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Peatland mapping and monitoring: Priorities for climate action

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Why map and monitor peatlands?

1. Know the location for **land use planning to avoid and mitigate threats and losses**
2. **Assess condition** and possible need for action for **action plans and budgets**
3. Monitor & adapt management **interventions**
4. **Report** to international conventions and initiatives

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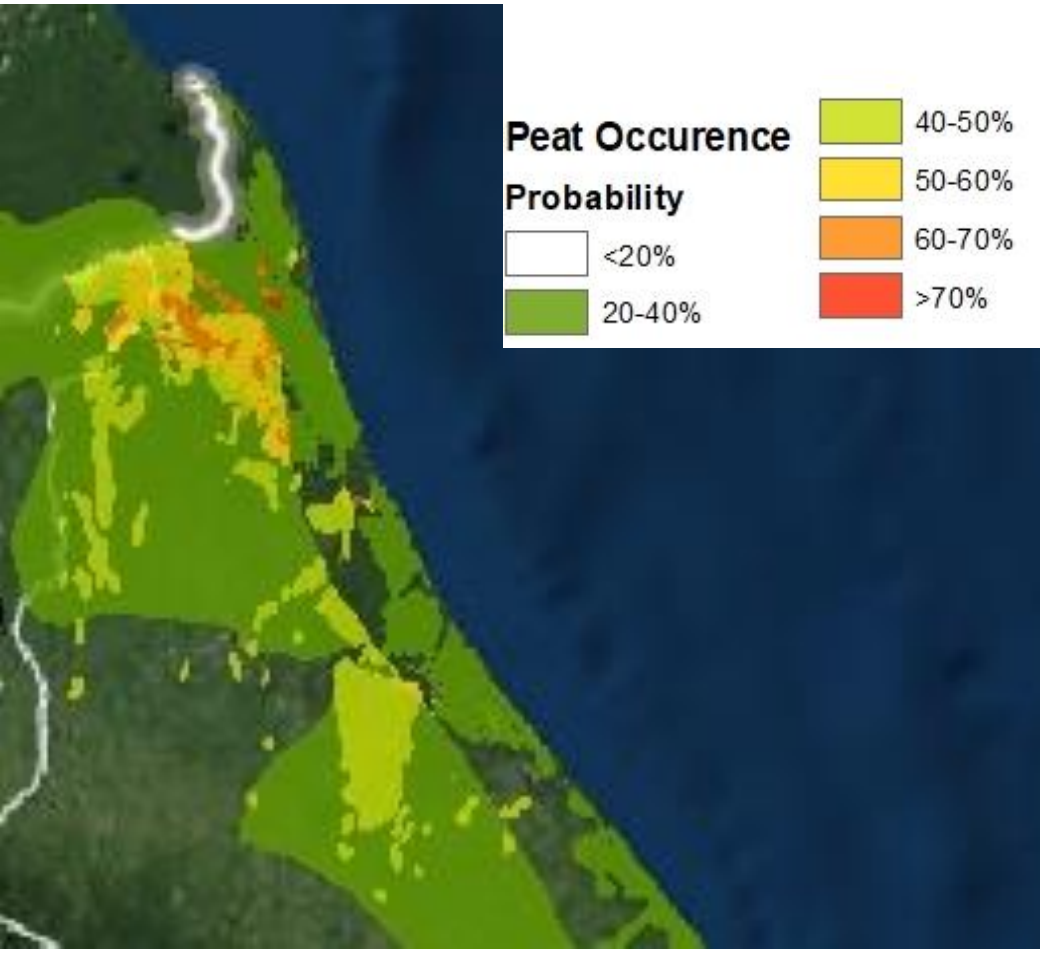
Challenges

In tropical peatland forest

Peatlands look very different

Or in boreal and temperate regions

Peatland mapping as the 1st step



Mapping allows to **collect information on:**

1) peatlands' extent,

2) status: including potential drainage and other management, and

3) ecosystem services

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Water - the key element in peatlands

When water levels decrease, **peat degrades and burns easily**.

Monitoring approaches need to focus on water content of peat soil.

Therefore we need to adapt and develop further **land use and land use change monitoring with new approaches**

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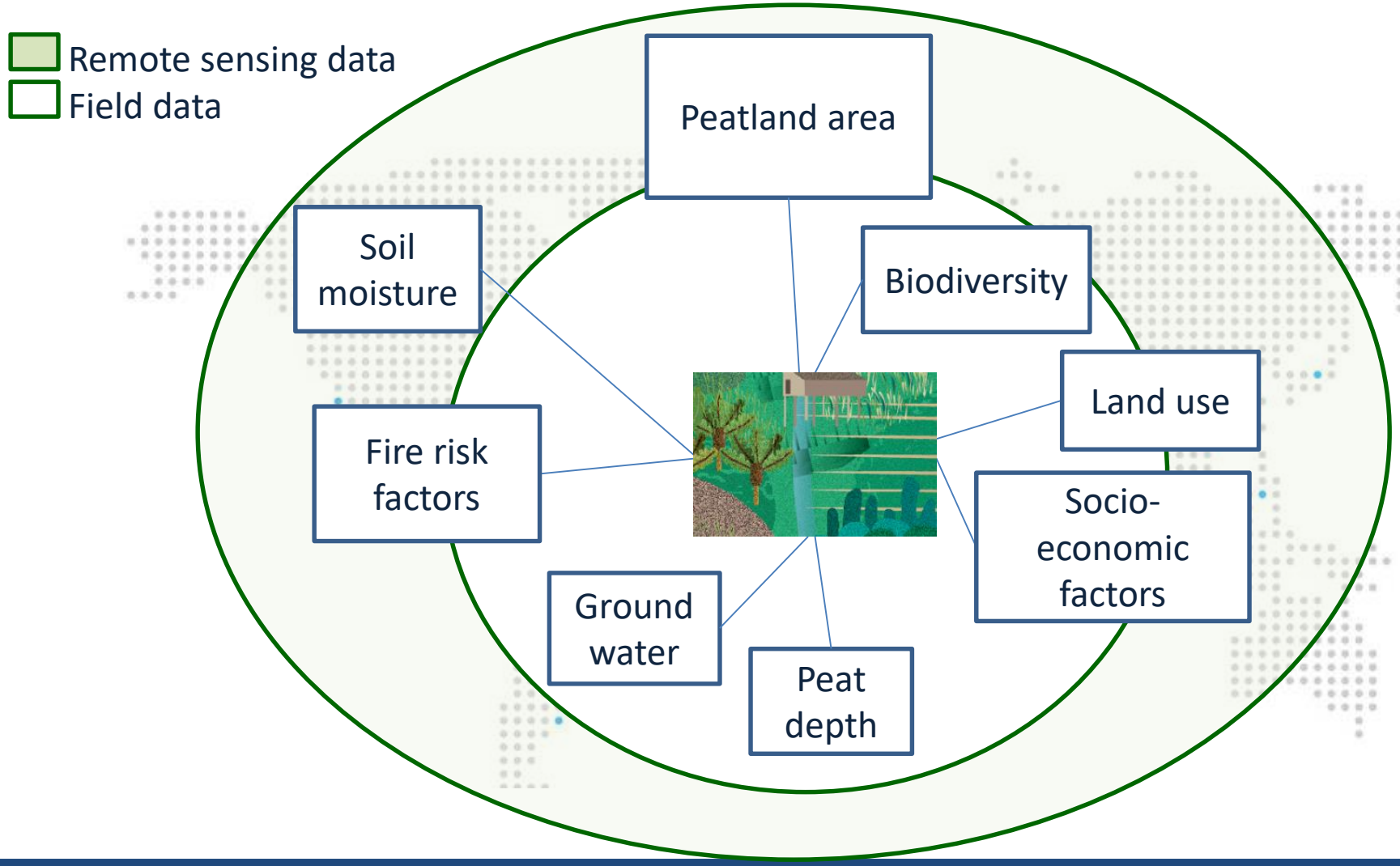
Data collected both remotely and from the field are needed



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Peatland monitoring

Monitoring is essential to alert conversions, assess restoration activities and undertake **adaptive management** of peatland areas.

Peatland monitoring should be integrated in existing **land monitoring systems** with a landscape approach.

Photo: Maria Nuutinen, 2018

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Examples of peat monitoring tools

Type of tools	Object of monitoring	Examples of tools
Ground based	Water table level	Dipwells
	Surface level	Subsidence poles
	GHG fluxes	Flux towers
Remote observational	Hydrological characteristics, fire, canal detection, forest degradation	Synthetic aperture radar
	Canal water depth, surface level	LiDAR
	Surface level (cm)	Interferometric SAR
Analytical	Impact of projects on carbon balance	EX-Ante Carbon Balance Tool – EX-ACT
	Soil Organic Carbon	Soil Carbon Model Yasso

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Peatland restoration monitoring in Indonesia

High resolution satellite data is used for monitoring restoration

SEPAL openforis.org/tools/sepal

OPENFORIS

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Integrated monitoring systems

Integrated monitoring would help reporting for various Conventions and commitments:

SUSTAINABLE DEVELOPMENT GOALS

15 LIFE ON LAND

13 CLIMATE ACTION

6 CLEAN WATER AND SANITATION

Aichi Biodiversity targets

BONN CHALLENGE

United Nations Framework Convention on Climate Change

United Nations Convention to Combat Desertification

Ramsar CONVENTION ON WETLANDS (Ramsar, Iran, 1971)

Convention on Biological Diversity

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Priority peatland actions

1 - Accurate maps as for monitoring and defining management actions

- Identify key opportunities and issues using remote sensing monitoring

2 - Agree on peatland definitions to improve maps

- Carbon content, and minimum thickness to define a peatland

3 - Update peatland emission factors

- Increasing accuracy of inventories and reporting to focus on best improvements

4 - Integrate peat into land monitoring systems

- Act effectively supporting existing systems e.g. NFMS

5 - Prioritize monitoring and further develop collaboration & capacity

- Set up clear institutional responsibilities and collaboration

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Peat in a crater, Ranu Kao, on Easter Island

Thank you!

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www.fao.org/redd/areas-of-work/peatlands