callouts with arrows point to various elements: 'Search options (e.g. Basic search)' points to the search bar; 'Specify gas, type of parameters etc.' points to the 'Select Gases' link; 'Status of search' points to the status section; 'To narrow down search results' points to the 'Apply filter' button; 'Details of data' points to the 'Detail' button in the table; and 'Results can be exported in Excel' points to the 'Export to XLS' button.

Search options (e.g. Basic search)

Specify gas, type of parameters etc.

Status of search

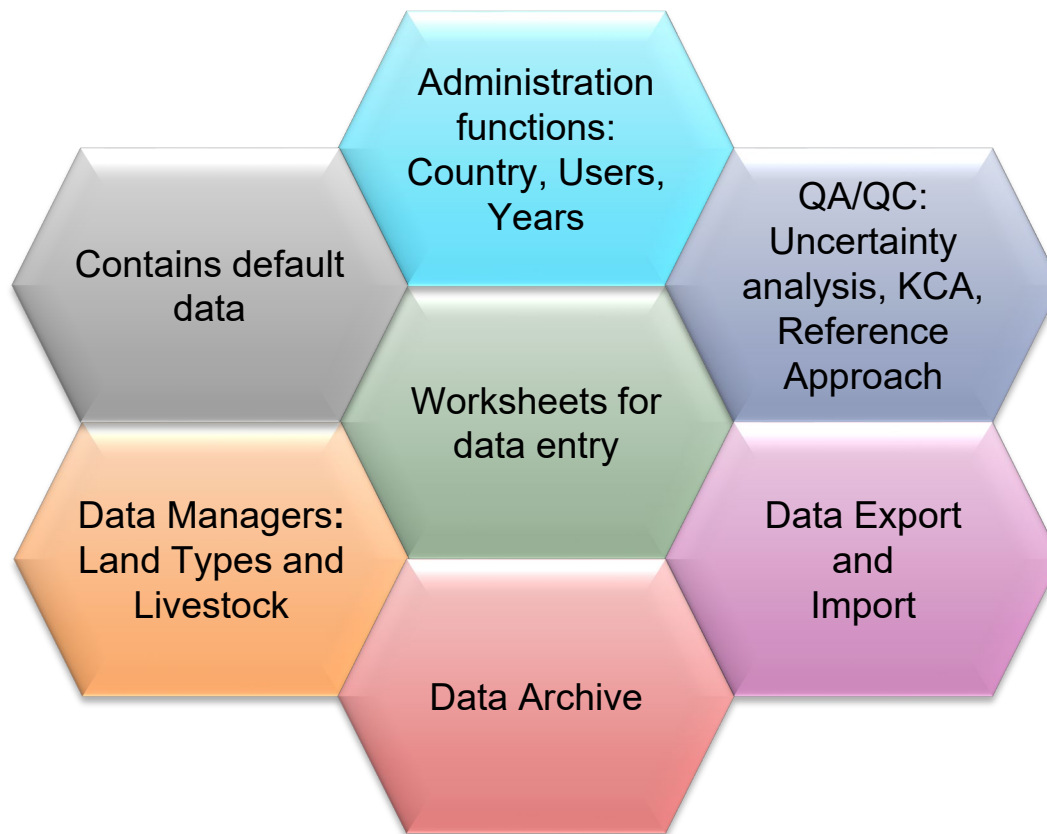
To narrow down search results

Details of data

Results can be exported in Excel

<https://www.ipcc-nggip.iges.or.jp/EFDB/main.php>

IPCC Inventory Software



<https://www.ipcc-nggip.iges.or.jp/software/index.html>

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Thank you

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