



Food and Agriculture Organization  
of the United Nations



Global Forest  
Observations Initiative

Plenary  
9-11 May 2023

# Wet linkages: Global Peatlands Initiative and mangroves

## Climate action in forested high-carbon ecosystems

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Mangrove roots in Kenya FAO/Eva Ntara

A peatland in central Republic of the Congo, FAO/Maria Nuutinen



# Peatlands, mangroves and carbon

## Differences

- Mangroves' SOC in motion because of tidal influence
- Peatlands' soil organic carbon (SOC): more stable over time
  - 178 countries host peatlands.
  - Many tropical lowland peatlands are naturally forested

## Similarities

- **Vulnerable to changes in climate and land-use change**
  - **Potential large emitters**
  - **Irrecoverable carbon**
  - **Similar soil sampling methods**
  - **IPCC Wetlands Supplement 2013**
    - **Need to understand better:**
      - Mapping, monitoring, accounting

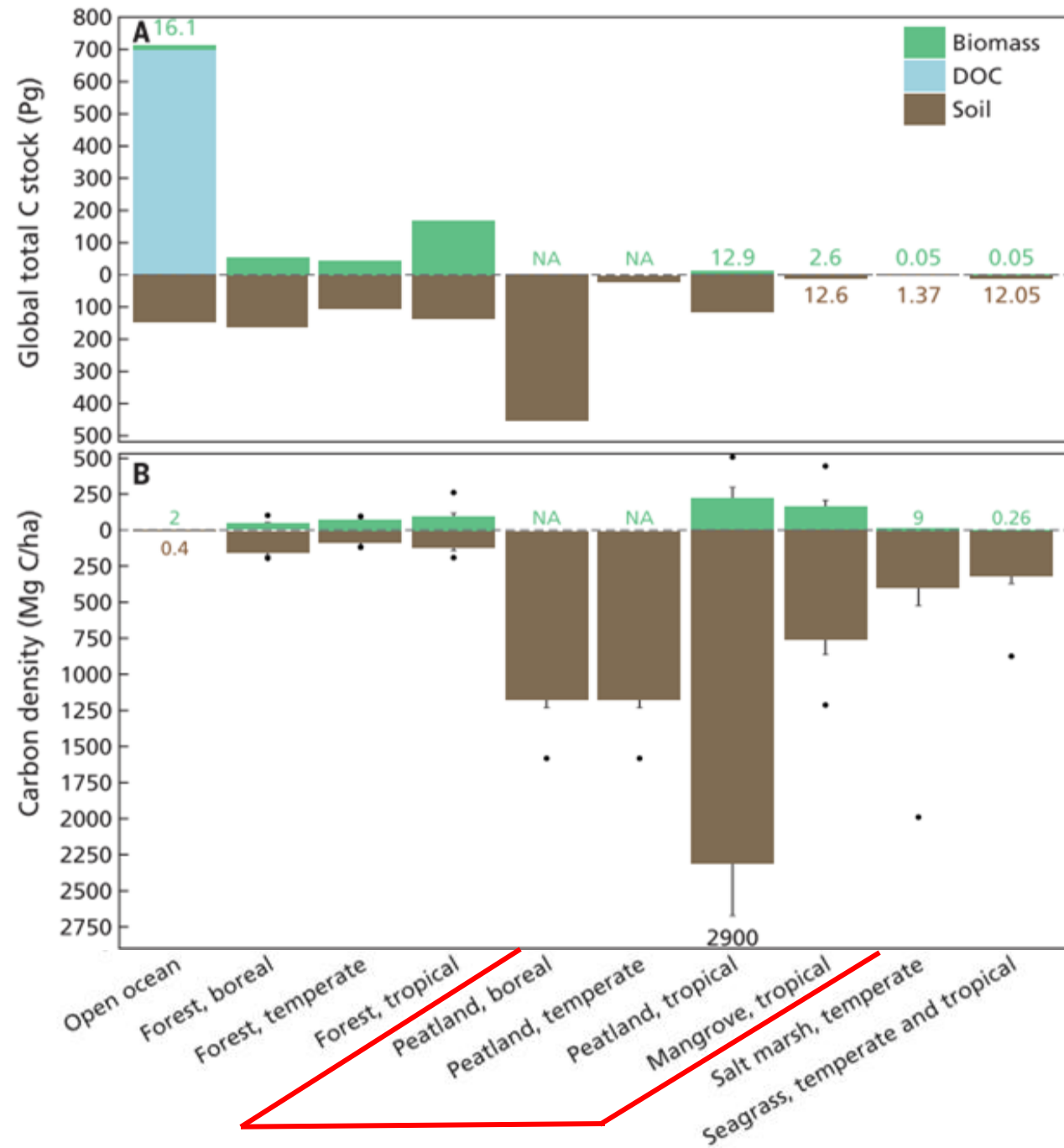
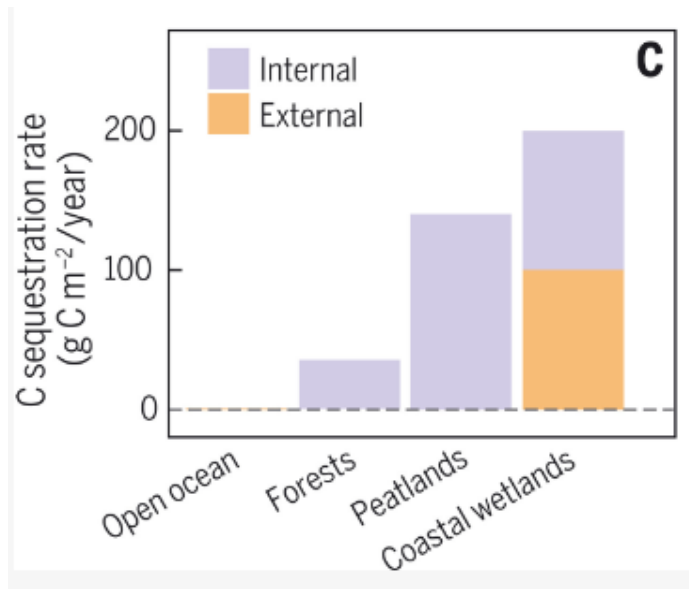




# Carbon dynamics

- Peatlands hosts highest carbon stocks per unit area
- Mangroves, salt marshes & seagrass: more rapid carbon sequestration rates

> Sequestration rate exceeds oceanic and forest ecosystems.



**Figures: (Right) Overview of the world's major carbon-storing ecosystems; (Above) Carbon sequestration rates**





Source: [Temminck et al., 2022](#)

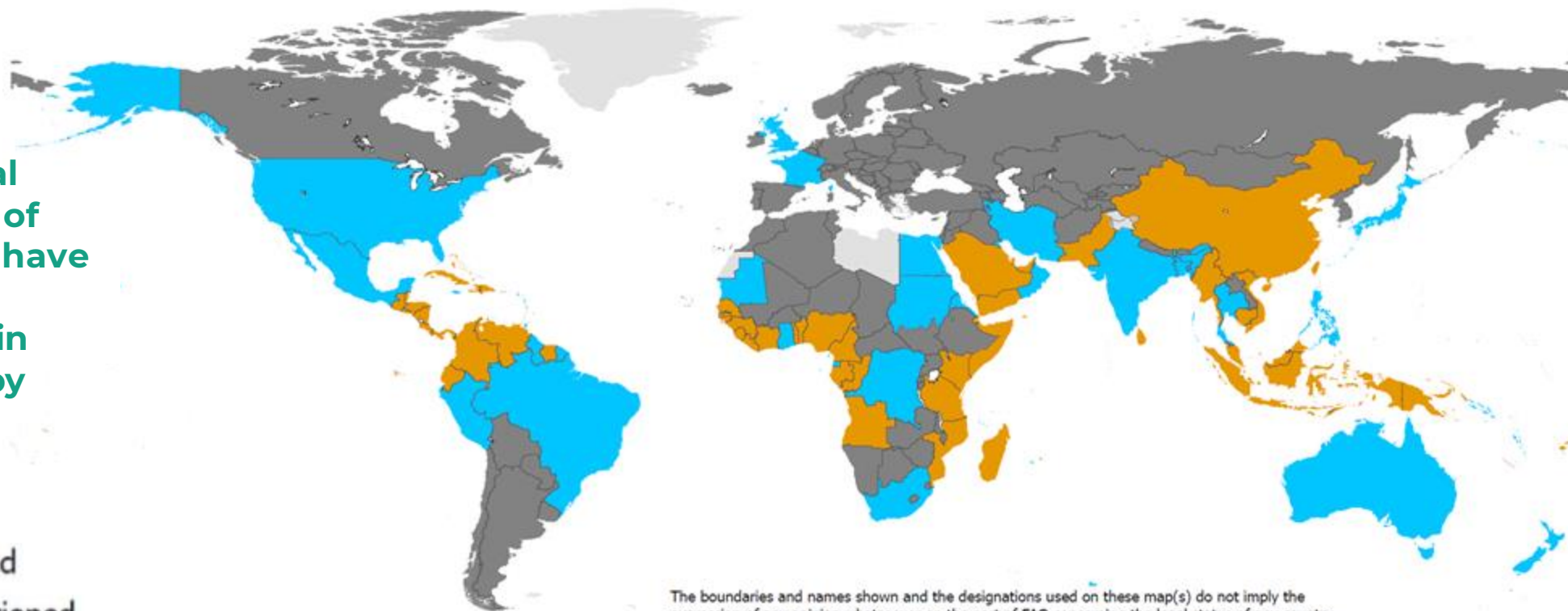
Legend: DOC = Dissolved Organic Carb

# Mangroves: the dominant wetland type in NDCs

Figure:  
Geographical  
distribution of  
parties that have  
mentioned  
mangroves in  
their NDC (by  
9/2022)

## Peatlands

-  Mentioned
-  Not mentioned
-  Not applicable
-  Other\*



The boundaries and names shown and the designations used on these map(s) do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries. Dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Final boundary between the Sudan and South Sudan has not yet been determined.

Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

*\*"Other" refers to disputed areas, special and overseas territories excluded in NDC, and any country or Party that did not ratify the Paris Agreement.*

From the total number of parties that are known to have mangroves, 62% (56) include mangroves in their NDCs.

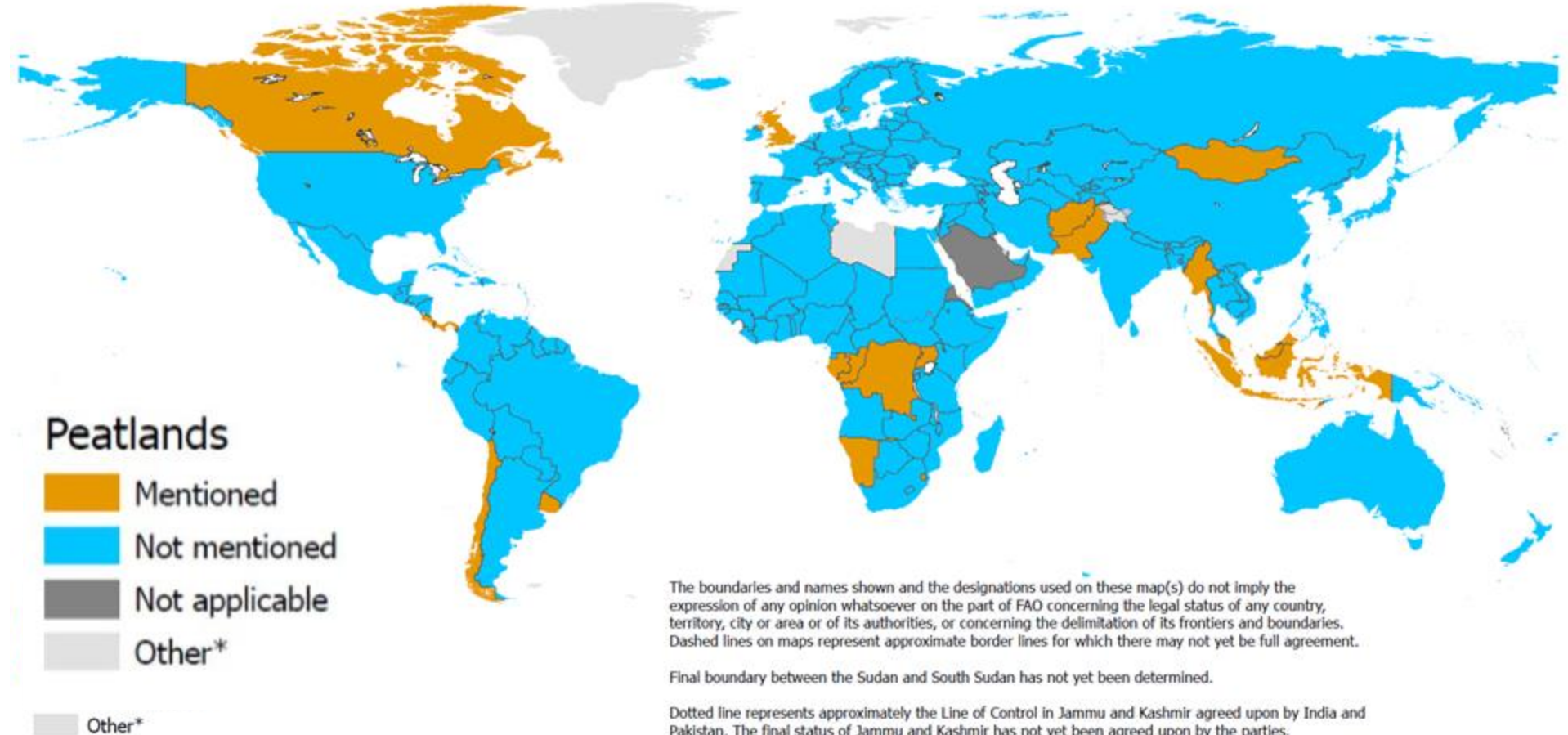
Source: [FAO & Greifswald Mire Centre, 2022: www.fao.org/3/cc2865en/cc2865en.pdf](http://www.fao.org/3/cc2865en/cc2865en.pdf)



# Peatlands: largely underrepresented

- The inclusion ratio doubled in NDCs
- From 2020, peatlands are mentioned for the first time in Europe and N. America.

**Figure: Parties that mentioned peatlands in their NDC**



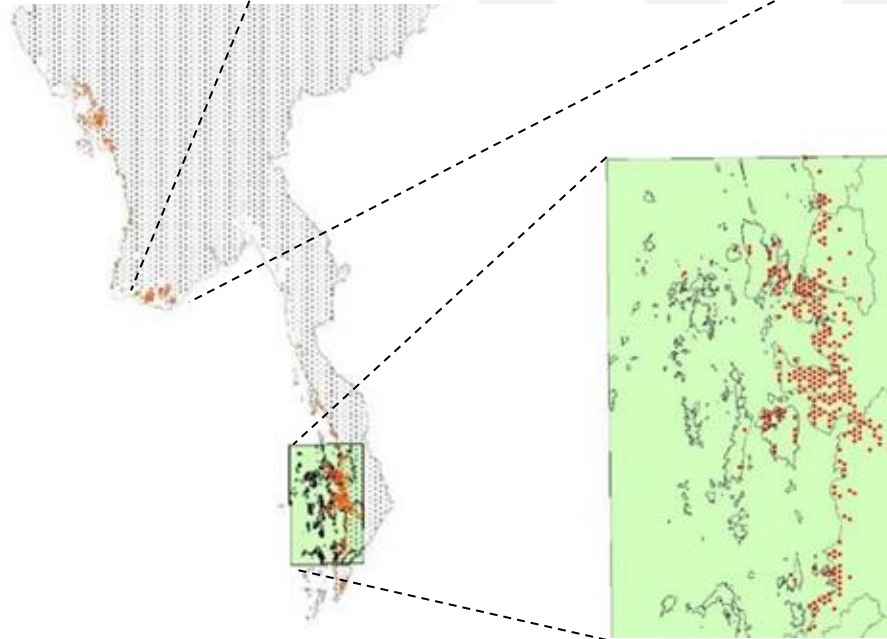
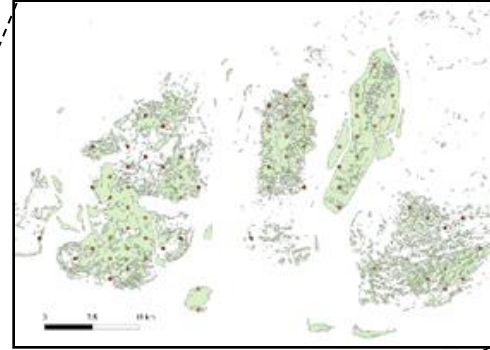
Source: [FAO & Greifswald Mire Centre, 2022](#)

From the total number of parties that are known to have peatlands, only 13% (17) include peatlands in their NDCs





# Mangrove initiative Myanmar



Coming up:  
Journal article

Updated  
methodological  
guidance for  
mangroves  
in National  
Forest  
Inventories



## RESEARCH & DEVELOPMENT

Identifying new technologies and  
overcoming barriers to progress



## DATA COORDINATION

Supporting developing  
countries to use cost-effective  
data and tools

Photo: Soil sampling in  
Myanmar mangroves,  
FAO/Marco Piazza



# Peatlands in national frameworks: a must

## NFI, NFMS and MRV

- Our approach: Integrating peatlands into national forest monitoring inventories, systems and reporting is key to boost transparency and access to finance
- Mapping and inventories as the baseline
- Monitoring for:
  - **GHGs** and ecosystem services for **adaptation**
  - **Disaster risk reduction**: fires, floods
- IPCC compliant, remote sensing supported, calibrated with field data
- Urgent need to move ahead:
- Toward nationally validated **maps and inventories**,
  - land use planning,
  - rapid restoration,
  - updated IPCC guidance – and more!



METHOD & GUIDANCE  
DOCUMENTATION (MGD)





# Key messages

- **Monitoring:** data and capacity development support available
- **New tools and methods:** contribute to NDCs, REDD+, agriculture, adaptive capacity in developing countries...
- **Invitation:** Joining existing technical through coordinated efforts - and feeding into GFOI process:
  - Global Peatlands Initiative's mapping & monitoring work stream: <https://dgroups.org/fao/peatlands/events/monitoring/join>
  - Mangroves, seagrass, wetlands,
  - Combining expertise



DATA COORDINATION



RESEARCH &  
DEVELOPMENT



METHOD & GUIDANCE  
DOCUMENTATION (MGD)

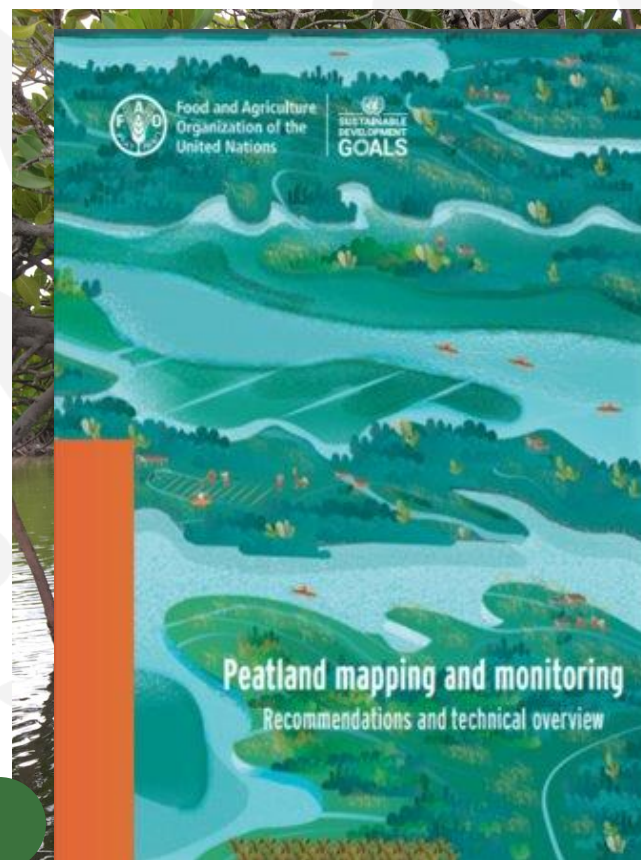
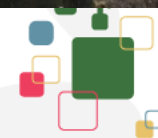


Photo: Mangrove in Mida Creek,  
Kenya FAO/Eva Ntara

# Thank you.





# Peatlands: coordinated approach

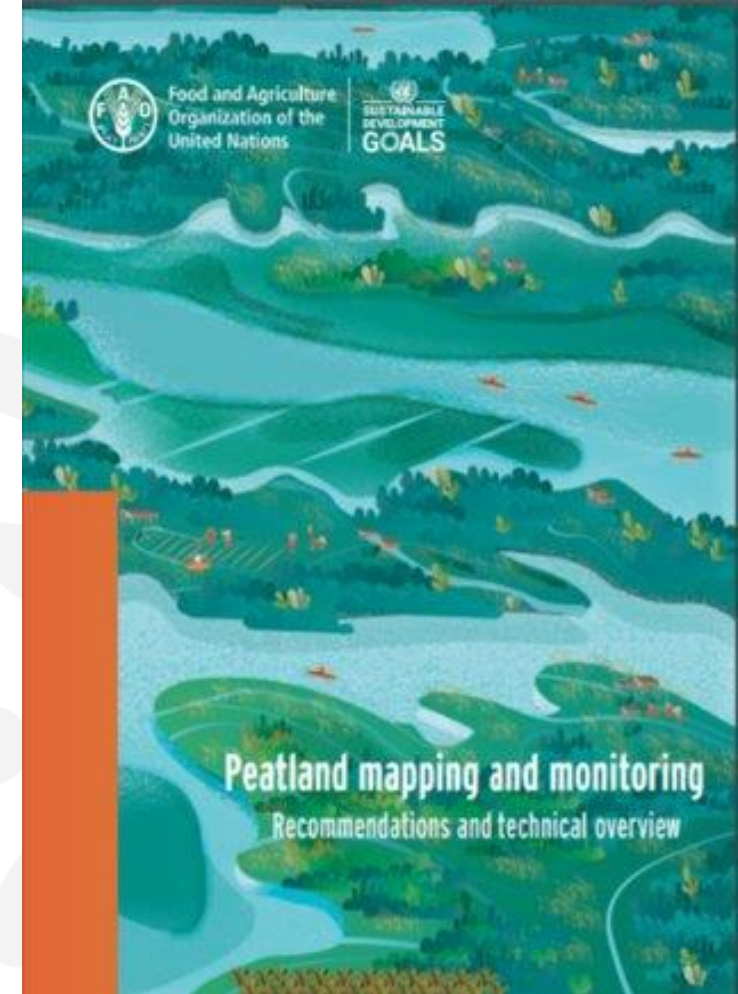


**Global experts' network** coordinated by FAO under the Global Peatlands Initiative: <https://dgroups.org/fao/peatlands/events/monitoring/join>

**Technical innovations:** satellite-based soil moisture monitoring connected to ground-water level and emission factors

**Capacity development & knowledge exchange:** training on new tools & approaches

**Joint efforts to update emission factors and the IPCC Wetlands Supplement 2013**



UNITED NATIONS DECADE ON  
**ECOSYSTEM  
RESTORATION**  
2021-2030



Photo: FAO/Augustin Kamukenge Lamulamu

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FAO, 2020: [www.fao.org/3/ca8200en/CA8200EN.pdf](http://www.fao.org/3/ca8200en/CA8200EN.pdf)