Task Force on National Greenhouse Gas Inventories

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IPCC Task Force National GHG inventories

ipcc
INTERGOVERNMENTAL PANEL ON climate change

WMO

UN environment programme

IPCC Structure

IPCC Secretariat

IPCC Plenary

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Working Group I

The Physical **Science Basis**

Technical Support Unit

Working Group II

Climate Change Impacts, **Adaptation** and **Vulnerability**

Technical Support Unit

Working Group III

Mitigation of Climate Change

Technical Support Unit

Task Force

on National Greenhouse Gas **Inventories**

Technical Support Unit

Authors, Contributors, Reviewers

UNFCCC 1992, art 4.1.a:

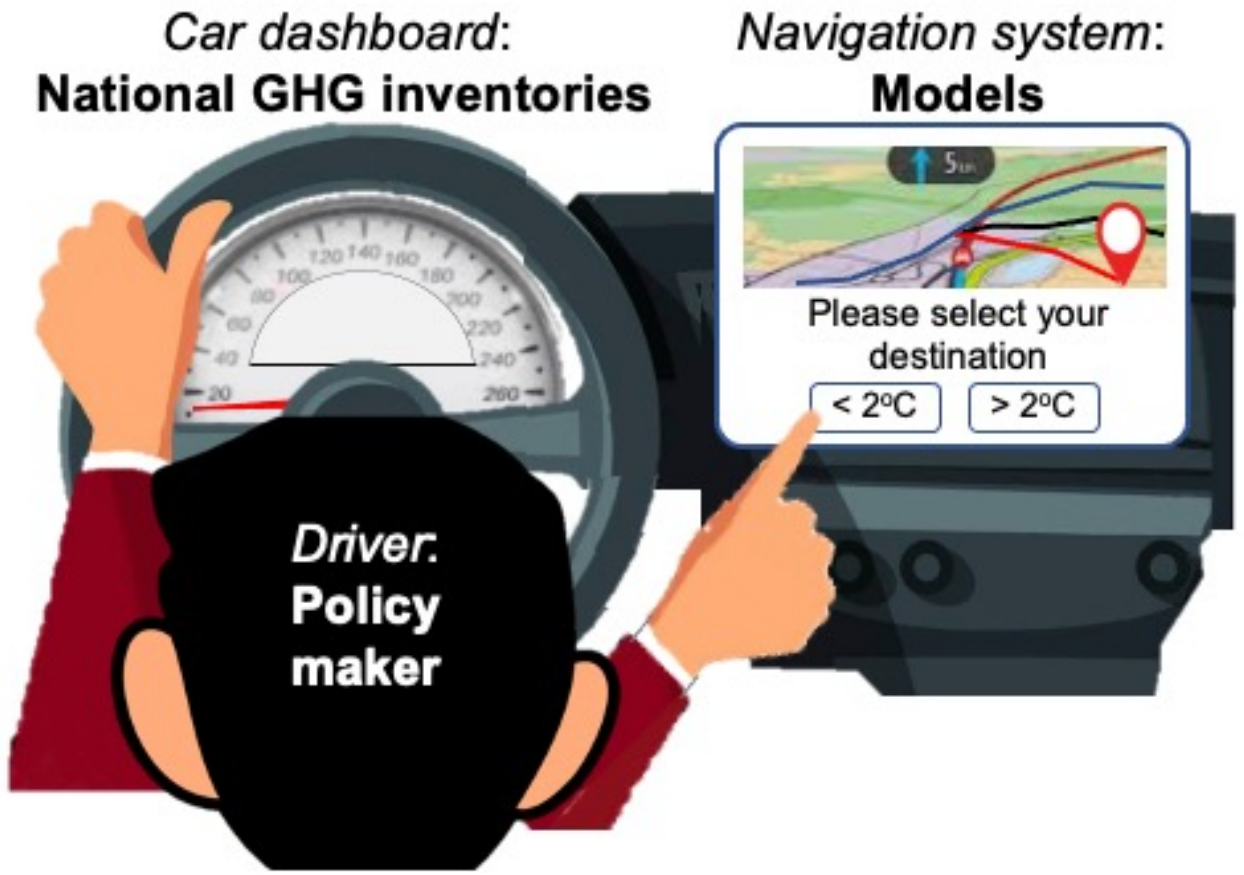
"Parties shall develop, periodically update, publish and make available … national inventories of ***anthropogenic emissions and removals*** *of all GHG not controlled by the Montreal Protocol, using* ***comparable methodologies*** *to be agreed upon by the Conference of the Parties*

Task Force on National GHG Inventories (TFI)

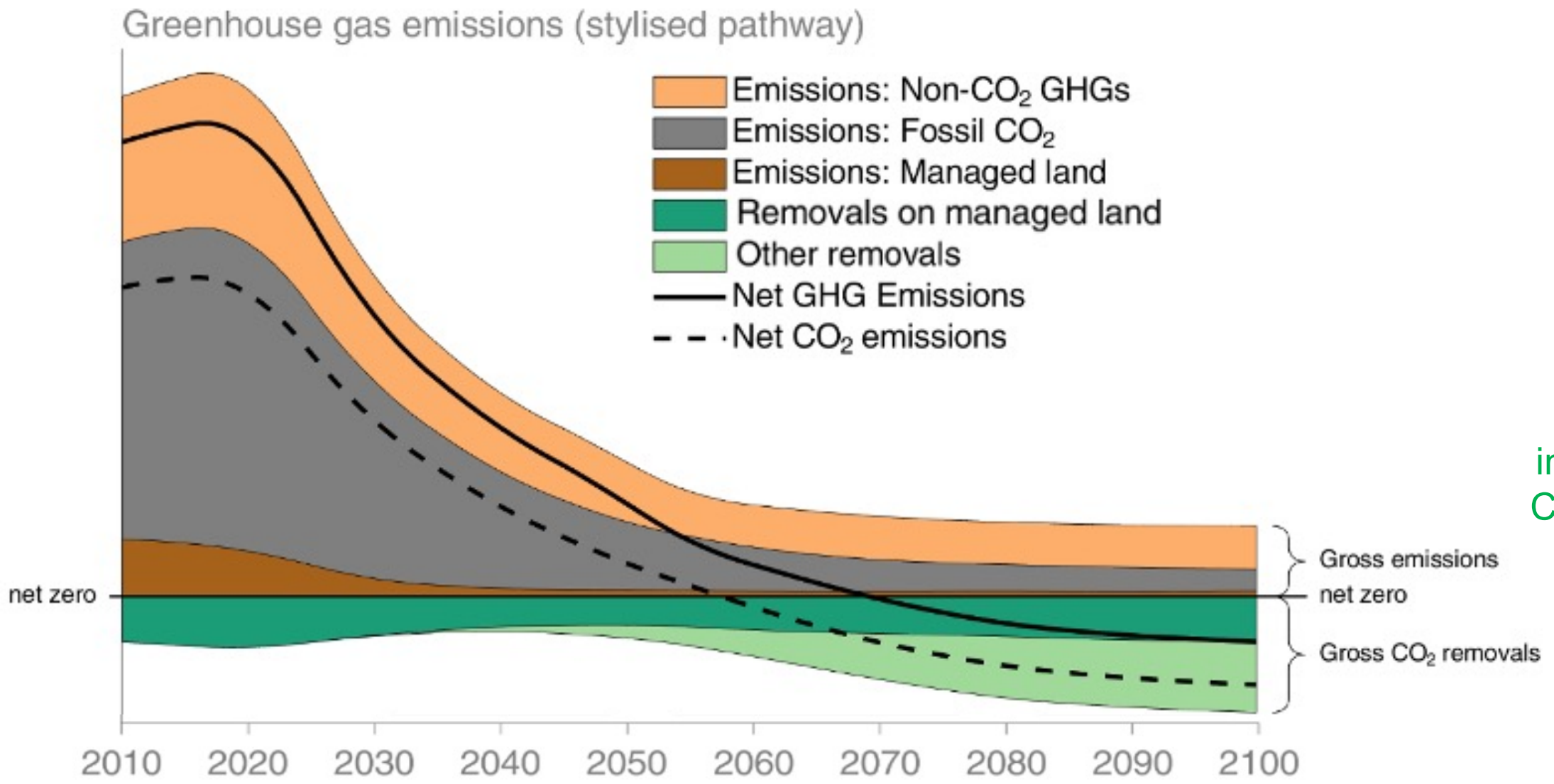
The objectives of the TFI are:

- Develop and refine an internationally-agreed **methodologies** and **software** for the calculation and reporting of national GHG emissions and removals;
- Encourage the widespread use of this methodology by countries participating in the IPCC and by signatories of the UNFCCC

The work is undertaken at the request of IPCC member governments and is managed by two elected Co-Chairs and an elected Bureau with twelve members supported by a **Technical Support Unit** based in Japan.



The policy focus is shifting from pledges to implementation



The relative importance of CO_2 removals will increase with time

Methodology Reports

Why produce these Methodology Report?

- Globally applicable standardized methodologies and emission factors ensures consistency and comparability

Process for producing the methodology reports

- *IPCC Expert Meetings* – preparing supporting material for the scoping meeting.
- *Scoping meeting* – produce a proposal for the scope and outline of the methodology report.
- Approval of outline by the IPCC.
- Development of the guidance with regular *Lead Author meetings*.
- Approval of the methodology report by the IPCC Panel.

The IPCC Guidelines (IPCC GL)

The **2006 IPCC GL** are currently the mandatory methodologies for all Parties to report their NGHGIs under the UNFCCC and its Paris Agreement. A Refinement of the 2006 IPCC GL was produced in 2019, and might be used on a voluntary basis.

The IPCC GL allow inventory compilers to produce GHG estimates consistent with the **TACCC reporting principles** under the UNFCCC (Transparency, Accuracy, Comparability, Consistency, Completeness).

IPCC methodologies aim to guide the development of GHG estimations based on a common understanding and to ensure that inventories are comparable among countries, do not contain double counting or omissions, and that the time series reflect actual changes in emissions.

Generally, the definition of ***anthropogenic emissions*** is clear for most sectors. However, anthropogenic emissions and removals associated with *land use* are far more complex, since they are often difficult to distinguish from those of natural origin.

IPCC Guidelines: the basics

IPCC Guidelines (GL) are aimed at allowing the preparation of a consistent time series of complete and accurate estimates of GHG emissions and removals associated with a human activity. The IPCC GL is designed as a ***good practice***, i.e. *a set of procedures intended to ensure that GHG inventories are accurate in the sense that they are systematically neither over-nor underestimates so far as can be judged, and that they are precise so far as practicable*.

Good practice is provided for **3 tier levels** of increasing methodological complexity and presumed accuracy:

Tier 1 is the basic, default method designed to allow national inventory compilers to make estimates even with limited information. The tier 1 method requires the identification of the data of activity (AD) and the assignment of a rate of emission factor (EF) per unit of activity: Emissions = AD*EF. The IPCC provides default values for each EF and parameter that the method requires.

Tier 2 is of intermediate complexity in terms of method and data requirement. It is good practice to apply Tier 2 to key source/sink categories (i.e. with a significant contribution to the national total). A tier 2 method can be the default method with country specific data.

Tier 3 is generally the most demanding in terms of complexity and data requirements. It has the highest spatial and temporal resolution and can be characterised either measurements or modelling.

Methodology Reports in AR7

For the **IPCC's 7th Assessment cycle** the TFI has been tasked with the production of two new Methodology Reports:

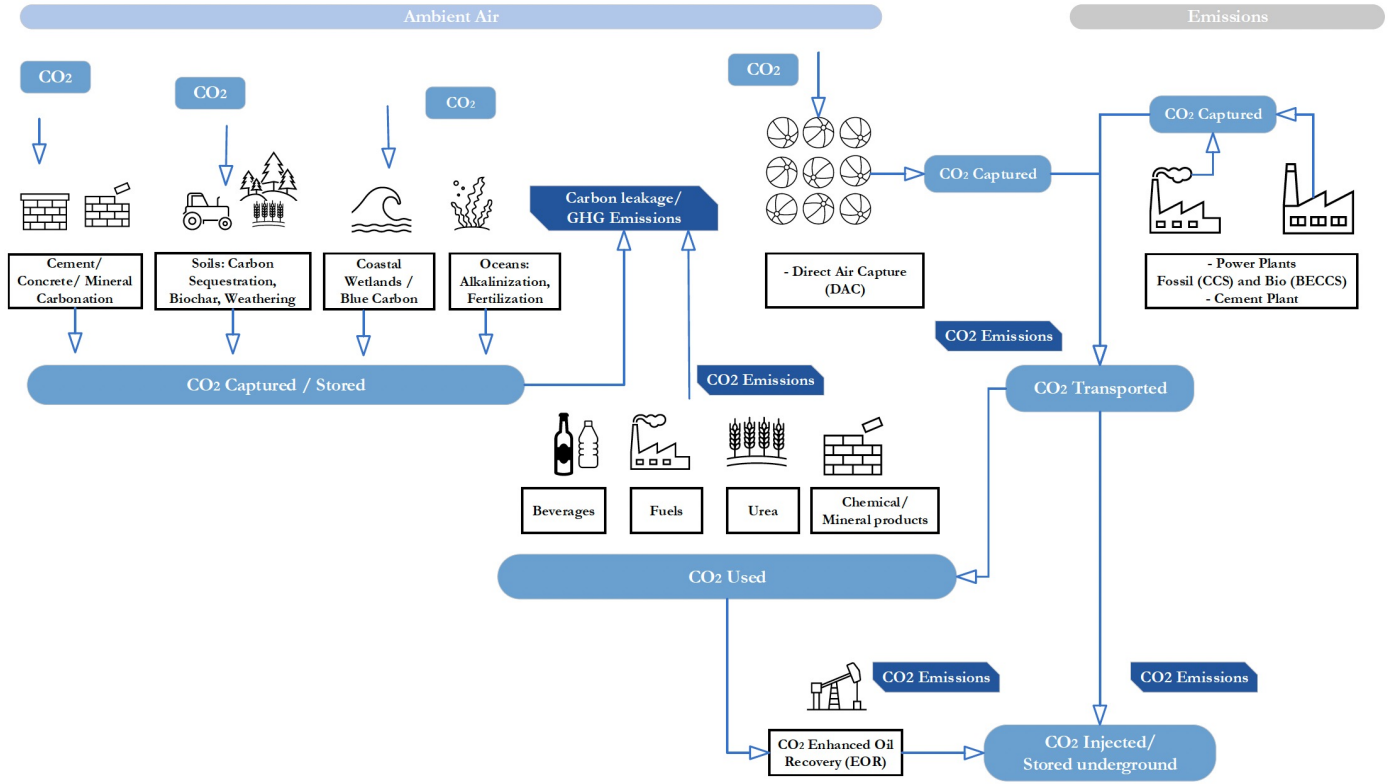
- Emissions of **short-lived climate forcers (SLCF)**: Atmospheric compounds that despite their short lifetime, compared to long-lived GHGs, have a significant impact on climate change.
- Net emissions from **carbon dioxide removal (CDR) technologies and carbon capture utilization and storage (CCUS)** activities:
  - **CDR**: Anthropogenic activities removing CO2 from the atmosphere and durably storing it in geological, terrestrial, or ocean reservoirs, or in products. It excludes natural CO2 uptake not directly caused by human activities.

    The deployment of CDR to counterbalance hard-to-abate residual emissions is unavoidable if net zero CO2 or GHG emissions are to be achieved
  - **CCU/CCUS**: a process in which CO2 is captured from industrial and energy-related sources and then used in a product or stored.

Relevant expertise for the Scoping meeting CDR/CCUS:

- Direct air carbon dioxide capture and storage (DACCS)
- Bioenergy carbon capture and storage
- Carbon dioxide capture, utilisation and storage
- Concrete carbonation
- Enhanced weathering
- Ocean alkalinity enhancement
- Blue carbon management in coastal wetlands
- Soil carbon sequestration in crop and grasslands
- Peatland and coastal wetland restoration
- Biochar
- Ocean fertilization
- Wastewater treatment/ wastewater alkalinity
- Forestry
- Other CDR technologies not specified above

Figure 1 Conceptual pathways of carbon dioxide removals, generation, capture and storage



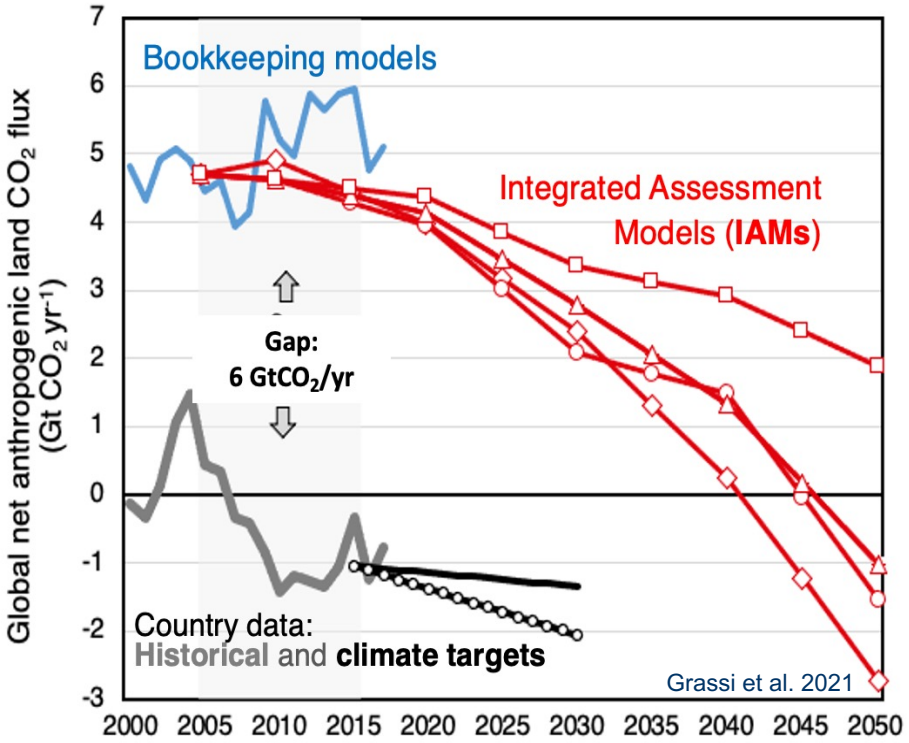
Tentative production timelines for the two Methodology Reports

	Short Lived Climate Forcers	Carbon Dioxide Removal
1st Q 2024	**Scoping Meeting**	
2nd Q 2024		Expert Meeting
3rd Q 2024	IPCC-61 Call for Nomination of Authors and Review Editors Establishment of the Steering Committee Selection of Coordinating Lead Authors, Lead Authors and Review Editors	**Scoping Meeting**
4th Q 2024		IPCC-62 Call for Nomination of Authors and Review Editors Establishment of the Steering Committee Selection of Coordinating Lead Authors, Lead Authors and Review Editors
1st half 2025	**1st Lead Author Meeting**	**1st Lead Author Meeting**
2nd half 2025	**2nd Lead Author Meeting**	**2nd Lead Author Meeting**
	Expert Review / Science Meeting	Expert Review / Science Meeting
1st half 2026	**3rd Lead Author Meeting**	**3rd Lead Author Meeting**
2nd half 2026	Literature cut-off date Government & Expert Review	Literature cut-off date Government & Expert Review
1st half 2027	**4th Lead Author Meeting** Government Review	**4th Lead Author Meeting** Government Review
2027	Adoption/acceptance by IPCC	Adoption/acceptance by IPCC

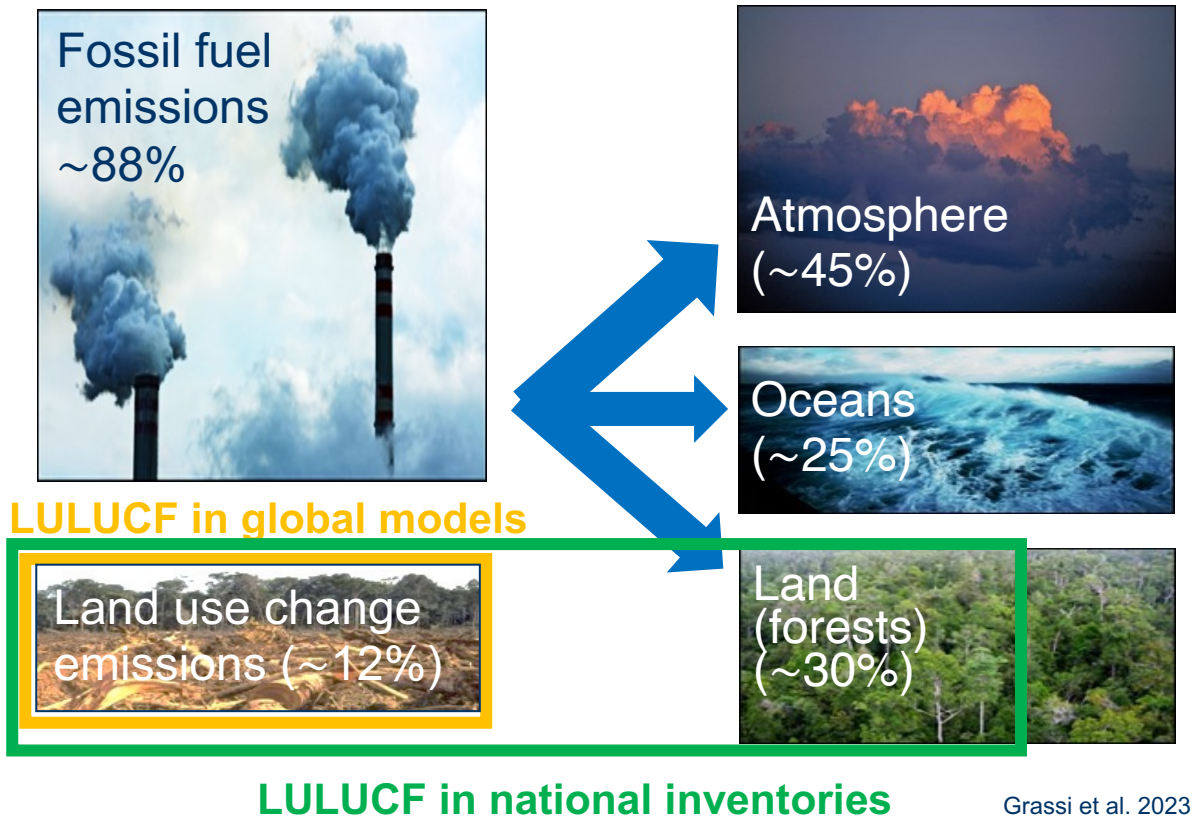
Other ongoing TFI activities

- **Management of the IPCC software**, following the recent update
- Management of the **Emission Factor Database**:
  - Open to new data proposals
  - Regularly evolves with the addition of new data
- **Upcoming support activities**:
  - Training programme on GHG inventories for national experts from developing countries
  - IPCC Software demonstration workshop
- **IPCC Expert Meetings**:
  - 1-3 July (Vienna), CDR and CCUS
  - 9-11 July (Ispra), Reconciling land use emissions

The land emissions gap between global models and GHG inventories

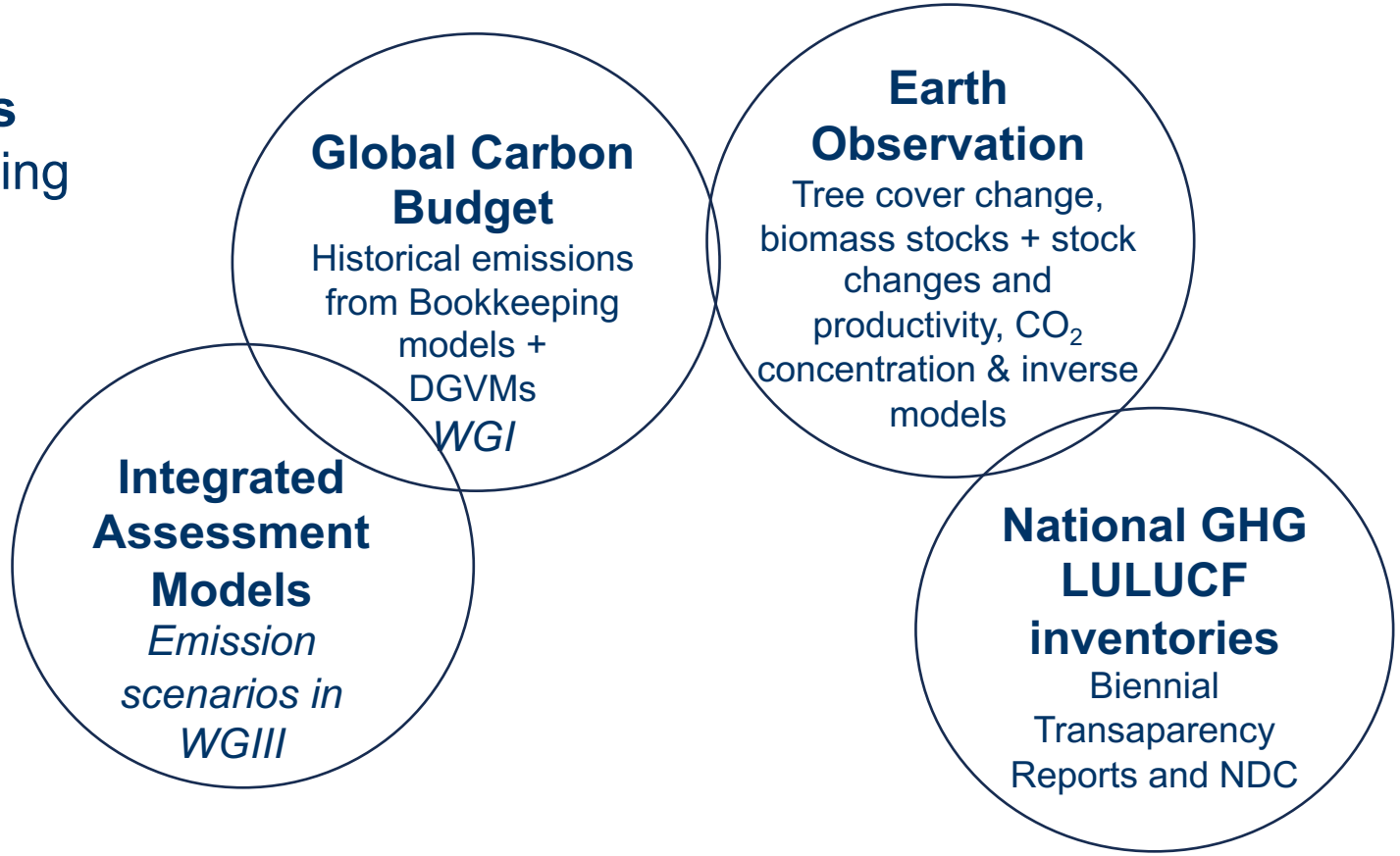


Different approaches to define 'anthropogenic flux':



Relevant implications for assessing collective climate progress, the remaining carbon budget and net zero, and the confidence on land use estimates under the Paris Agreement.

The **IPCC expert meeting on Reconciling land use emissions** will gather experts from the following communities:



Aims:

- Develop a **common understanding of the land emissions gap**
- Set the basis for **greater collaboration** between communities
- Outline concrete **steps forward to ensure a greater comparability** between future IPCC products and national GHG data

If we don’t measure,
we don’t manage