

An illustration of a hand in an orange sleeve holding a red magnifying glass over a globe. The globe shows a wetland landscape with a river, a boat, and green fields. The background is a light blue gradient with a shadow of the hand and magnifying glass.

Wetland monitoring for climate

Principles, new areas and recommendations

Maria Nuutinen, Forestry Officer

Forestry Division's Ramsar Convention on Wetlands focal point, FAO

GFOI Wetland R&D exchange

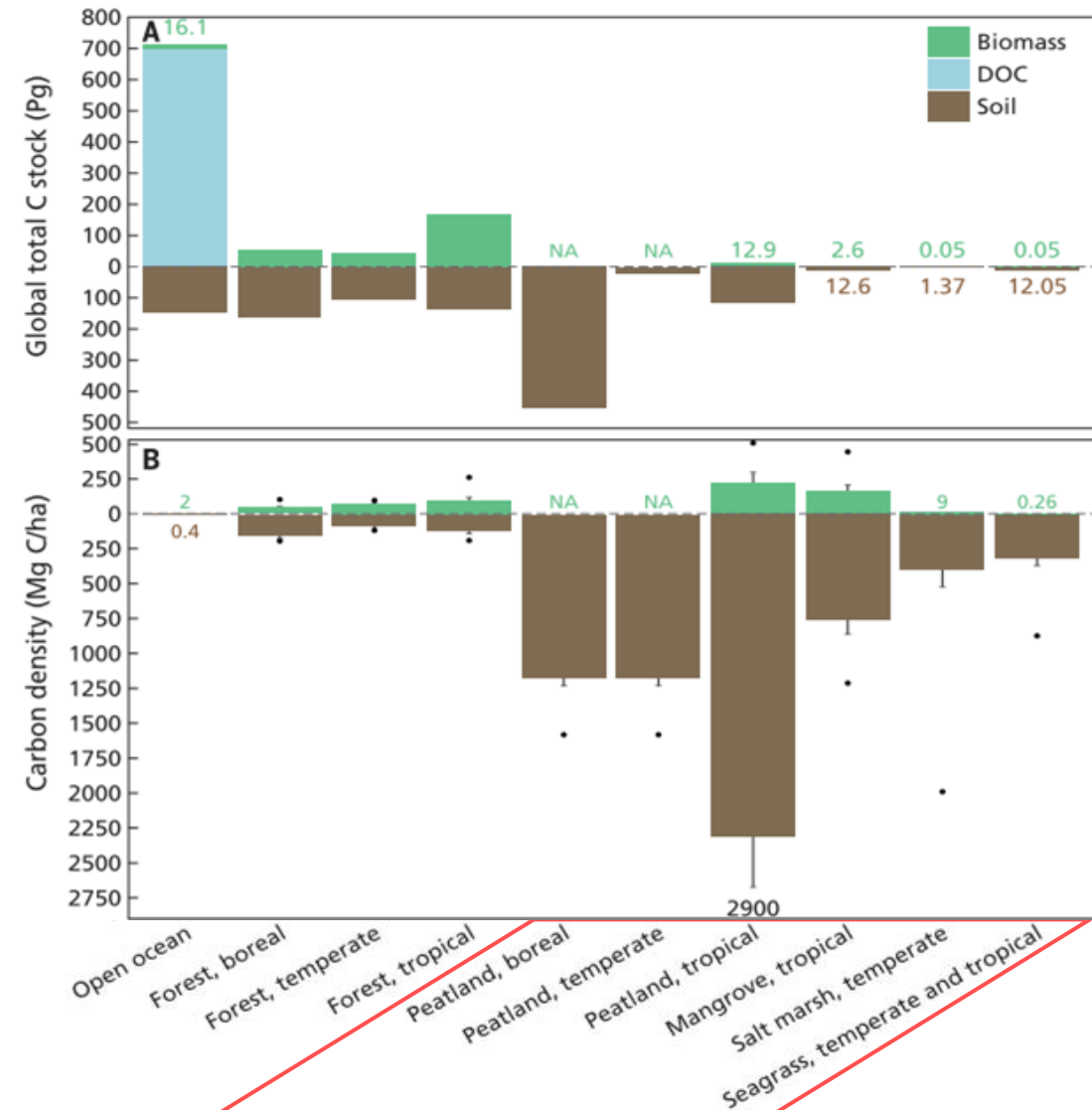
18 February 2025

Carbon in the different wetland types

- Wetlands contain large stocks of carbon in their biomass and soil
- Peatlands are the most carbon-dense ecosystem, i.e. carbon stocks per unit area
- Annual carbon density is highest in (tropical) peatlands, salt marshes and mangroves

Figure: Overview of the world's major carbon-storing ecosystems' carbon density and stock

Legend: DOC = Dissolved Organic Carbon



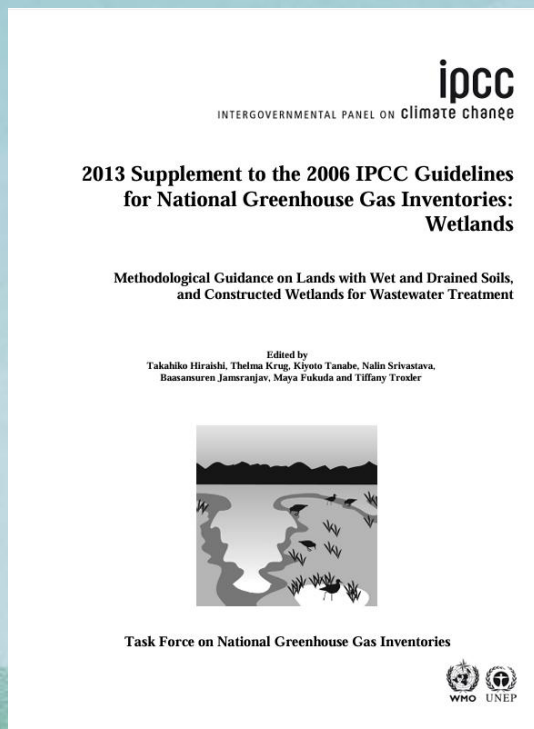
Wetland adaptation targets: examples

**Policies,
measures,
actions
mentioned by
Parties NDCs (by
November 2024)**

1. Acknowledging coastal wetlands' role in building resilience, **protective services** for communities and supporting livelihoods,
2. Development of technical **guidelines** for coastal ecosystems under the **national adaptation planning process**.
3. **Sustainable management** of coastal ecosystems, wetlands, peatlands, mangroves, seagrasses, saltmarshes and reefs,
4. **Increasing buffer zones** around wetlands, peat swamps and mangroves

Wetland monitoring for climate: needs, requirements and advances

- Building on the IPCC Wetlands Supplement
- Adaptation and mitigation: NDCs, NAPs, biennial transparency reports (BTRs), Global Goal on Adaptation & its target on climate impacts
- Integration with disaster risk reduction, early warning and action





Peatlands

Key components of
peatland
monitoring

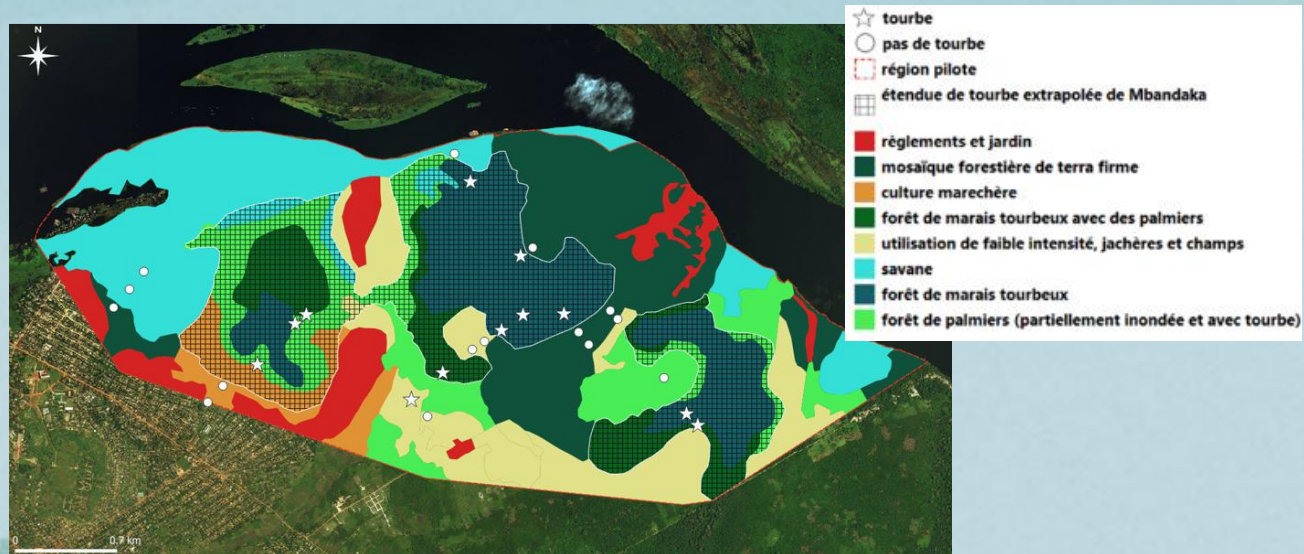
3. Emission factors

2. Activity data

1. Peatland inventories:
area & degradation
status or condition

Peatland mapping: importance of field inventories

- Low-cost field methods available
- Training essential



Above: Participants of the field misión. Mbandaka, June 2021.

Left: High resolution peatland map of the botanical garden, Mbandaka.

Peatlands: Refining greenhouse gas emission factors

Global review of data deficient regions since the 2013 IPCC Wetlands Supplement to improve GHG accounting and reporting:

- 571 new studies identified
- Additional 7 sub-categories for forested peatlands
- Specific emission factors for smallholder and industrial oil palm production





Mangroves

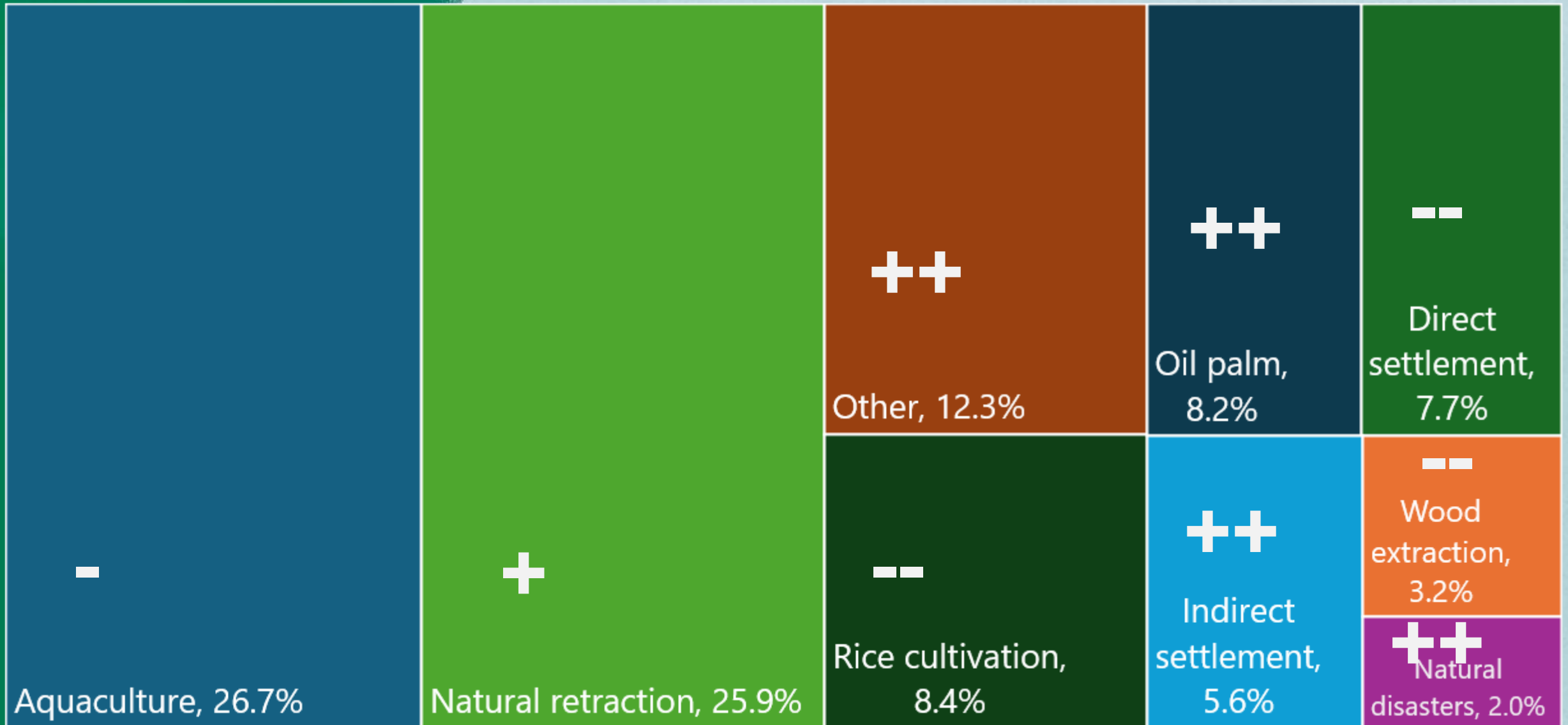


Food and Agriculture Organization
of the United Nations

FAO inventory on world's mangroves 2000-2020

Kenichi Shono
Forestry Division, FAO

Drivers of mangrove loss 2000-2020



Take-home messages

- Wetland monitoring requires mixing different types of expertise
- Working across sectors and mandates
 - Peatlands: cropping, grazing, forestry, plantations, water extracting companies, Ramsar focal points
- Update of the Wetlands Supplement & making it more accessible would benefit wetland monitoring
- NDC & NAP integration

Peatlands - guidance
for climate change mitigation
through conservation, rehabilitation
and sustainable use





Thank you!

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FAO & Partners: materials to support independent use of monitoring tools

<https://trello.com/b/1RriK3jW/fao-peatland-monitoring-ghg-estimation>

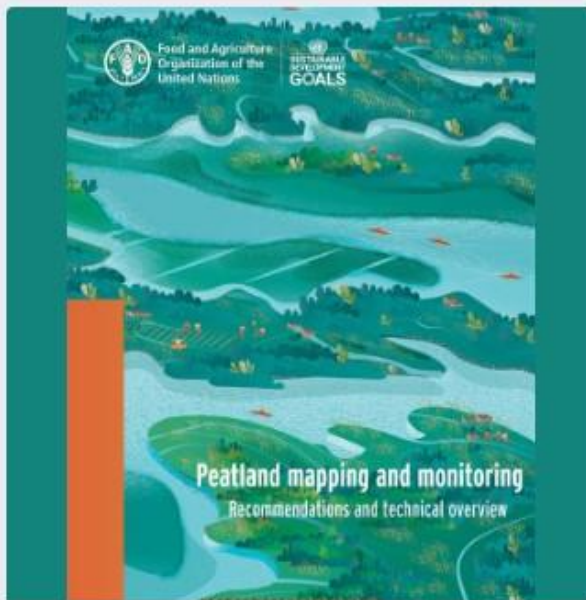
FAO Peatland monitoring & GHG estimation

Public



Background

Welcome to the board to present the materials and tools developed by FAO for peatland monitoring and GHG estimation



SEPAL tools for peatland monitoring



Practical guidance for peatland monitoring in Indonesia (EN & ID)



Peat-GHG: GHG calculator for peatland management

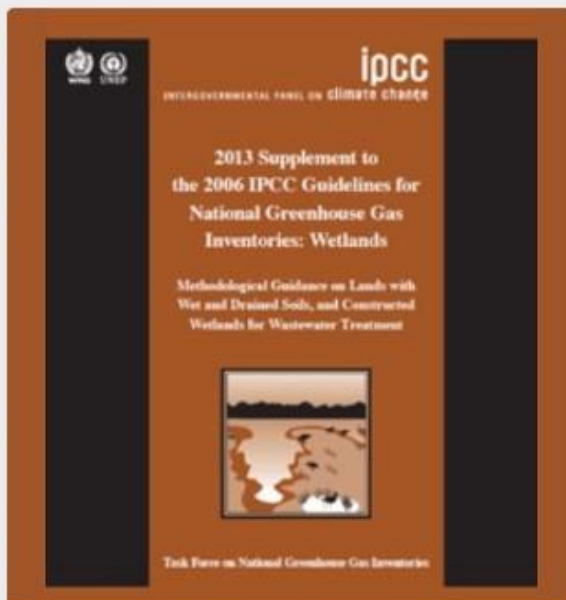


Peat-GHG tool (EN, ID)



Further resources

Peatland monitoring Playlist



2013 Supplement to the 2006 IPCC