# Update on IPCC Inventory Software

The 21st Workshop on GHG Inventories in Asia (WGIA21)

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Putrajaya, Malaysia

Baasansuren Jamsranjav

IPCC TFI TSU

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# IPCC Inventory Software

- **Implements** all tiers and approaches of the *2006 IPCC Guidelines* and its *Wetlands Supplement**
  - Some elements of the *2019 Refinement*** to facilitate interoperability with the UNFCCC reporting tool for electronic reporting of common reporting tables (CRTs)

- **Adaptable** to national circumstances (e.g., subnational level of estimation of emissions /removals; use of country-specific values where available; use multiple tiers across inventory/category)

- **Interoperability** with the UNFCCC reporting tool for CRT

**The latest version 2.92** released on 2 July 2024 and available at IPCC TFI website
https://www.ipcc-nggip.iges.or.jp/software/index.html
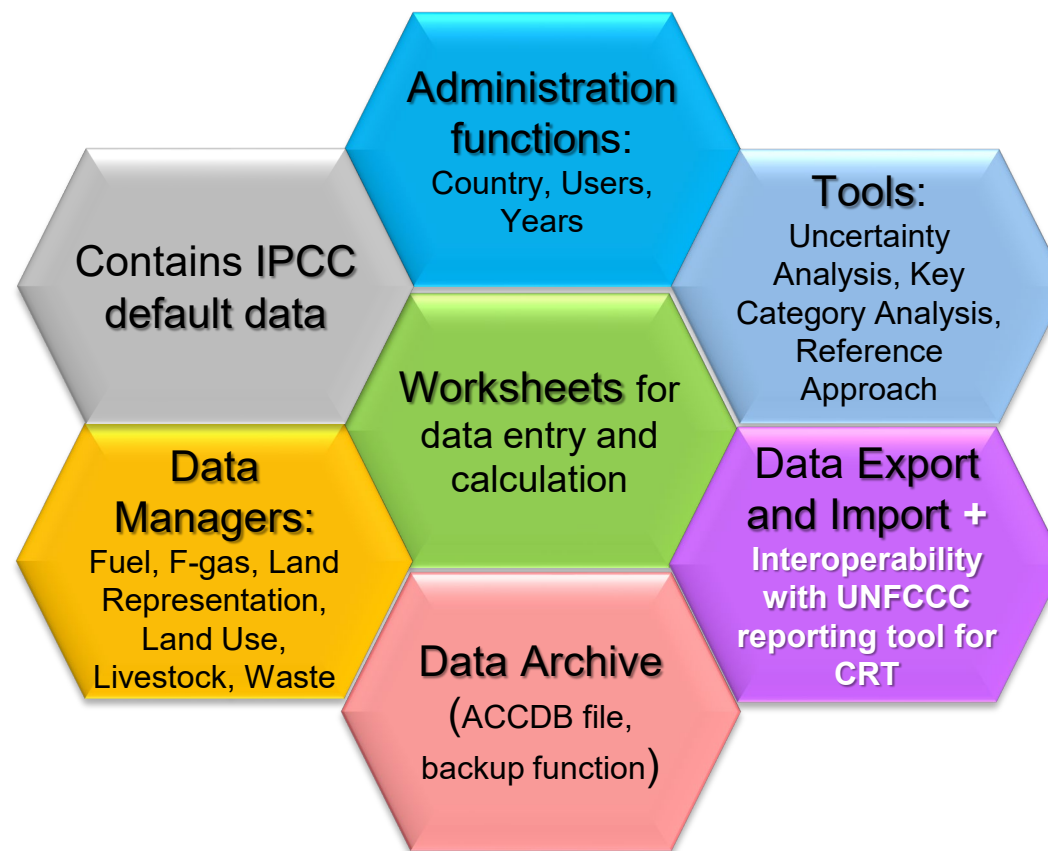
\* Indicated with lilac color
\*\* Indicated with magenta color

# IPCC Inventory Software: Key updates (version 2.92)

- IPPU sector-specific, e.g.:

  - F-gas data manager

  - Capacity to enter F-gas blends and estimate emissions of each F-gas component

  - Interoperability for the remaining categories (F-gas) including mapping from IPCC Inventory Software calculation worksheets to corresponding cells of CRT

- Other (e.g., JSON file format, some category-level fixes, etc.)

# Software functions

# Working area



Main menu

Worksheets

Hierarchical list of categories

Enter uncertainties of activity data (AD) and emission factors (EFs)

Parameters of worksheets can be edited across existing inventory years

# Worksheet

# Data managers

- Organize and manage in one place relevant data used for multiple worksheets/categories
    - Prepopulated with default data but also allows to enter user-specific data/information
- Help ensure consistency of data used in estimation of emissions/removals across all relevant categories
    - Data entered are transferred to relevant worksheets

# Guidebooks

- Sector-level guidebooks provide step by step instructions on data entry and calculation of emissions/removals including flowcharts illustrating the workflow as well as explanations on equations and worksheets

  - It does not replace guidance provided in the IPCC Methodology Reports

# Interoperability with UNFCCC reporting tool for CRT

- Decision 5/CMA.3 requests the UNFCCC secretariat to facilitate interoperability with the IPCC Inventory Software and invites the IPCC to engage in this work.

- Since its version 2.861 the IPCC Inventory Software is capable to prepare a JSON data exchange file for export of data from the IPCC Inventory Software into the UNFCCC reporting tool for CRT

- IPCC Inventory Software: CRT Export Quick Start Guide available at IPCC TFI website (https://www.ipcc-nggip.iges.or.jp/software/index.html) describes functionalities in IPCC Inventory Software to prepare data for generation of JSON file

- Preparing a JSON file required a cell-by-cell mapping* to document where each of AD and GHG estimates contained in each worksheet of the IPCC Inventory Software reside in the CRT

  - Mapping tables (Excel files) have been developed to enhance transparency of the relationship between the categories in the IPCC Inventory Software and the UNFCCC reporting tool for CRT、 and can be found in sectoral Guidebooks

*See the Guidebook https://www.ipcc-nggip.iges.or.jp/software/index.html

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Interoperability with UNFCCC reporting tool for CRT

# Interoperability with UNFCCC reporting tool for CRT

- The mapping between the IPCC Inventory Software and the CRT are visualized in the IPCC Inventory Software i.e., CRT visualization tables have been prepared in the IPCC Inventory Software to enhance transparency and demonstrate how the data entered in the IPCC Inventory Software are mapped to the UNFCCC CRT.

- Once data are entered and emissions/removals are calculated in the IPCC Inventory Software, users wishing to use these data to facilitate reporting to the UNFCCC can generate a JSON file in the IPCC Inventory Software.

# Interoperability with UNFCCC reporting tool for CRT



Review visualized CRTs, finalize (e.g., notation keys, information on methods and EFs) and generate JSON file for export

Orange cells contain CRT category names and data aggregations

White cells for AD and emissions show data entered in underlying worksheets of the IPCC Inventory Software

# Interoperability with UNFCCC reporting tool for CRT

**Step 1**
- Calculate GHG emissions/removals in IPCC Inventory Software

**Step 2**
- Access CRT interface under Export/Import menu of IPCC Inventory Software

**Step 3**
- Create data set for CRTs, review and finalize visualized CRTs

**Step 4**
- Generate JSON file for export of data from IPCC Inventory Software into UNFCCC reporting tool for CRT

**Step 5**
- Users conduct QC checks in UNFCCC reporting tool for CRT

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# Support to users

- Organizing expert meetings annually

    – IPCC Expert Meeting to collect Software and EFDB users' feedback, 1-3 May 2023, Bangkok, Thailand

- User manual https://www.ipcc-nggip.iges.or.jp/software/index.html

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

    – Energy sector
    – Livestock categories (3.A)
    – Land representation
    – UNFCCC CRT Export Quick Start Guide
    – Other sectoral guidebooks are under development

- Help desk ipcc-software@iges.or.jp

# Ongoing and planned work

- Interoperability with UNFCCC reporting tool for CRT (Testing)

- Extending capacity for Uncertainty Analysis and Key Category Analysis

- Export/Import of time series data

- Completing publication of guidebooks

- Step-by-step instructions (ppt/video format) to implement IPCC default methods

- **Workshop on the IPCC Inventory Software, September 2024, Baku, Republic of Azerbaijan**

# Thank you

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