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Wetlands in climate commitments

Preliminary results

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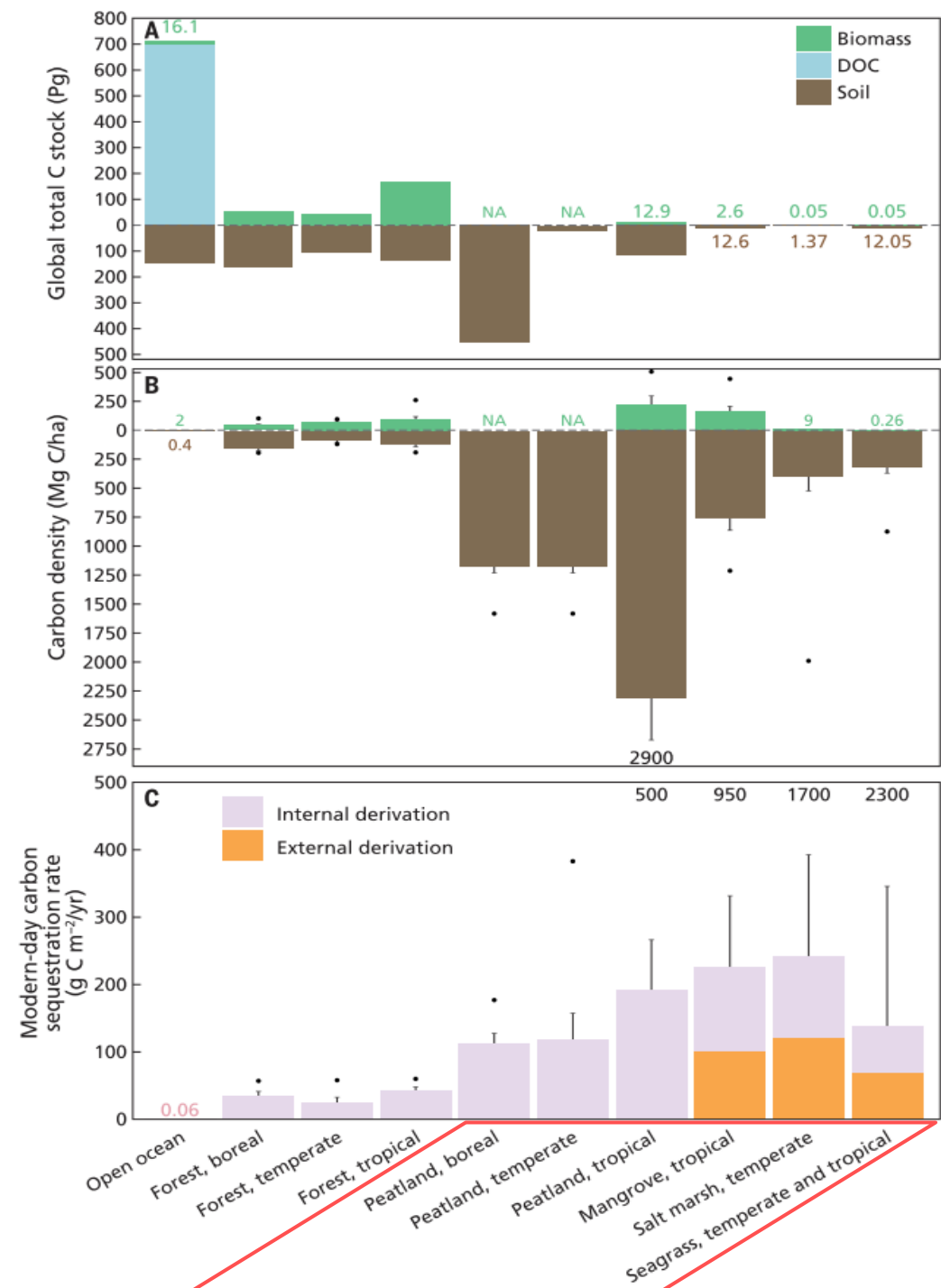
10 November 2022

Carbon in the different wetland types

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

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

Legend: DOC = Dissolved Organic Carbon



Carbon emissions per wetland type after conversion

- Upon conversion, wetlands represent an immense source of GHG emissions:
 - Peatlands alone are estimated to contribute to 5% of global GHG emissions
- Inclusion of wetlands in mitigation actions (activities) is crucial to mitigate climate change
- The conservation and restoration of wetlands will also contribute to multiple co-benefits that contribute to the Sustainable Development Goals

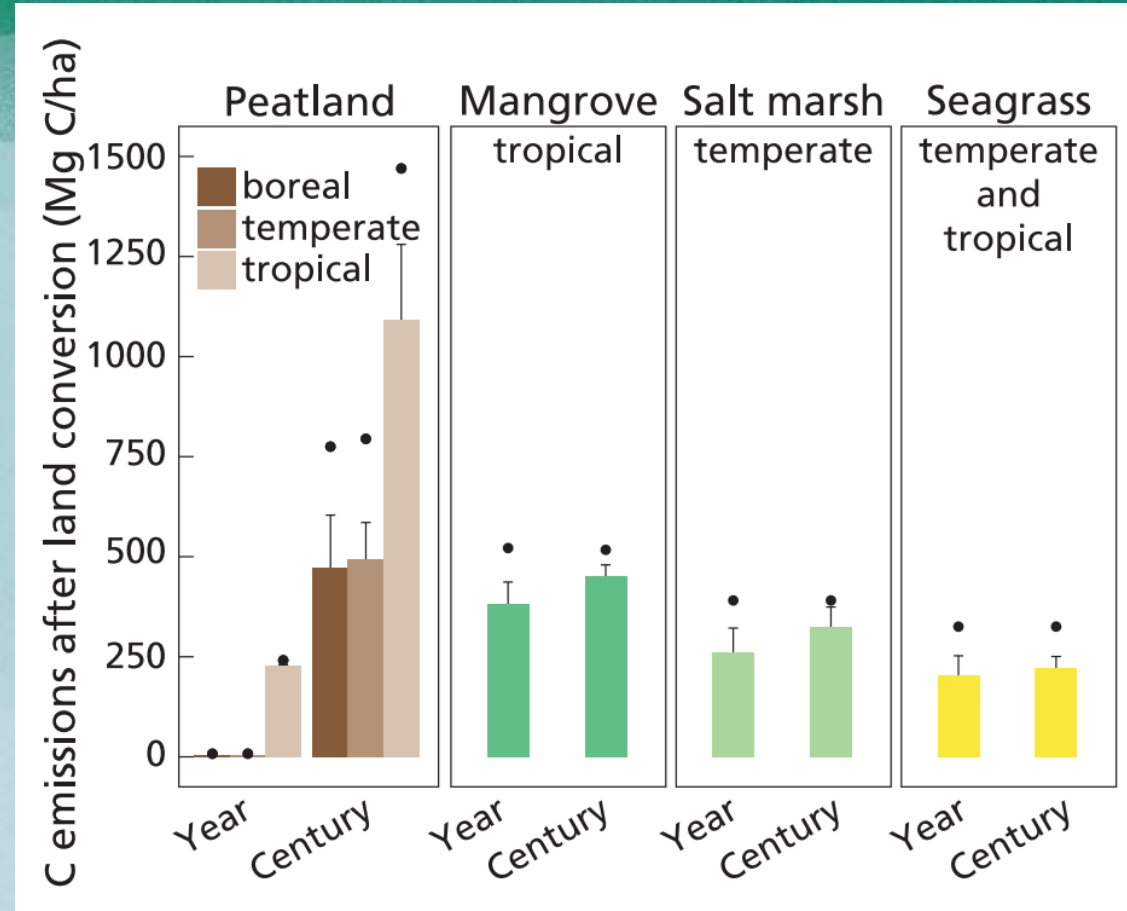


Figure: Carbon emissions after land-use change in biogeomorphic wetlands

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

Key words in 5 different UN languages

Analysis conducted using key words using the different languages as per countries' submissions:

- **Wetland**, zone humide, humedal, páramo*
- **Peatland**, peat, swamp, organic soil, tourbe, tourbière, sols organiques, turba, turbera, suelos orgánicos
- **Mangrove**, palétuvier, manglar, mangle
- Compiled, all wetland categories, include also:
 - **Seagrass**, herbier marin, prairie marine, hierba marina, pastos marinos
 - **Saltmarsh**, marsh*, tidal marsh, salt marsh, marais, salina, pantanal, marisma
 - **Coral reef**, reef, coral, récif corallien, corail, arrecife de coral

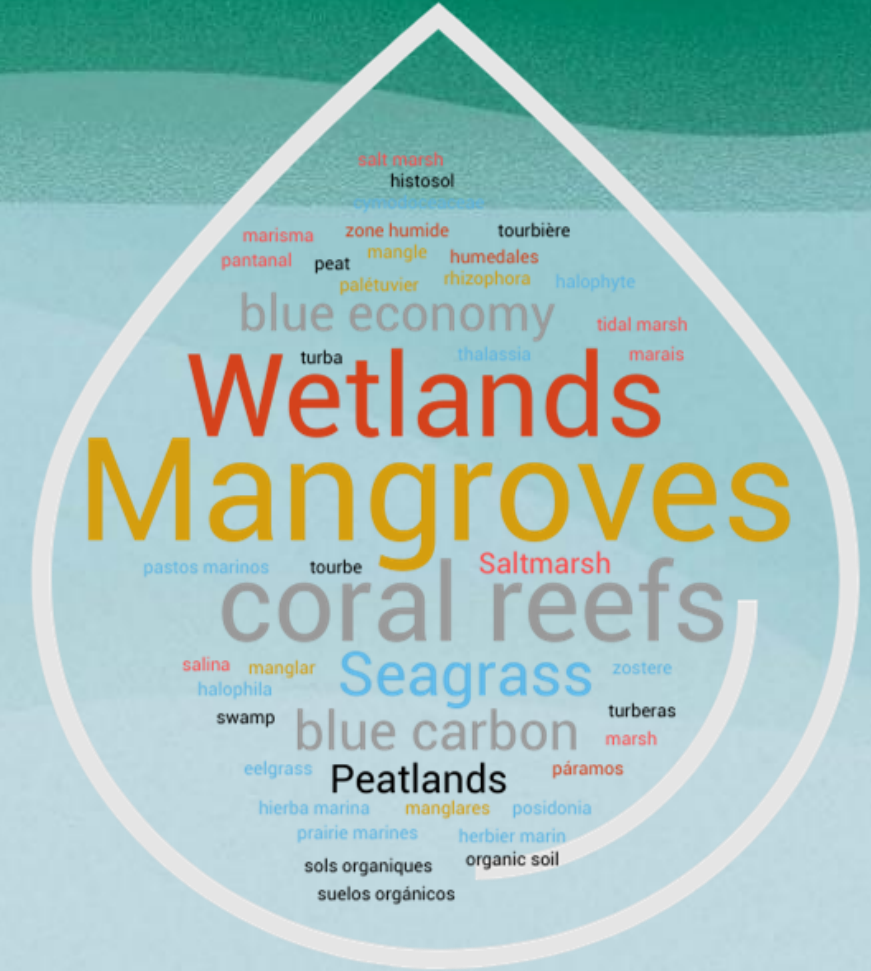


Figure: Word cloud demonstrating the frequency of key words included in the analysis of wetlands in NDCs

*Certain páramos and marshes can also develop peat and thus may refer to peatlands. For the consistency of this analysis, and as no in-depth qualitative analysis has been done yet, these keywords were only considered for their reference to wetlands and saltmarshes, respectively.



Wetlands in climate commitments

Results from two cycles of NDC submissions

- Number of all NDCs analysed:
 - 169* from 2015 onwards
 - 147* from 2020 until 23 September 2022
- General progression over the two cycles
- Wetlands & mangroves are the most mentioned wetland types in the NDC
- Peatlands remain poorly mentioned albeit their high potential in climate change adaptation and mitigation.

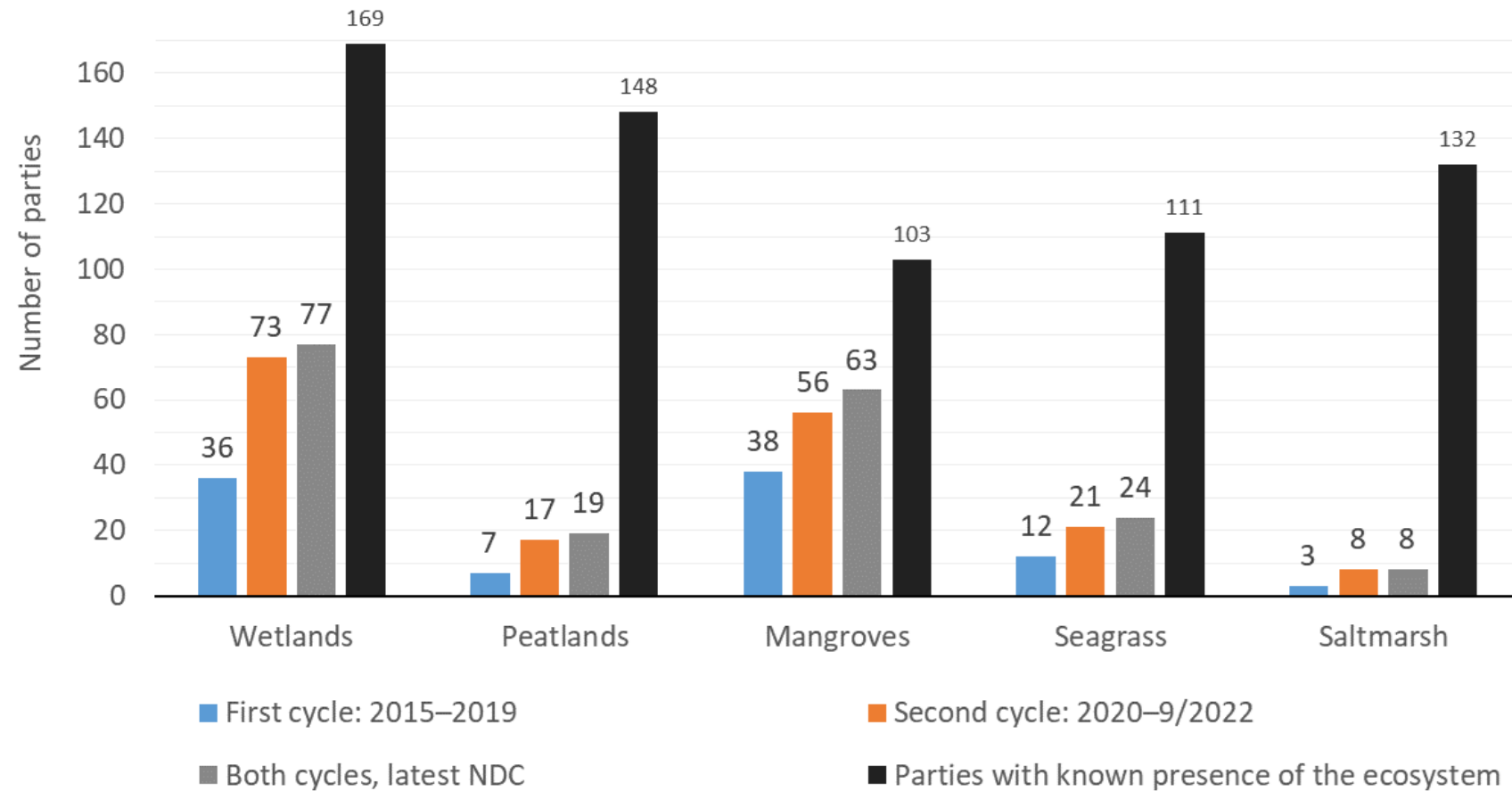
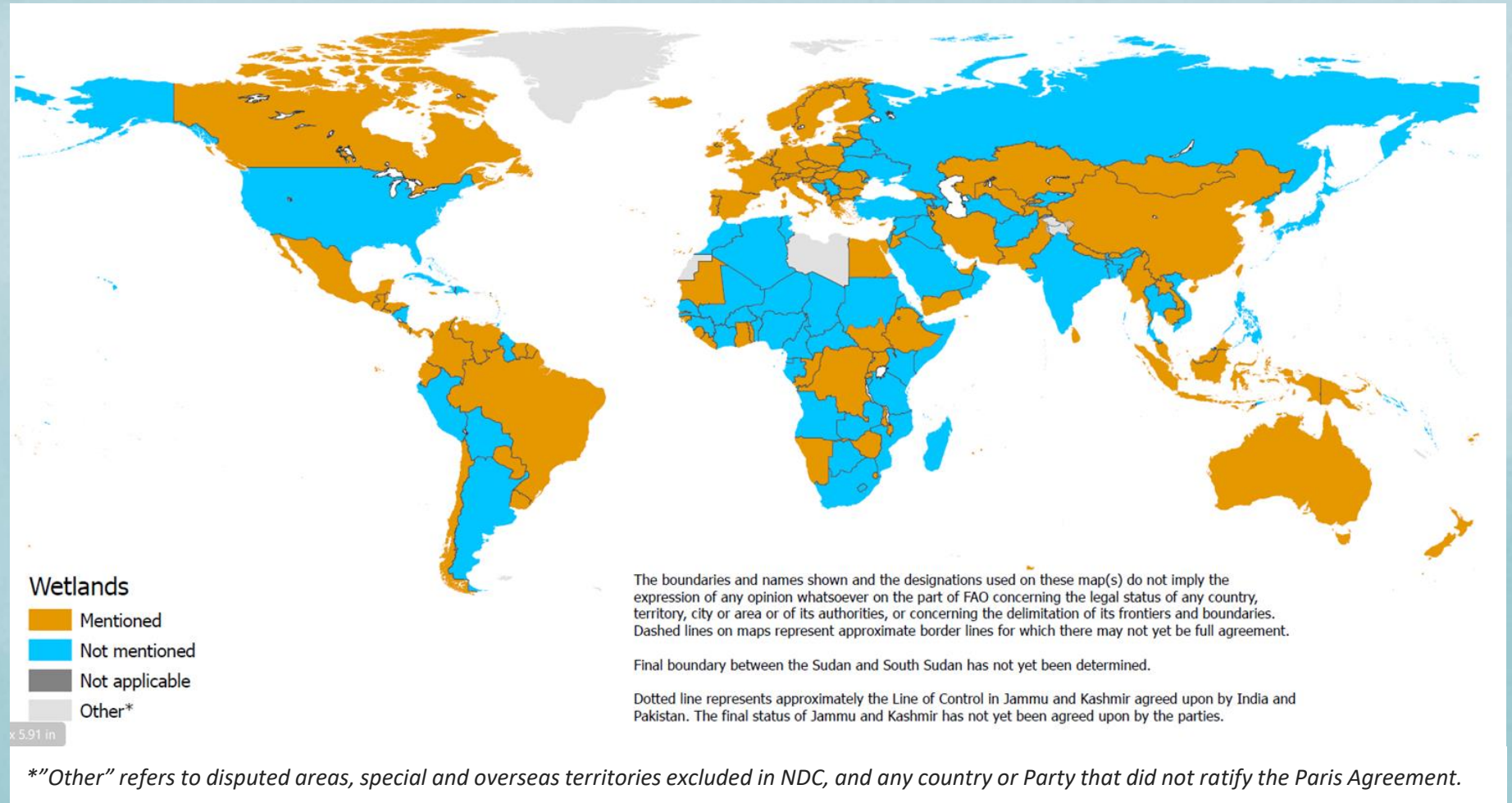


Figure: Number of parties that have mentioned different types of wetlands in their NDCs

* Includes European Union which represents 27 countries in one single NDC.

Wetlands: in NDCs from all regions

- In all regions, except Northern America, considerably more references to wetlands are made after 2020
- In most of the regions, almost half of the contributions mentioned wetlands.

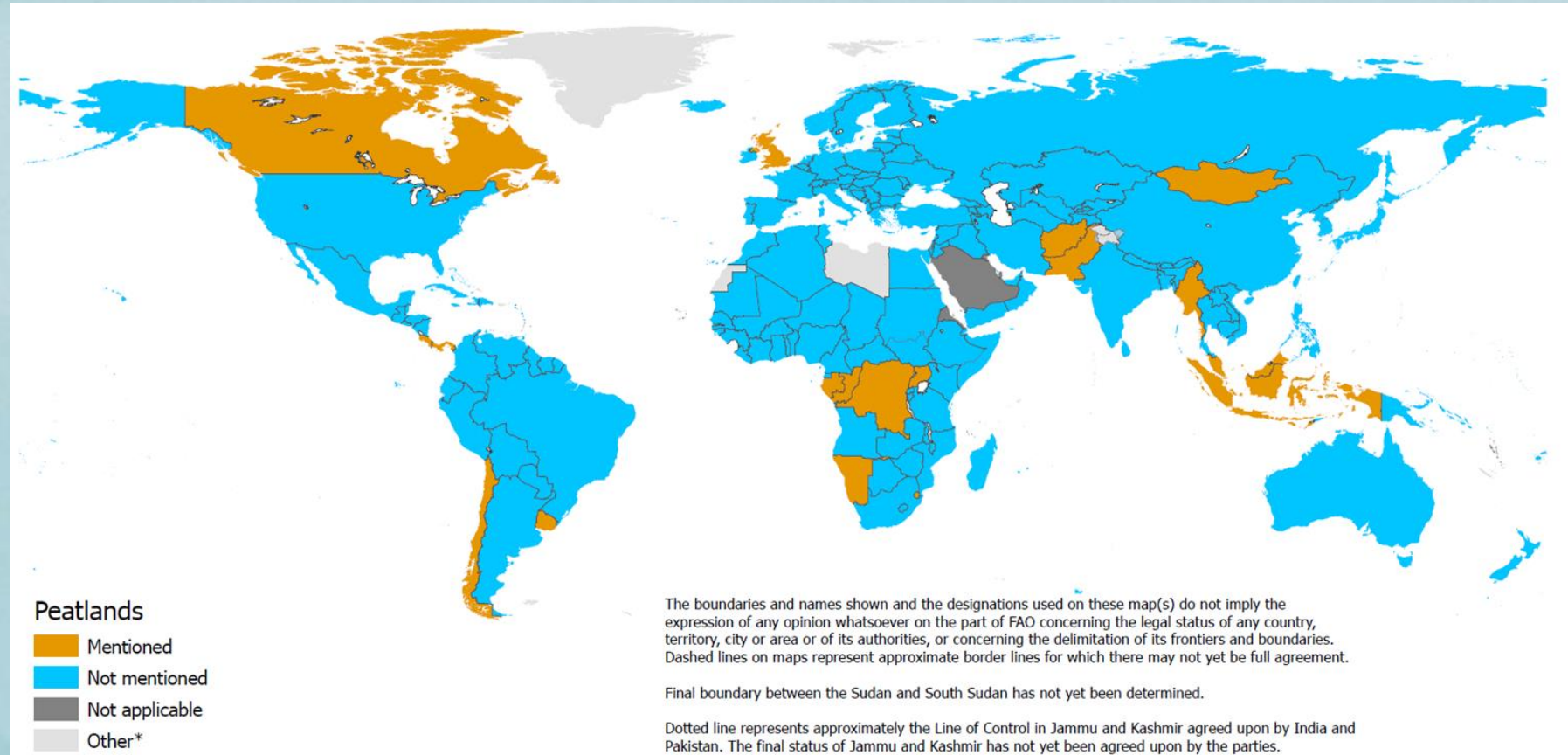


Globally, 46% of parties include wetlands in their NDCs

Figure: Geographical distribution of parties that have mentioned wetlands in their NDC

Peatlands: largely underrepresented

- The inclusion ratio doubled between the two cycles but remains under 15% of countries with peatlands
- From 2020, peatlands are mentioned for the first time in Europe (the UK) and Northern America (Canada).

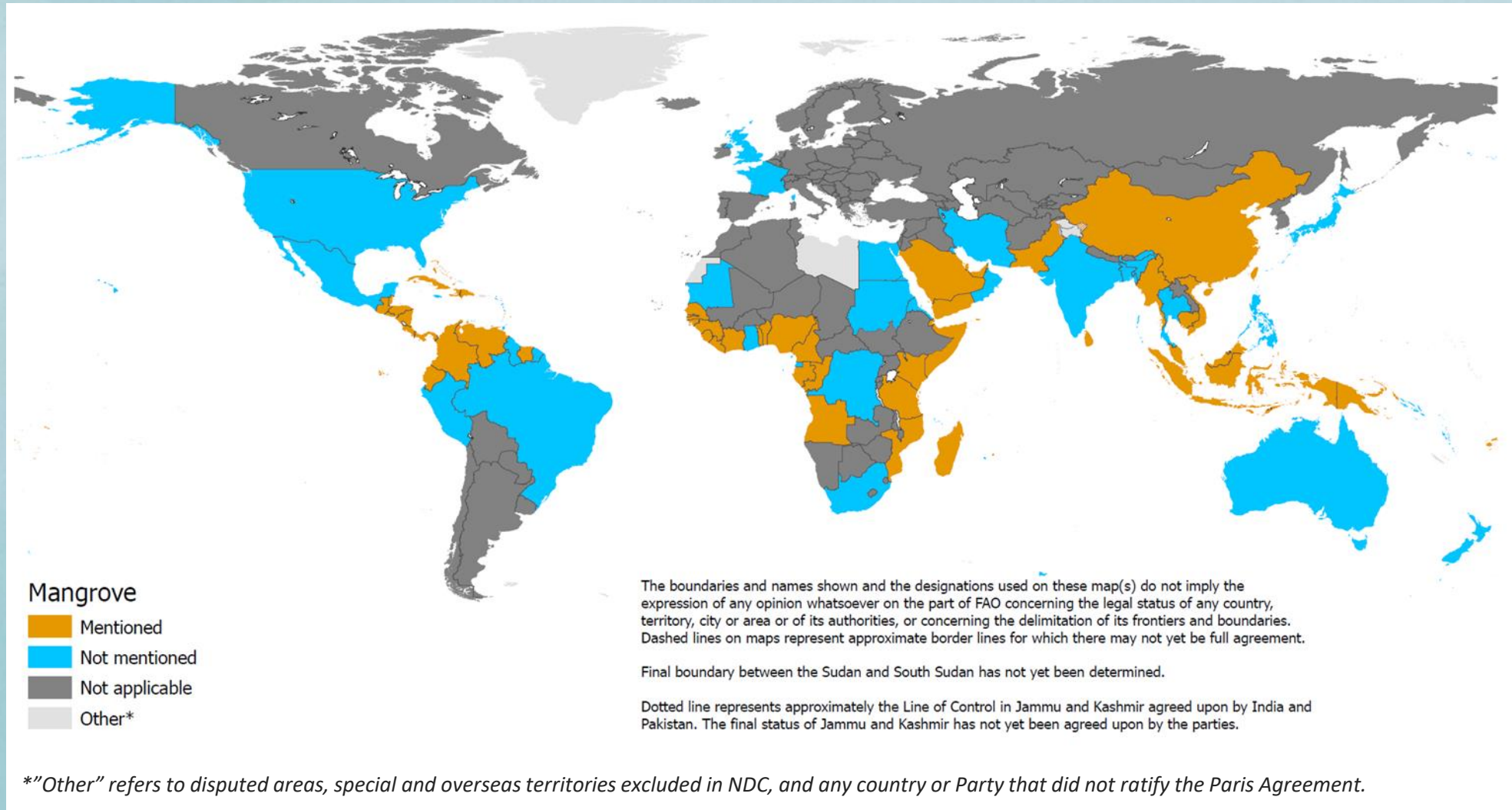


**"Other" refers to disputed areas, special and overseas territories excluded in NDC, and any country or Party that did not ratify the Paris Agreement.*

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

Figure: Geographical distribution of parties that have mentioned peatlands in their NDC

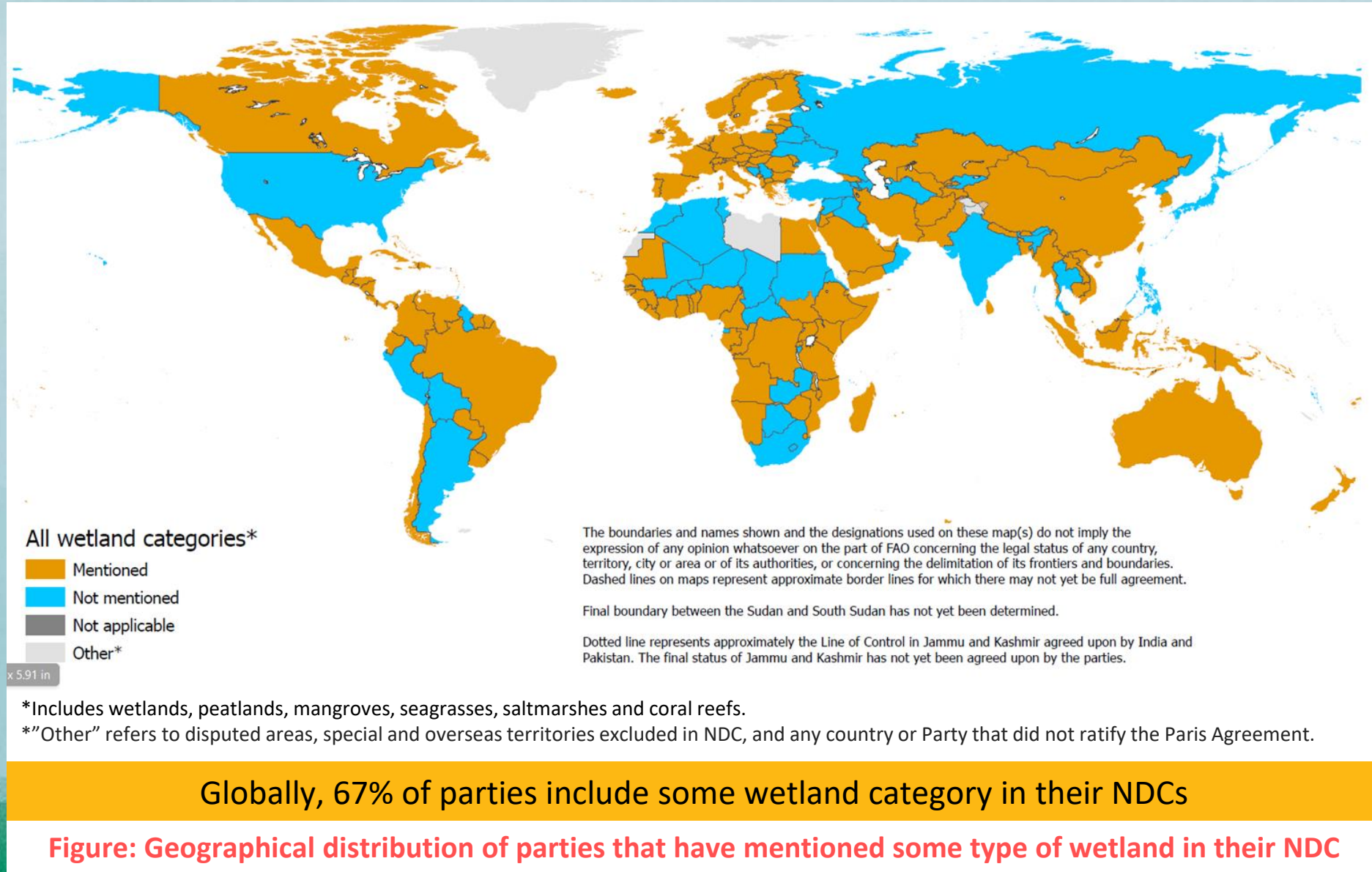
Mangroves: the dominant wetland type in NDCs



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

Figure: Geographical distribution of parties that have mentioned mangroves in their NDC

All wetland categories: scope for improvement



Climate change mitigation:

Policies, measures, actions mentioned by Parties in NDCs

- Increasing carbon sinks
- Reducing GHG emissions from fires in peat soil, and deforestation
- Protecting all wetlands that function as carbon sinks, conservation of carbon-rich ecosystems
- Reversing coastal wetlands degradation by addressing the main drivers of degradation
- Restoration of wetlands, peatlands and mangroves, linking to fisheries
- Integration of wetland data and plans into development plans
- Deepening scientific knowledge of ecosystem services
- Sustainable use of mangroves by communities
- Effective management and monitoring
- Discouraging further wetland draining and unsustainable land use practices
- National wetland policies
- Implementing nature-based solutions (NbS)
- Reducing fertilizer use to address water pollution

Adaptation - Part 1

Policies, measures, actions mentioned by Parties

- Restoration, protection, conservation by indigenous peoples and sustainable management of coastal ecosystems, coastal wetlands, peatlands, mangroves, seagrasses, saltmarshes and reefs
- Watershed and basin level management of water resources including transboundary water
- Preservation of strategic ecosystems like wetlands, biodiversity and water resources
- Creation of biological corridors to strengthen connectivity,
- Larger buffer areas around wetlands, peat swamps and mangroves
- Development of technical guidelines for coastal ecosystems under the national adaptation planning process

Adaptation - Part 2

Policies, measures, actions mentioned by Parties

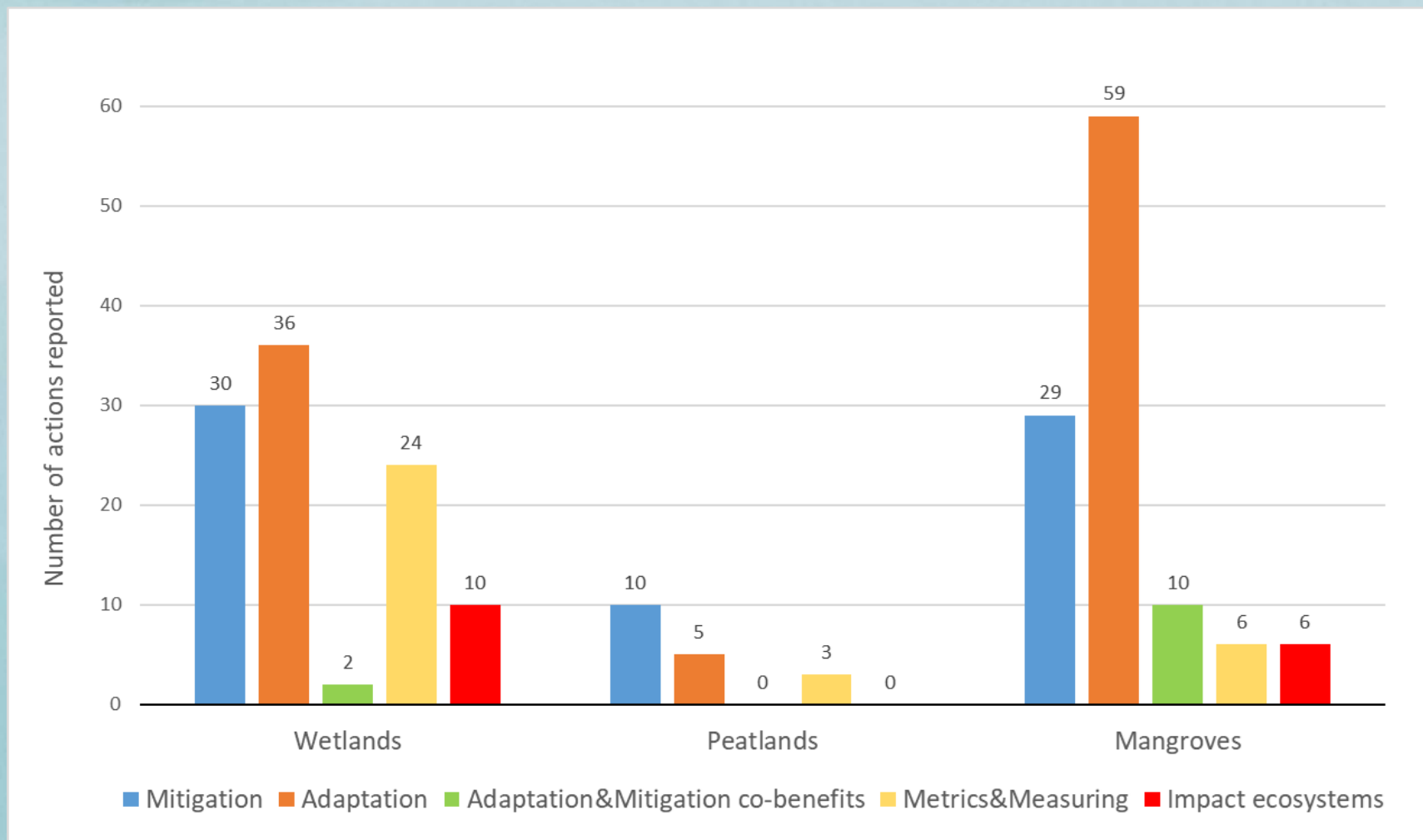
- Resilient human settlements, addressing the loss of coastal wetlands' protection services
- Protecting and enhancing forests, soils and coastal wetlands to reduce erosion and protect against flooding and salinization
- Payment for ecosystem services, ecosystem-based approaches & NbS
- Coastal wetlands' role in building resilience for communities and supporting livelihoods
- Sustainable tourism
- Enhancing law enforcement measures
- Funding gaps, with focus on wetlands and mangroves, incl. through REDD+, ecosystem restoration fund

Other policies, measures, actions mentioned by Parties

Examples from 3 categories

- **Adaptation with mitigation co-benefits:** biodiversity, mangrove rehabilitation, coastal protection, ecosystem services valuation
- **Metrics & measuring:** mapping, carbon stock, methodologies to assess GHG emissions and carbon sequestration, utilization of the IPCC 2013 Wetlands supplement, national wetland inventories and national forest inventory
- **Impact ecosystems -category:** ecosystems' vulnerability to climate change and other anthropogenic activities, drivers of their loss

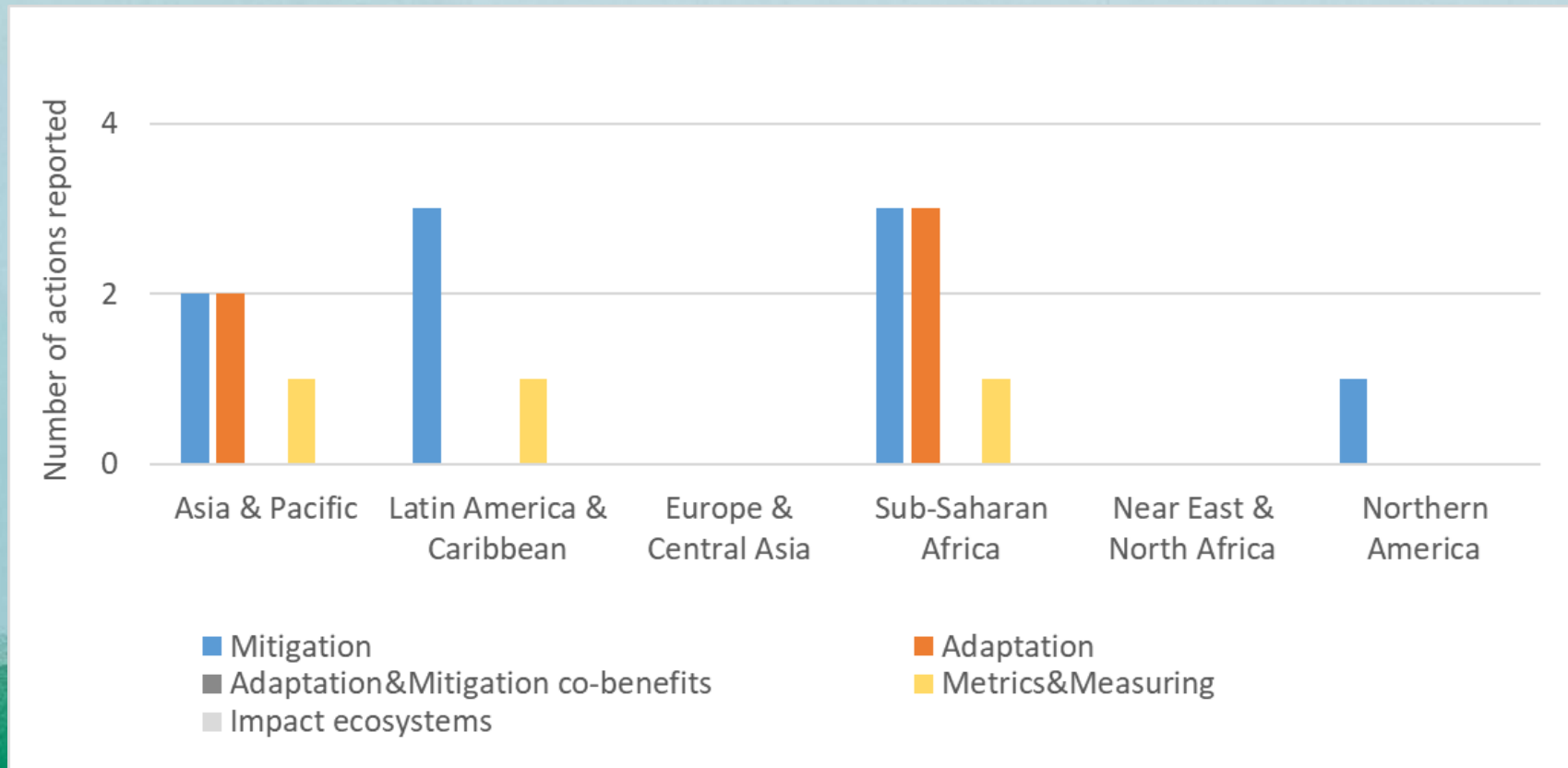
Different types of measures covered in NDCs by key words



After 2020, parties are increasingly including different types of measures. Particularly, adaptation measures have doubled for terms like 'wetlands', 'peatlands' and 'mangroves'.

Peatlands and climate action

- More attention to adaptation, and metrics & measuring aspects in the latest NDC submissions: mapping, conservation, biodiversity co-benefits
- Measures: Ecosystem-based mitigation with restoration, conservation and protection, reduction of fire in peat soils
- Reducing GHGs from energy sector by shifting away from the use of peat as a fuel.



Take-home messages

- Inclusion of wetlands in NDCs has doubled since 2020 but remains low:
 - Most attention has been given to mangroves: 62% inclusion ratio
 - Much less attention is given to peatlands: 13% inclusion ratio
- Action for mitigation and adaptation:
 - Most focus on conservation and restoration to reduce vulnerability to climate change and reduce emissions.
 - Less focus on addressing anthropogenic activities causing degradation.
- To develop: setting clear targets, refining monitoring systems.
- Measures still lacking behind the need to reach the Paris Agreement goals.

An illustration of a hand with a brown complexion, wearing an orange sleeve with a yellow cuff, holding a red-handled magnifying glass. The magnifying glass is focused on a small, detailed landscape within its lens, showing green hills, a blue river, and a small red boat. The background is a soft, abstract landscape with light blue and green washes.

Thank you!

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Photo by FAO

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