

“IPCC Guidelines, NDCs and their relationships with the SEEA”

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Overview

1. The objective of the UNFCCC
2. IPCC Guidelines for terrestrial carbon accounting (NDCs)
3. Stumbling blocks and opportunities

The objective of the UNFCCC

- The ultimate objective of the Convention is to **stabilize greenhouse gas concentrations** "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system."
 - CO₂ is the most important of greenhouse gases
 - The concentration of CO₂ in the atmosphere is a **stock**.

Objectives (continued)

Stabilization of CO₂ concentration requires...

- **reduced emissions of carbon**
 - from fossil fuels and land use change (e.g., deforestation)
- **enhanced sinks** (i.e., carbon dioxide removals or negative emissions)
 - by increased storage of carbon in forests and soils (e.g., reforestation, afforestation, letting forests grow)

Why were the **IPCC guidelines** for GHG accounting developed for **net emissions due to human activities**?

- “*Net emissions*” are what the atmosphere “sees”.
 - Important for the global carbon budget;
 - However, **gross** emissions and removals are important for identifying potential removals.

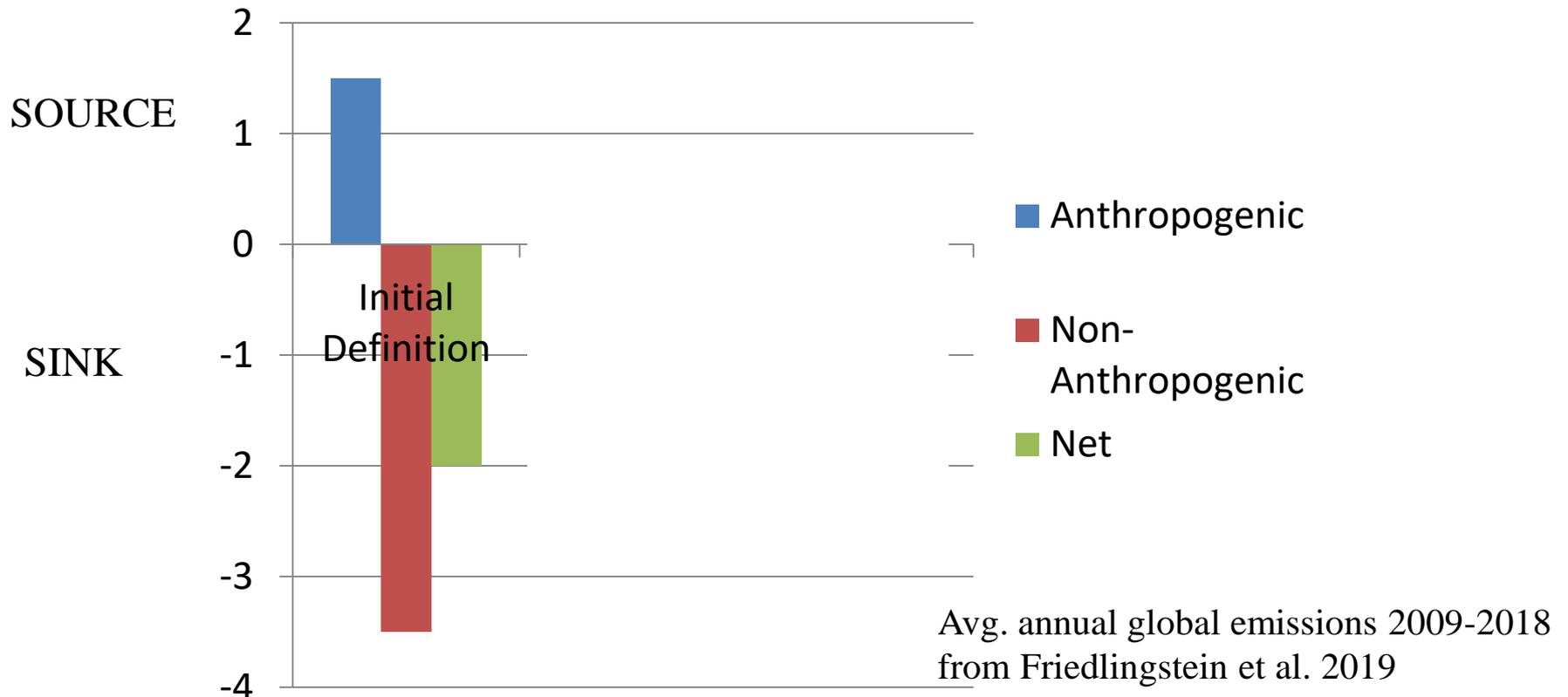
Why were the **IPCC guidelines** for GHG accounting developed for net *emissions due to human activities*?

- “Emissions due to *human activities*”
- There is another driver of emissions.

Carbon emissions from terrestrial ecosystems result from *two processes*: human activities (management) and environmental change.

- Why count only “anthropogenic” emissions?
 - It makes sense to reward and penalize countries for those emissions and removals they can **manage**, as opposed to those driven by environmental change.
 - Science-based estimates of terrestrial carbon emissions have long made the **distinction** between **management** (direct anthropogenic) effects and **environmental** effects (e.g., CO₂, climate change, N deposition, etc.).

Two types of terrestrial emissions



- ‘Anthropogenic’ is direct management, human activities (e.g., deforestation)
- ‘Non-anthropogenic’ is driven by environmental changes (e.g., CO₂, climate, etc.)
- The **net** sum of these two types is what the atmosphere “sees”.

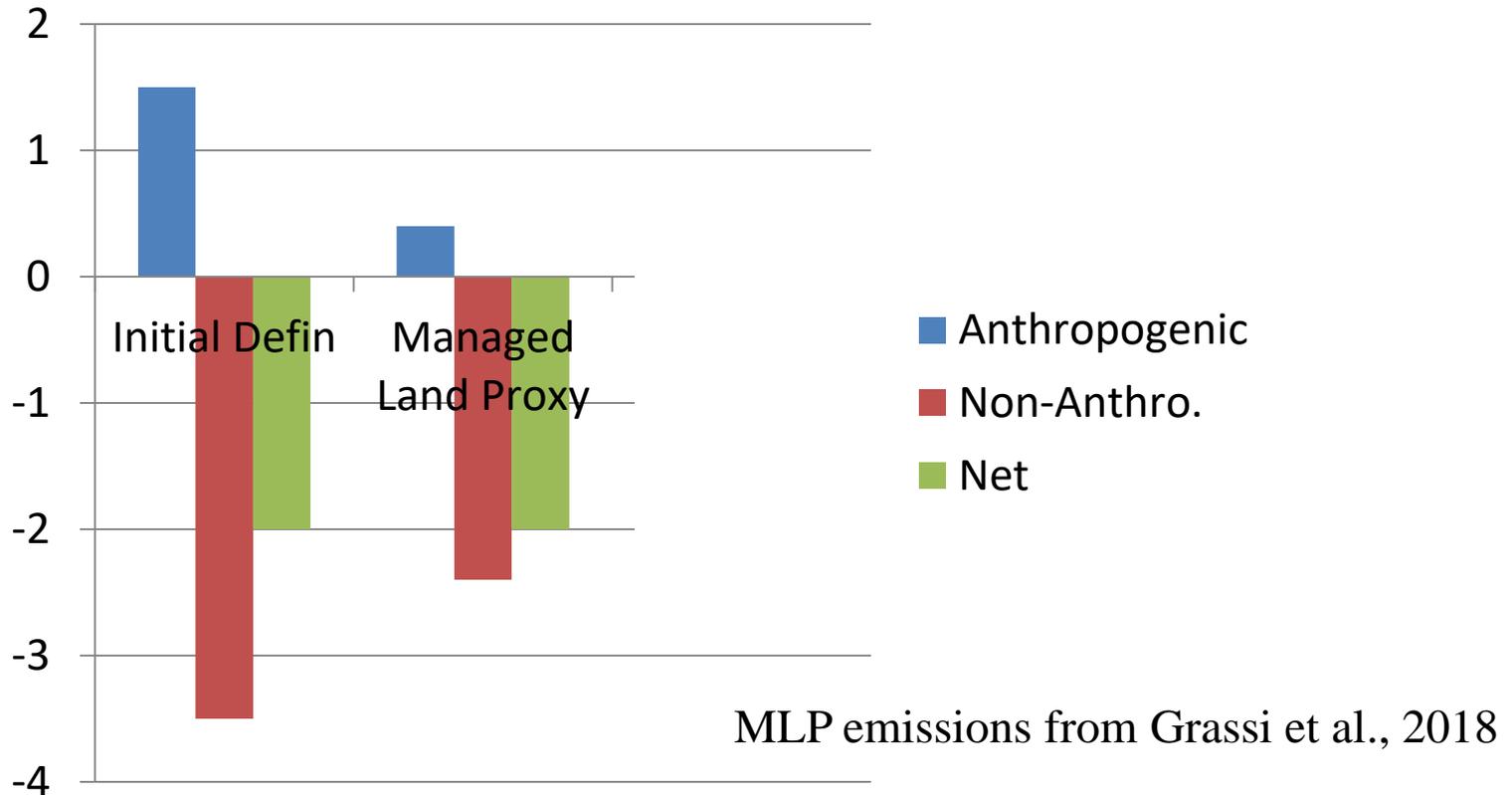
Counting Anthropogenic Emissions

- The atmosphere ‘sees’ both anthropogenic and non-anthropogenic emissions.
- A consequence of counting only anthropogenic emissions is that the largest net removals are not counted.
- Further, there’s not a good link between counted emissions and total emissions.

An Alternative Definition

- Separating the effects of management from the effects of environmental change is difficult.
 - Example: a growing forest: regrowth vs. enhanced growth
- The **Managed Land Proxy** (MLP) was proposed (IPCC, around 2010).
 - Defined by land area rather than by the driver of change
 - The MLP is not perfect because **the emissions from managed lands include emissions due to environmental change.**
 - Countries define “MLP” as it suits them.
 - It’s not clear how many countries are using the MLP.

Managed Land Proxy



- Lower ‘anthropogenic’ emissions...
- ...because the emissions from managed lands include the effects of environmental change
- Net sum is the same.

Stumbling blocks and opportunities

- Double counting of emissions reductions
 - For example, country X buys and claims the carbon accumulation in country Y's forests, and country Y **also** claims it.
- Leakage
- Additionality
- Permanence
- **“Offsetting”**: a dirty word for some: separating the accounts for biocarbon and geocarbon would help eliminate offsetting.
- **Biodiversity and ecosystem condition** (integrity): variables in addition to carbon
- **What's “anthropogenic”?**

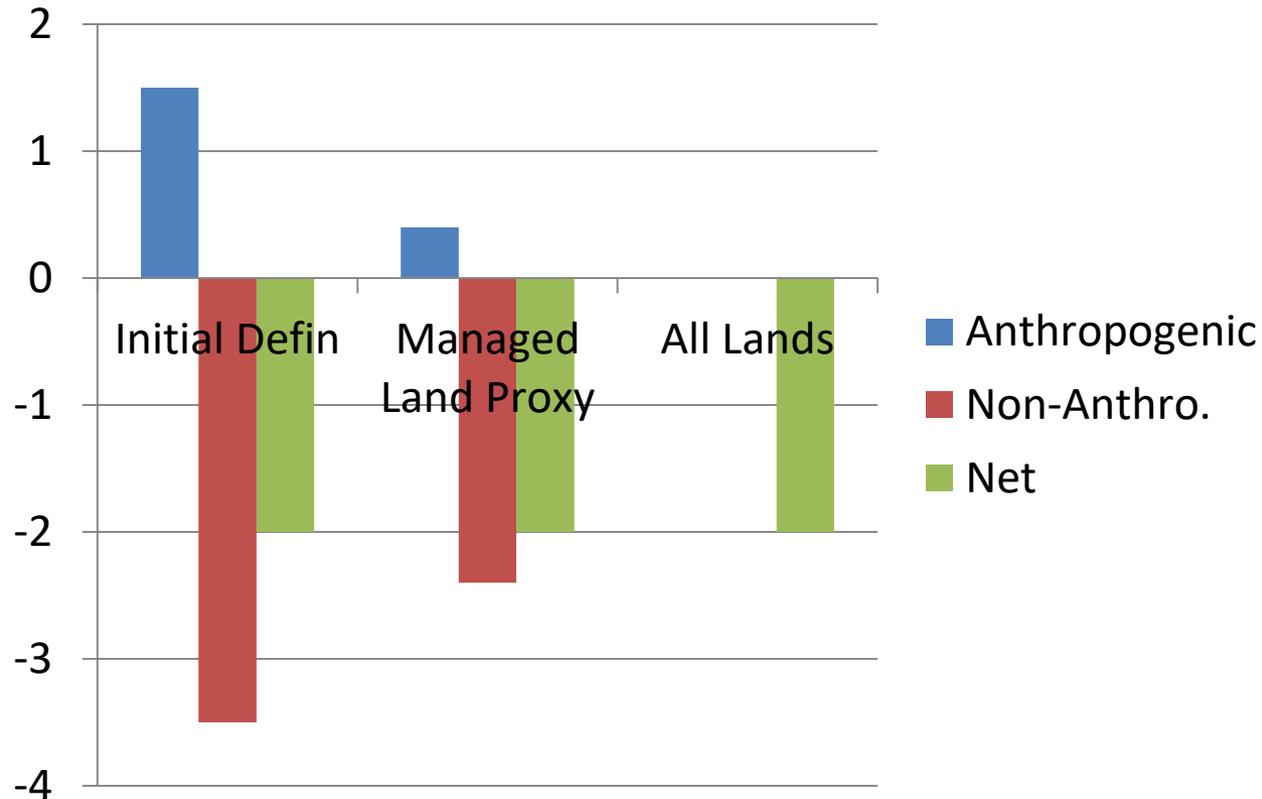
Biodiversity and ecosystem condition

- UNFCCC CoP 25 (2019) decision provided an opportunity for measuring and recording carbon, biodiversity and other characteristics of ecosystem condition in an integrated manner, which is what **ecosystem accounting** can achieve
- For example...
 - Measures of ecosystem integrity might be considered as **co-benefits** and trade-offs.
 - Carbon decisions might be **weighted** on the basis of ecosystem condition/integrity.

What is “anthropogenic”?

- Better guidelines for the identification of managed lands?
- Are mitigation benefits of carbon storage being foregone because the activity **does not fit** within the current guidelines?
 - For example, primary (unmanaged) forests are accumulating carbon but are not managed (by definition). Thus their carbon accumulation isn’t credited.
- Declare all lands as managed?

Count Emissions from **All Lands**



- Net sum is always the same: what the atmosphere “sees”

Declare **all lands** as managed?

Consequences:

- Much simpler (no need to separate anthropogenic)
- Aligns with “what the atmosphere sees”.
- Aligns with “comprehensive” criteria applied to statistical standards
- Puts incentives in the right place: manage carbon on all lands, not just “anthropogenic carbon”.

Conclusions

- There are opportunities for integrating the IPCC Guidelines with Ecosystem Accounting:
 - Separate biocarbon from geocarbon accounting
 - Account for ecosystem condition (more than carbon)
 - Count all lands, all carbon
 - Re-assess the decision to count only “anthropogenic” emissions and removals
 - Other

Thank you