



Session 2: Overview of the IPCC Inventory Software for National Greenhouse Gas Inventories

SBSTA - 56

8 June, 2022

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IPCC TFI TSU

ipcc

INTERGOVERNMENTAL PANEL ON climate change



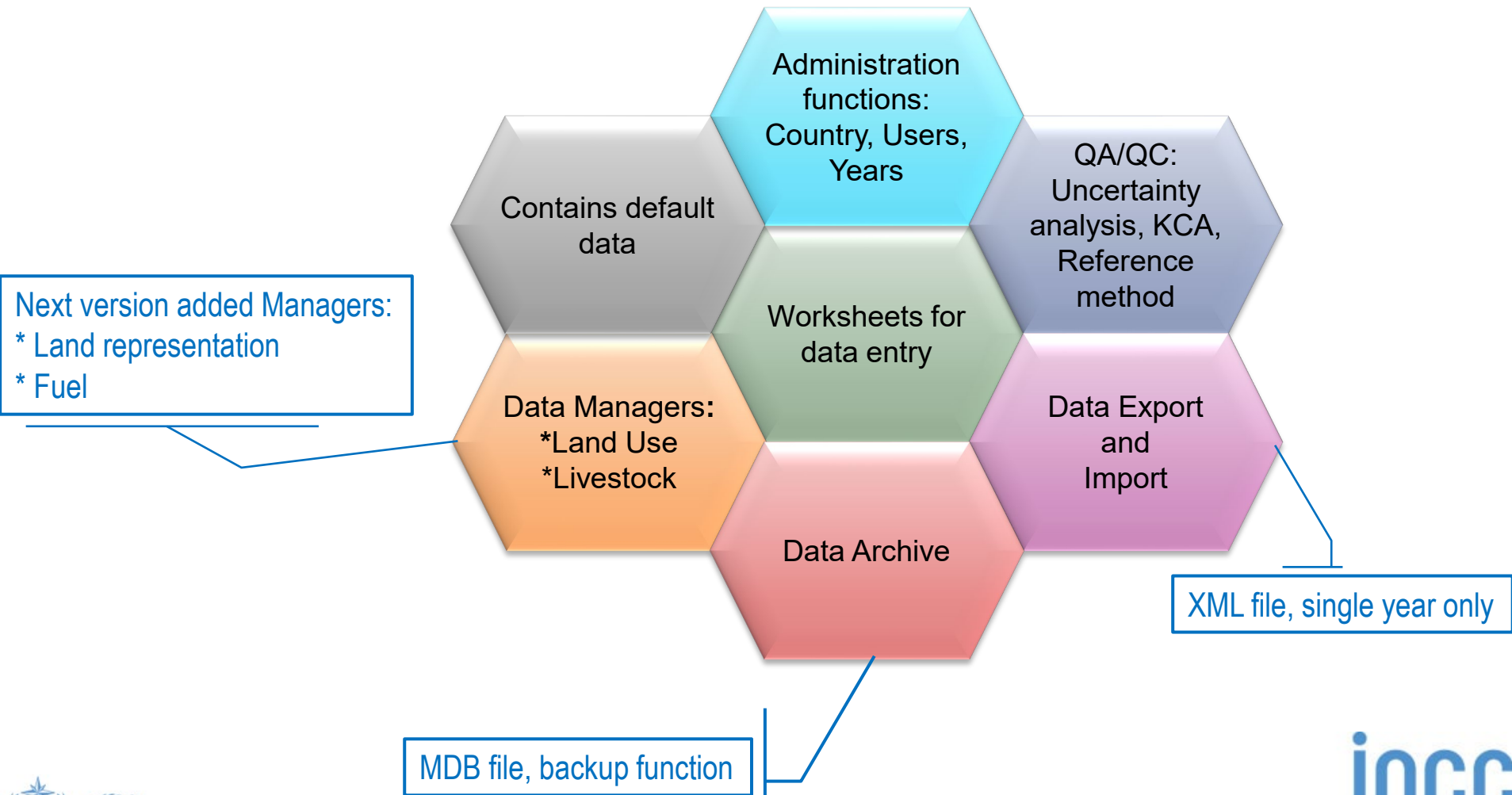
Background

- ✓ produced, since 2012, by the IPCC Task Force on National Greenhouse Gas Inventories (IPCC TFI) to assist inventory compilers in using the 2006 IPCC Guidelines
- ✓ based on MS-Access for WindowsOS
- ✓ Free to use
(download at <https://www.ipcc-nggip.iges.or.jp/software/index.html>)
- ✓ Support to users provided by IPCC TFI TSU

Background

- ✓ originally designed to implement Tier 1 Worksheets only provides default data from the *2006 IPCC Guidelines*
- ✓ current **version 2.691** allows input of **user-specific values** for **EFs** and **parameters (Tier 2)** for **Energy, IPPU, Agriculture, Waste** categories
- ✓ can be **used for the whole inventory or just individual categories**
- ✓ **allows different sectors to be developed simultaneously**
- ✓ **can report outputs in non-Annex I National Communications format** (*reporting tables, consistent with Tables 1 and 2 in Annex to Decision 17/CP.8*)
- ✓ **Support the implementation of IPCC methodological tiers and approaches** although **allow flexibility** to users to match their national circumstances

Software Functions



The Software

IPCC Inventory Software - TSU

Application Database Inventory Year Worksheets Reports Tools Export/Import Administrate Window Help

- 2006 IPCC Categories**
- Energy
 - 1.A - Fuel Combustion Activities
 - 1.A.1 - Energy Industries
 - 1.A.1.a - Main Activity Electricity an
 - 1.A.1.a.i - Electricity Generation
 - 1.A.1.a.ii - Combined Heat and
 - 1.A.1.a.iii - Heat Plants
 - 1.A.1.b - Petroleum Refining
 - 1.A.1.c - Manufacture of Solid Fuel
 - 1.A.1.c.i - Manufacture of Solid
 - 1.A.1.c.ii - Other Energy Industr
 - 1.A.2 - Manufacturing Industries and C
 - 1.A.2.a - Iron and Steel
 - 1.A.2.b - Non-Ferrous Metals
 - 1.A.2.c - Chemicals
 - 1.A.2.d - Pulp, Paper and Print
 - 1.A.2.e - Food Processing, Bevera
 - 1.A.2.f - Non-Metallic Minerals
 - 1.A.2.g - Transport Equipment
 - 1.A.2.h - Machinery
 - 1.A.2.i - Mining (excluding fuels) an
 - 1.A.2.j - Wood and wood products
 - 1.A.2.k - Construction
 - 1.A.2.k.i - Textile and Leather
 - 1.A.2.k.m - Non-specified Industry
 - 1.A.3 - Transport
 - 1.A.3.a - Civil Aviation
 - 1.A.3.a.i - International Aviation
 - 1.A.3.a.ii - Domestic Aviation
 - 1.A.3.b - Road Transportation
 - 1.A.3.b.i - Cars
 - 1.A.3.b.i.1 - Passenger cars
 - 1.A.3.b.i.2 - Passenger cars
 - 1.A.3.b.ii - Light-duty trucks
 - 1.A.3.b.ii.1 - Light-duty truc
 - 1.A.3.b.ii.2 - Light-duty truc
 - 1.A.3.b.iii - Heavy-duty trucks a
 - 1.A.3.b.iv - Motorcycles
 - 1.A.3.b.v - Evaporative emissio

2006 IPCC Guidelines

Worksheets

Fuel Consumption Data Fuel Combustion Emissions

Worksheet

Sector: Energy

Category: Fuel Combustion Activities

Subcategory: 1.A.1.a.i - Electricity Generation

Sheet: Fuel Consumption Data

Data

Fuel Type (All fuels)

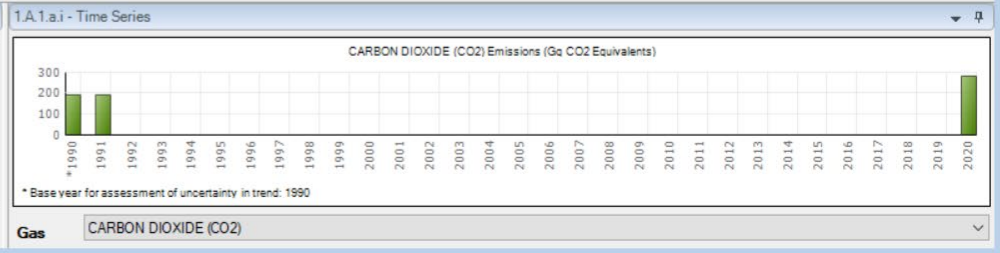
Equation 2.4

Subdivision	Fuel	Consumption Unit	Consumption (Mass, Volume or Energy Unit)	Conversion Factor (TJ/Unit) (NCV)	Total consumption (TJ)				
S	F	U	C	CF	TC = C * CF				
Region A	Crude Oil	TJ	500	1	500				
Region B	Crude Oil	Gg	50	42.3	2115				
Region C	Lignite	Gg	1000	11.9	11900				
Region D - Plant X	Oil Shale / Tar Sands	Gg	2000	8.9	17800				
Region D - Plant Y	Natural Gas (Dry)	Gg	700	48	33600				
Region D - Plant W	Natural Gas + Hydrogen (20%)	Gg	3000	55	165000				
Total						230915			

Fuel Manager... Time Series data entry...

Worksheet remarks

Save



Country/Territory: Japan Inventory Year: 1990 Base year for assessment of uncertainty in trend: 1990 CO2 Equivalents: SAR GWPs (100 year time horizon) Database file: (G:\Shared drives\IPCC-TSU\inventory_software\ipcc2006.accdb)



Worksheets (timeseries data entry)

AutoSave Off 1A1ai.xlsx Search (Alt+Q) sandro federici

File Home Insert Page Layout Formulas Data Review View Help ACROBAT

Clipboard Font Alignment Number Styles Cells Editing Analysis

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Generated:	12/05/2022 10:05:53														
2	Country:	Japan														
3	Sector:	Energy														
4	Category:	Fuel Combustion Activities														
5	Subcategory:	1.A.1.a.i - Electricity Generation														
6	Sheet:	Fuel Consumption Data														
7	Parameter:	Consumption (Mass, Volume or Energy Unit)														
8																
9	Subdivision	Fuel	Fuel GUID	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2020	
10	Region A	Crude Oil	00000001-0000-0000-0000-000000000000	500												
11	Region B	Crude Oil	00000001-0000-0000-0000-000000000000	50												
12	Region C	Lignite	0000001b-0000-0000-0000-000000000000	1000												
13	Region D - Plant W	Natural Gas + Hydrogen (20%)	14721647-0521-4398-972d-6d1b5c5da8de	3000												
14	Region D - Plant X	Oil Shale / Tar Sands	0000001c-0000-0000-0000-000000000000	2000												
15	Region D - Plant Y	Natural Gas (Dry)	00000026-0000-0000-0000-000000000000	700												
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Reporting

Main Menu

→ Report

IPCC Report	Level	Contents
Summary (IPCC)	1.A.1	Emissions/Removals
Short summary (IPCC)	1.A	Emissions/Removals
Sectoral (IPCC)	1.A.1.a.ii (most disaggregated level)	Emissions/Removals
Background (IPCC)	1.A.1.a.ii (most disaggregated level)	AD, Emissions/Removals

Main Menu

→ Export

UNFCCC Report	Level	Contents
NAI 1 & 2 (UNFCCC 17/CP.8)	1.A.1	Emissions/Removals

Note: All reports can be exported as MS Excel file

Version 2.80

Updated architecture:

- ✓ Microsoft .NET Framework 4.6.2
- ✓ Microsoft ACE OLEDB 12

Allow to use altogether different Tier-worksheets within a category *(instead of being a Tier alternative)*

Allow input of user-defined emission factors and parameters in any worksheets

Version 2.80

Implementation of all IPCC Tiers and Approaches provided in the 2006 IPCC Guidelines and its Wetlands Supplement in the

AFOLU & ENERGY sectors

Wetlands Supplement

IPCC Inventory Software - TSU

Application Database Inventory Year Worksheets Reports Tools Export/Import Administrate Window Help

- 2006 IPCC Categories**
- 3.B.4.b.i - Land converted for Peat Ex
 - 3.B.4.b.ii - Land converted to Flooded
 - 3.B.4.b.iii - Land converted to Other
 - 3.B.5 - Settlements
 - 3.B.5.a - Settlements Remaining Settlem
 - 3.B.5.b - Land Converted to Settlements
 - 3.B.5.b.i - Forest Land converted to S
 - 3.B.5.b.ii - Cropland converted to Sett
 - 3.B.5.b.iii - Grassland converted to S
 - 3.B.5.b.iv - Wetlands converted to Set
 - 3.B.5.b.v - Other Land converted to S
 - 3.B.6 - Other Land
 - 3.B.6.a - Other land Remaining Other lan
 - 3.B.6.b - Land Converted to Other land
 - 3.B.6.b.i - Forest Land converted to O
 - 3.B.6.b.ii - Cropland converted to Oth
 - 3.B.6.b.iii - Grassland converted to Ot
 - 3.B.6.b.iv - Wetlands converted to Ot
 - 3.B.6.b.v - Settlements converted to
 - Aggregate sources and non-CO2 emissions
 - 3.C.1 - Burning
 - 3.C.1.a - Burning in Forest Land
 - 3.C.1.b - Burning in Cropland
 - 3.C.1.c - Burning in Grassland
 - 3.C.1.d - Burning in All Other Lands
 - 3.C.2 - Liming
 - 3.C.3 - Urea application
 - 3.C.4 - Direct N2O Emissions from managed
 - 3.C.5 - Indirect N2O Emissions from manage
 - 3.C.6 - Indirect N2O Emissions from manure
 - 3.C.8 - CH4 from Drained Organic Soils
 - 3.C.9 - CH4 from Drainage Ditches on Organi
 - 3.C.10 - CH4 from Rewetting of Organic Soils
 - 3.C.11 - CH4 Emissions from Rewetting of M
 - 3.C.12 - N2O Emissions from Aquaculture
 - 3.C.13 - CH4 Emissions from Rewetted and

- 2006 IPCC Guidelines**
- Other

Country/Territory: Japan Inventory Year: 1990 Base year for assessment of uncertainty in trend: 19

Worksheets

Managed manure N available for application to managed soils, feed, fuel or construction uses Synthetic N applied to managed soils Organic N applied to managed soils N in crop residues N in mineral soils that is mineralised

Urine and dung inputs to managed soils (1 of 2) Urine and dung inputs to managed soils (2 of 2) Drainage of managed organic soils Rewetting of managed organic soils Summary of Direct N2O Emissions from managed soils

Worksheet: **Rewetting of managed organic soils**

Sector: Agriculture, Forestry and Other Land Use

Category: Aggregate Sources and Non-CO2 Emissions Sources on Land

Subcategory: 3.C.4 - Direct N2O Emissions from managed soils

Sheet: Rewetting of managed organic soils (Wetlands supplement, Tier 2)

Data

Region: (All)

Equation 3.9 WS

Land unit code	Initial land use	Land use during reporting year	Land area of rewetted organic soils (ha)	Emission Factor for rewetted organic soils (kg N2O-N / ha / yr)	N2O-N Emissions (kg N2O-N / yr)	N2O Emissions (kg N2O / yr)
			Arewetted	EF	N2O-N = Arewetted * EF	N2O = N2O-N * 44/28
Total			0		0	0

Under Tier 1, emissions of nitrous oxide from rewetted soil

Worksheets

Drainage: on-site and off-site CO2-C emissions from SOM Extraction: off-site CO2-C emissions Extraction: on-site CO2-C emissions

Worksheet: **Extraction: on-site CO2-C emissions**

Sector: Agriculture, Forestry and Other Land Use

Category: Wetlands

Subcategory: 3.B.4.a.i - Peat Extraction remaining Peat Extraction

Sheet: Peat extraction sites - drainage: on-site and off-site CO2-C emissions from SOM

Data

Region: National - Approach 3

Equation 2.2, 2.3, 2.4, 4.8 WS

Land unit code	Initial land use	Land use during reporting year	Area (ha)	CO2 on-site emission factor for climate type and nutrient status of peat and drainage class in drained soils (tonnes CO2-C / ha / yr)	Flux of DOC from natural (undrained) organic soil (tonnes C / ha / yr)	Proportional increase in DOC flux from drained sites relative to undrained sites	Conversion factor for proportion of DOC converted to CO2 following export from site	CO2 off-site emission factor for climate type and nutrient status of peat and drainage class in drained soils (tonnes CO2-C / ha / yr)	CO2 emissions from peat fire in drained land (tonnes CO2-C / ha / yr)	Annual carbon loss from drained organic soils (tonnes C / yr)
			A(d)	Table 7.4 / 2.1 WS or national statistics	Table 2.2 WS or national statistics	Table 2.2 WS or national statistics	Table 2.2 WS or national statistics	Table 2.2 WS / Eq. 4.8 or national statistics	From 3.C.1	CO2-C(d) = A(d) * (EF(0s) + EF(DOC)) + L(fg)
Total			0							0



Subnational disaggregation

Subnational disaggregation of categories

(e.g. federal states inventories; tracking of specific sources subject to mitigation actions)

Although multi-users at category level not allowed yet

Subnational disaggregation (land)

Land Representation Manager

Regions | Land representation table | Annual land representation matrix (Approach 2 & 3)

Whole country area (ha) 3,000,000

Region name	Area (ha)	Approach	Remark
Region 1	1000	Approach 1	
Region 2	1000	Approach 2	
Region 3	1000	Approach 3	
Total	3000.000		

IPCC Inventory Software - TSU - [Worksheets]

Application Database Inventory Year Worksheets Reports Tools Export/Import Administrate Window Help

2006 IPCC Guidelines

SOM Mineral (Approach 2.3) SOM Mineral (SD) SOM Organic Drained SOM Organic Rewetted
 Biomass increase (GAL 1/4) Biomass loss (GAL 2/4) Biomass loss (GAL 3/4) Biomass loss (GAL 4/4) Biomass change (SD) Biomass change (Abrupt) DOM (GAL 1/1) DOM (SD 1/1) SOM Mineral (Approach 1 - Information item)

Worksheet

Sector: Agriculture, Forestry and Other Land Use
 Category: Forest Land
 Subcategory: 3.B.1.a - Forest land Remaining Forest land
 Sheet: 1 of 4 Annual increase in carbon stocks in biomass (includes above-ground and below-ground biomass)

1990

Data

Region National - Approach 3

Land use category				Equation 2.9	Equation 2.10							Equation 2.9	
Land unit code	Initial land use	Land use during reporting year	National statistics or international data sources	Area (ha)	Average net annual increment of growing stock (m ³ / ha / yr)	biomass expansion factor for conversion of annual net increment to above-ground biomass increment (t d.m. / m ³ fresh volume)	Basic wood density (t d.m. / m ³ fresh volume)	Biomass conversion and expansion factor for increment (t d.m. / m ³ wood volume)	Average annual above-ground biomass growth (tonnes d.m. / (ha * yr))	Ratio of below-ground biomass to above-ground biomass (t bg d.m. / tag d.m.)	Average annual biomass growth above- and below-ground (tonnes d.m. / (ha * yr))	Carbon fraction of dry matter (tonnes C / tonne d.m.)	Annual increase in biomass carbon stocks due to biomass growth (tonnes C / yr)
				A	Iv	BEF1	D	BCEFI	Gw	R	Gtotal	CF	ΔCG
Unit 5	Manage...	Manage...	Manage...	1000					3	0.2	3.7	0.5	1748.4
Unit 8	Plantati...	Plantati...	Plantati...	1000					4	0.3	5.2	0.5	2631.6
Unit 1.1	Protecte...	Protecte...	Protecte...	1000					0	0.2	0	0.5	0
Unit 1.2	Protecte...	Protecte...	Plantation	2000					4	0.3	5.2	0.5	5263.2
Total				5000							14		9643.2

Subnational disaggregation (livestock)

Livestock Manager ×

Geographical zones **Livestock** Manure Management System

Save Undo Close

Geographical zone	Average annual temperature [°C]	Remark	
▶ Region 1	15		✘
Region 2	13		
Region 3	26		
*			

Geographical zones are user-defined. Entire country may be reported under a single Geographical zone.

Subnational disaggregation (others)

1990

Fuel Consumption Data | Fuel Combustion Emissions

Worksheet
Sector: Energy
Category: Fuel Combustion Activities
Subcategory: 1.A.1.a.i - Electricity Generation
Sheet: Fuel Consumption Data

Data
Fuel Type (All fuels) ▾

Equation 2.4

Subdivision	Fuel	Consumption Unit	Consumption (Mass, Volume or Energy Unit)	Conversion Factor (TJ/Unit) (NCV)	Total consumption (TJ)
S	F	U	C	CF	TC = C * CF
Region A	Crude Oil	TJ	500	1	500
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Region D - Plant Y	Natural Gas (Dry)	Gg	700	48	33600
Region D - Plant W	Natural Gas + Hydrogen (20%)	Gg	3000	55	165000
Total					230915

Fuel Manager... Time Series data entry...



Upgrades - I

Implementation of all IPCC Tiers and Approaches provided in the 2006 IPCC Guidelines and its **Wetlands Supplement** in the

IPPU & WASTE sectors

Upgrades - II

Paris agreement requirements:

- ✓ **AR5 GWP₁₀₀**
- ✓ **Indirect CO₂ emissions**
- ✓ (memo item) **Indirect N₂O emissions**
- ✓ **Interoperability with reporting tools** referred to in UNFCCC decision 5/CMA.3

Upgrades - III

- ✓ Time series export/import
- ✓ Uncertainty Analysis Approach 2
- ✓ Key Category Analysis Approach 2

Upgrades - IV

- ✓ Multi-users at category level
- ✓ Connection to the IPCC Emission Factor DataBase

IPCC Emission Factor Database (EFDB)

- Launched in 2002
- Library of emission factors (EFs) and other parameters with background information <https://www.ipcc-nggip.iges.or.jp/EFDB/main.php>
 - ✓ Default data from IPCC Guidelines
 - ✓ Data from peer-reviewed scientific papers
 - ✓ Data from other publications (e.g., national reports)
- Communication platform to share data and information that can be used for estimation of national greenhouse gas (GHG) emissions/removals
- The EFDB has been referred to in a number of conclusions and recommendations from meetings under the UNFCCC
- Regularly updated with data (*e.g., more than 230 data were accepted by the Editorial Board in 2021 and added to the EFDB*)
- Continuously improved user-interface (*e.g., to allow planned addition of 2019 Refinement values*)

IPCC EFDB

- Freely accessible online (*offline application is also available for download*)
- Evolves dynamically through:
 - ✓ data proposals (*e.g., voluntary submissions from experts*)
 - ✓ data collection activities (*e.g., IPCC EFDB annual expert meetings on data, literature search*)
- Open to any data proposals (ipcc-efdb@iges.or.jp)
 - ✓ Data proposals are considered by the EFDB Editorial Board for inclusion into the EFDB
 - ✓ Criteria for inclusion of data: **robustness, applicability and documentation**

EFDB search

The screenshot shows the EFDB search interface with several callouts:

- Search options (e.g., Basic search):** Points to the 'Basic search' tab in the navigation bar.
- Specify gas, type of parameters etc.:** Points to the 'Select Gases | IPCC Default Data | Other (non-default) Data' dropdown menu.
- Status of search:** Points to the 'Status' section showing search criteria like 'IPCC 2006 Source/Sink Category: Waste (4) -> Wastewater Treatment and Discharge (4.D)'.
- To narrow down search results:** Points to the 'Apply filter' button.
- To see details of data:** Points to the 'Detail' button in the results table.
- Results of search can be exported in Excel file:** 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

To see details of data




Results of search can be exported in Excel file

Filter	Select Gases										
Active Filters											
EF ID	IPCC 2006	Gas	Type parameter	Description	Technologies / Practices	Parameters / Conditions	Region / Conditions	Unit	Source of data	Action	
614859	4.D.1 - Domestic Wastewater Treatment and Discharge	METHANE	2006 default	CH4 correction factor (MCF) for domestic wastewater	untreated system	Sea, river, lake discharge		0.1 fraction	Table6.3, p.6.13 in 2006 Guidelines	Detail	
614860	4.D.1 - Domestic Wastewater Treatment and Discharge	METHANE	2006 default	CH4 correction factor (MCF) for domestic wastewater	untreated system	Stagnant sewer		fraction	Table6.3, p.6.13 in 2006 Guidelines	Detail	

EFDB outputs and details of data

A	B	C	D	E	F	G	H
EF ID	IPCC 1996 Source/Sink Category	IPCC 2006 Source/Sink Category	Gas	Type of parameter	Description	Technologies / Practices	Parameters / Conditions
614859	6B2 - Domestic and Commercial Wastewater	4.D.1 - Domestic Wastewater Treatment and Discharge	METHANE	2006 IPCC default	CH4 correction factor (MCF) for domestic wastewater	untreated system	Sea, river, lake discharge
614860	6B2 - Domestic and Commercial Wastewater	4.D.1 - Domestic Wastewater Treatment and Discharge	METHANE	2006 IPCC default	CH4 correction factor (MCF) for domestic wastewater	untreated system	Stagnant sewer
614861	6B2 - Domestic and Commercial Wastewater	4.D.1 - Domestic Wastewater Treatment and Discharge	METHANE	2006 IPCC default	CH4 correction factor (MCF) for domestic wastewater	untreated system	Flowing sewer (open or closed)

EFDB
emission factor database

INTERGOVERNMENTAL PANEL ON climate change

[Home](#) [Basic search](#) [Fulltext search](#) [Search by ID](#) [Documents](#) [Off-line version of EFDB](#) [IPCC web sites](#) [Help](#)

Emission Factor Details (ID: 614859)

Administrative information	
Data Provider:	IPCC
Data Provider Country:	(Not applicable)
Data Provider Contact:	ipcc-efdb@ges.or.jp
Date calculated:	
Date submitted to EFDB by Data Provider:	
Date posted to EFDB by IPCC:	

Technical information	
Gas:	METHANE
IPCC 1996 Source/Sink Category:	Waste (6) -> Wastewater Handling (6B) -> Domestic and Commercial Wastewater (6B2)
IPCC 2006 Source/Sink Category:	Waste (4) -> Wastewater Treatment and Discharge (4.D) -> Domestic Wastewater Treatment and Discharge (4.D.1)
Properties	
Technologies/Practices:	untreated system
Parameters/Conditions:	Sea, river, lake discharge
Region/Regional Conditions:	
Abatement/Control Technologies:	
Others:	
Description:	CH4 correction factor (MCF) for domestic wastewater
Value:	0.1 fraction
Value in common units:	
Equation:	Equation 6.2 of Chapter 6, Volume 5 of 2006 IPCC Guidelines
IPCC Worksheet:	4D1
Source of data:	Table 6.3, p. 6.13 in 2006 Guidelines
Technical Reference:	Table 6.3, p. 6.13 in 2006 Guidelines
Reference language:	English
Abstract in English:	
Uncertainties expressed as 95% confidence limit:	Upper: +50% Lower: -50%
Data quality:	
Distribution shape:	
Data quality reference:	expert judgement by lead authors of Chapter 6 Volume 5
Other info on data quality:	The MCF value can range between 0 - 0.2. The MCF is technology dependent. Thus the uncertainty range is also technology dependent. The uncertainty range should be determined by expert judgement, bearing in mind that MCF is a fraction and must be between 0 and 1. Suggested ranges are provided below. Untreated systems and latrines, ± 50% Lagoons, poorly managed treatment plants ± 30% Centralized well managed plant, digester, reactor, ± 10%

Usage/Review information	
Type of parameter:	2006 IPCC default
Comments from the data provider:	Rivers with high organic loadings can turn anaerobic
Comments from others:	
Link:	

Supporting Tools I

Excel-based tool:

- HWP excel-based tool for data retrieval from FAOSTAT website and upload to the IPCC Inventory Software

AutoSave On | IPCC-IS_HWP_upload.xlsx | Last Modified: Just now | Search (Alt+Q)

File Home Insert Page Layout Formulas Data Review View Help ACROBAT

Clipboard Font Alignment Number Styles Cells

Clipboard: Cut, Copy, Paste, Format Painter
Font: Arial, 10, Bold, Italic, Underline, Color, Background Color
Alignment: Wrap Text, Merge & Center
Number: General, Percent, Decimals, Increase/Decrease
Styles: Conditional Formatting, Format as Table, Cell Styles
Cells: Insert, Delete, Format

A1

1 IPCC Harvested Wood Products (HWP) Upload

2

3

4 This Spreadsheet was initially developed by Kim Pingoud and modified to some extent by authors of Chapter 12 of Volume 4 of the 2006 Guidelines to implement the specific methods explained in Chapter 12.
This revised version serves the IPCC Inventory Software to allow users to easily upload HWP data
Thanks to FAOSTAT (Amanda Gordon and Francesco Tubiello), this Spreadsheet automatically provides FAOSTAT data on HWP for the country selected by the user.

5

6 User can overwrite FAOSTAT data with country specific data to upload those to the IPCC Inventory Software

7

8 Instructions for use

9 Notes

10 1 Sheets with red tabs are for calculation and shall not be edited by the user

11 2 Sheets with yellow tabs require data are entered by the user

12 3 The Spreadsheet upload data from the FAOSTAT database, so an internet connection is required

13 4 HWP data for a single country (as selected) can be uploaded in the sheet "Data"

14 5 HWP data for the entire World are contained in the sheet "World" and can be updated clicking cell B1 (Update)

15 6 HWP data contained in the sheet "World" are not uploaded into the IPCC Inventory Software. Those data are provided to the user for ease of comparison, where desired

16 6 Depending on the internet connection and resources available, the time needed to data upload from FAOSTAT may be longer than expected.

17 In such case it is recommended to minimize other computer processes.

18 Detailed instructions for use

19 1 Select the country name in cell A1 in the sheet "Data1". The spreadsheet will automatically upload data from the FAOSTAT database. The user can in alternative input data directly in the sheet overwriting the data provided through FAOSTAT; the structure and the categories of the sheet shall remain unchanged.

20 2 On the Parameters sheet:

21 a Select the country name in cell C4

22 b Check the half life data in cells D12 and D13 (Replace it with country-specific values where available)

23 c Check the conversion factors in cells D16 to D20 (Replace it with country-specific values where available)

24 d If the user intends to include data on "Other industrial Roundwood" click the box in cell D23

25 e In order to estimate consumption and use prior to 1961 select the Region in cell B30 and an associated growth factor will be shown in cell C30.

26 Alternatively, the user can select "national value" in cell B30 and enter the value in cell C32

27 3 Upload the country HWP data contained in this file to the IPCC Inventory Software, category 3.D.1, by clicking "Import HWP excel", selecting it, and clicking on "Import"

28 Additional Notes

29 1 In the Parameter sheet:

30 a Enter the last year for which HWP data are available (this limits the data shown in the "Results" sheet and its graphs)

31 b The bottom graph on the left shows the evolution of the "HWP variables" between 1990 and the last year selected

32 c The top graph on the right shows the growth in wood product use prior to 1962

33 d The bottom two graphs on the right show the results for four approaches for estimating the HWP contribution to the AFOLU total GHG emissions and removals

34

Instructions Parameters Results World Data data_download world_pivot area_pivot Calculation Control

Supporting Tools II

Excel-based tool:

- Data compilation of land representation and upload at once in the IPCC Inventory Software

Supporting Tools III

Guidebook for inventory compilers

- ✓ Sector by sector
- ✓ Simulating the use of the software for each inventory category, providing most relevant references to good practice from the 2006 IPCC Guidelines and its Wetlands Supplement

Supporting Tools IV

Add-ons for Land Representation:

- **based on wall-to-wall data collection and analysis (maps),**

Under development by FAO SEPAL Team

based on sampling data collection and analysis (inventories)

Under development through FAO-COLLECT EARTH customization

Support

TSU is supporting the IPCC Inventory Software

- ✓ **User Manual**
- ✓ **Help Desk E-mail** ipcc-software@iges.or.jp
- ✓ **Pool of voluntary testers, to support software development and use**
- ✓ **Annual meeting on feedbacks** from software users, including **issues where support is needed or a software improvements is envisaged**

May be subject to change after the IPCC enters into its 7th assessment cycle in mid-2023, depending on consideration by the Task Force Bureau and TFI Technical Support Unit for the 7th assessment cycle



Thank you

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

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INTERGOVERNMENTAL PANEL ON climate change

