Food and Agriculture Organization
of the United Nations

# Wetlands and Agricultural Development

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# Content of the Presentation

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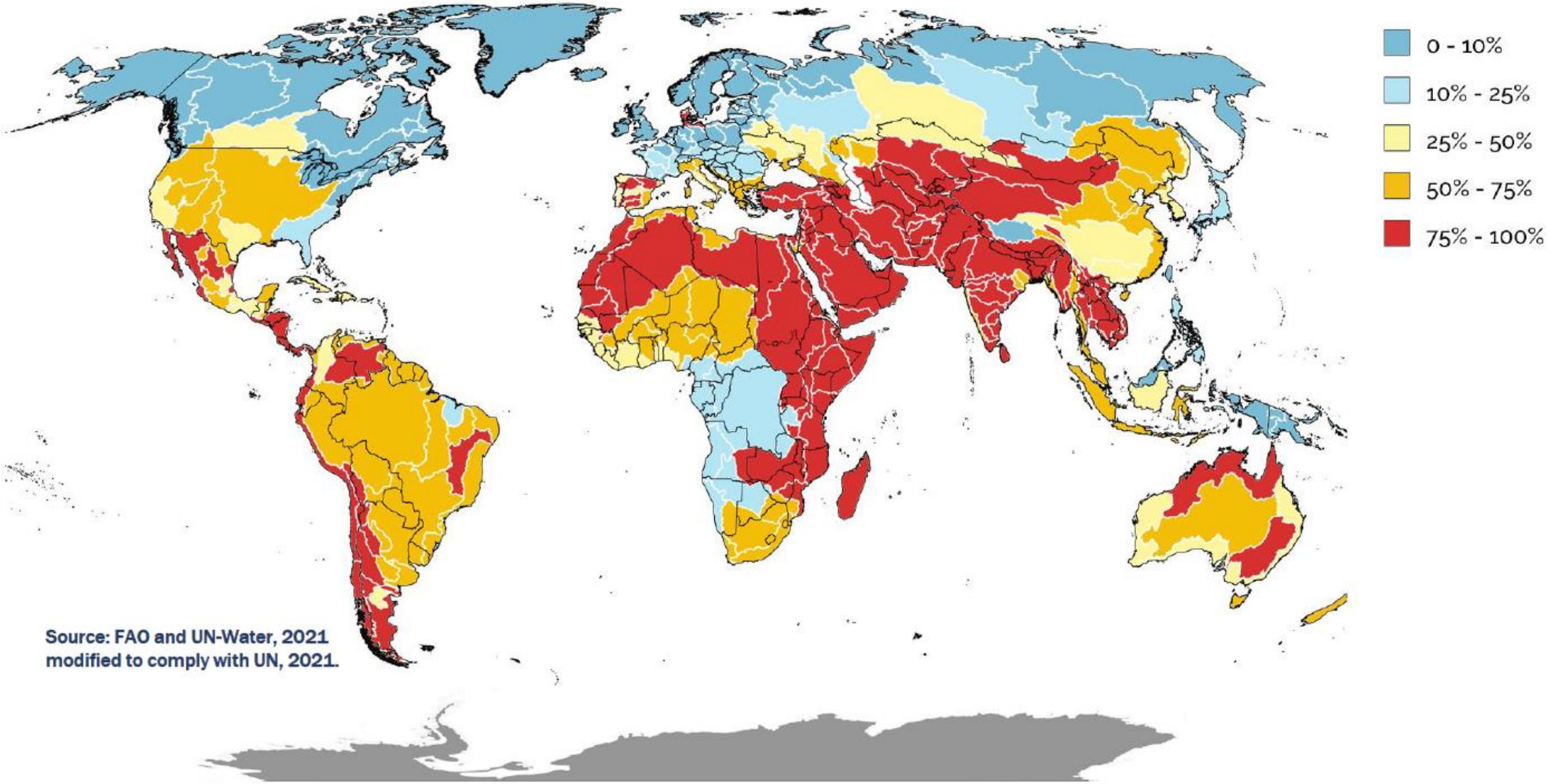
# Wetlands

- The richest and most productive places on Earth.
- An essential part of the **water cycle**, filtering pollutants and holding significant volumes of the world’s available fresh water.
- Over the last 300 years, over **85%** of the world's wetlands have been lost due to agricultural expansion, water supply projects, climate change and unsustainable use.

# Level of water stress due to the Agricultural sector by basin, 2018



# The role of wetlands

- **Wetlands contribute to food security**
  - Wetlands are the **basis of food security**
  - They provide conditions that enable a **wider range of crops** than dry lands, providing food to wetland adjacent
  - They also **offer additional income** through the cultivation **of locally marketable** crops such as rice, sugar cane and vegetables

# Example A: Rice paddy

- A typical agricultural landscape for a significant proportion of world rice cultivation
- Providing large areas of open water for centuries in regions with a variety of rice-growing cultures
- In addition to producing rice, they also provide other animal and/or plant food sources and medicinal plants, thus acting as wetland systems and helping to sustain livelihoods and human well-being in these regions

# Rice-Fish culture systems

**Longxian is a traditional Rice-Fish Culture system village in China.** Guided by FAO and MARA of China, the following activities were conducted:

- **Establishment of local GIAHS protection office.**
- **Capacity building**
- **Development of GIAHS tourism**
- **Promotion of Rice-Fish Culture**
- **Infrastructure construction**
- **Academic research**

Due to the GIAHS Initiative, the area of rice-fish in Longxian is becoming more economically stable.

- The rice price from the rice-fish system is more than 60% higher than the one from the conventional paddy fields.
- The number of tourists and revenue from tourism increase.

# Example B: Peatlands

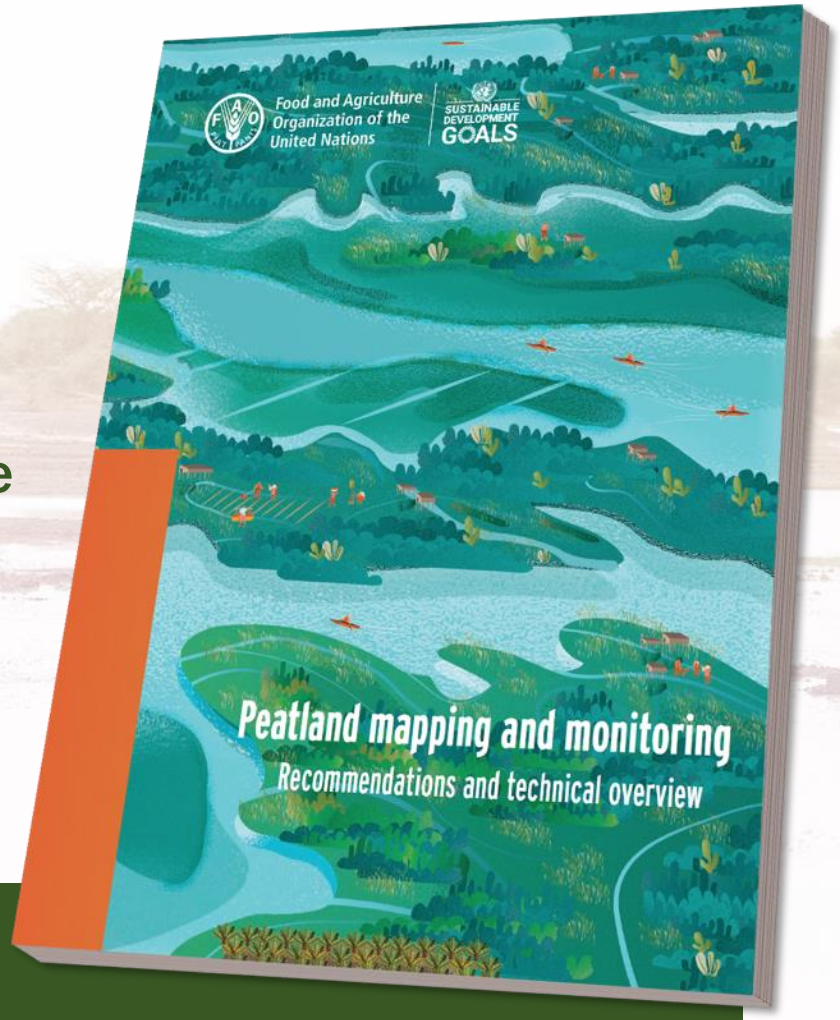
- **Current Status:** Peatlands cover only 3% of the world's surface yet contain 30% of all land-based carbon, dramatically underscoring their pivotal role in global climate regulation.

- **Risks:** Their degradation, by drainage or fire or other forces, triggers their conversion from slow carbon sinks into fast sources capable of releasing carbon stored over millennia in a few decades.

- **Needs:** to avoid their degradation and effectively plan their restoration, peatlands should be urgently mapped and monitored.

# Mapping peatlands

- In 2020 FAO launched Peatland mapping and monitoring
- Mapping peatlands can help countries to plan and better manage their land, water and biodiversity, mitigating climate change and adapting to it more effectively
- FAO has developed a state-of-the-art peatland restoration monitoring module (SEPAL platform).




**Case in Indonesia**

The module was successfully implemented for the first time in Indonesia by the Indonesian Peatland Restoration Agency and Ministry of Environment and Forestry. The peatland monitoring module provides timely information about soil moisture trends to help detect drainage and monitor restoration efforts.

# Example C: Inland fisheries

- Inland fisheries (IF) provide an important source of nutrition, food security as well as micronutrients.
- They are under increasing threats arising from far reaching changes to the aquatic environment arising from human activities

# Wetlands and Land use planning:

## tool to address reclamation

- Approximately 35% of the world's wetlands have been converted to other land uses since 1970, with agriculture being one of the main drivers of change.

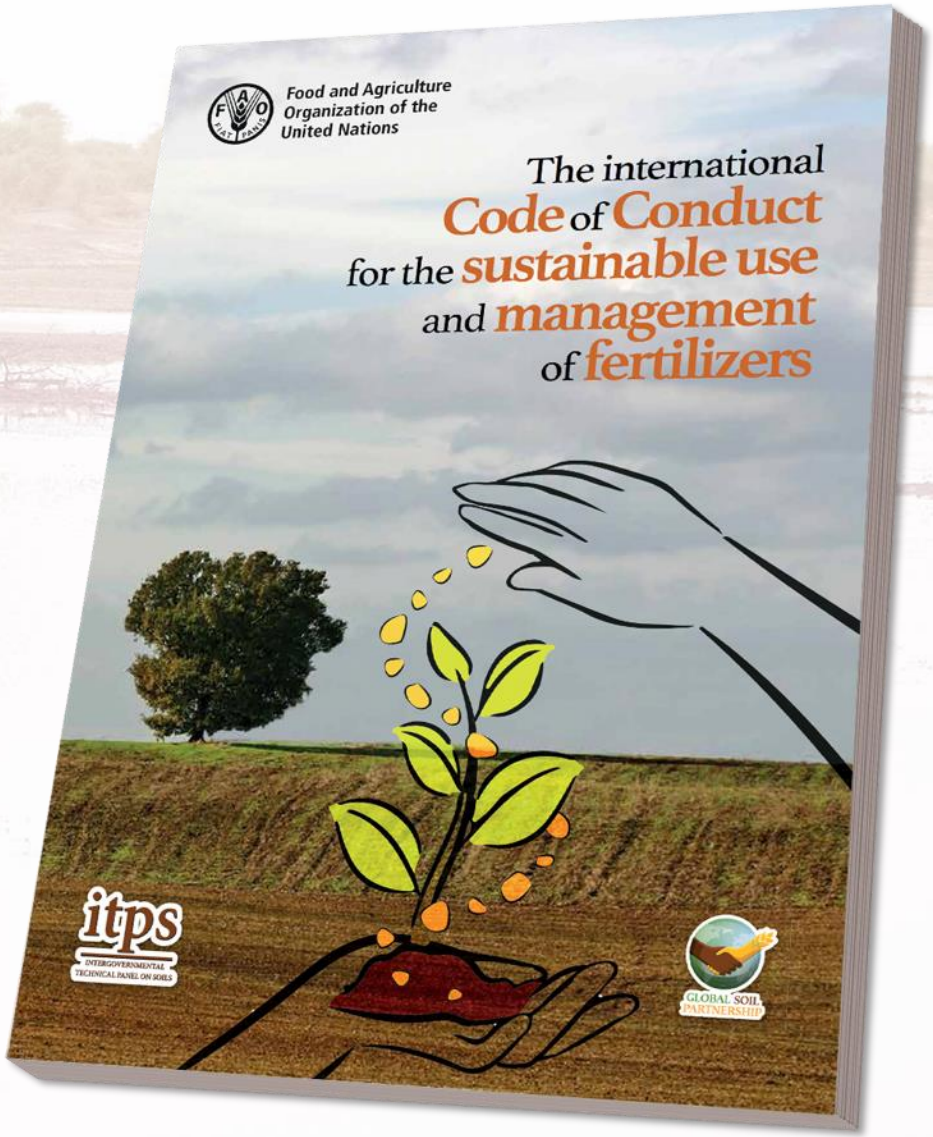
Cases:

1. Canada Alberta's Land Use Framework to protect wetlands
2. National Redline of Wetlands Use

# Fertilizer Code to reduce pollution to wetlands

The problem: The high use of fertilizer within or near wetlands increases surface water and groundwater inputs of nitrogen and phosphorus to wetland ecosystems resulting in nutrient enrichment that can have significant negative ecological effects

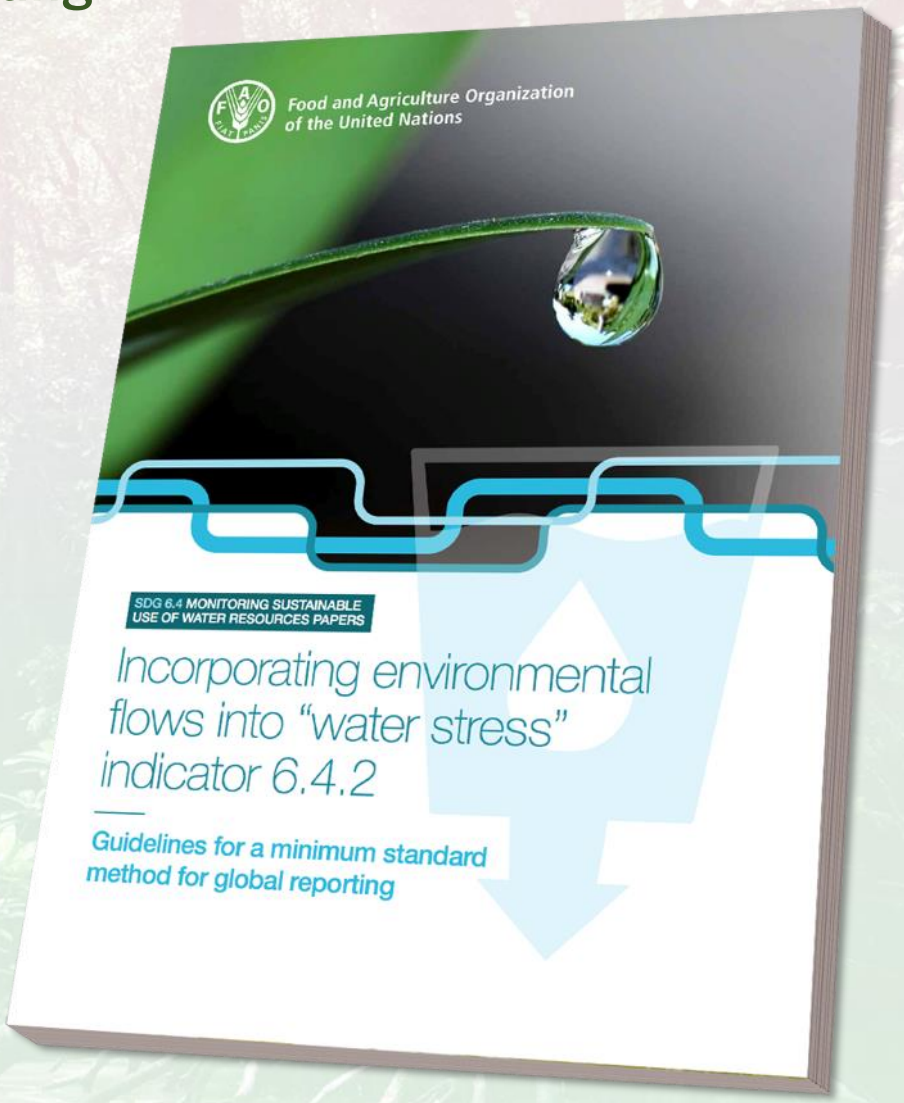
The solution: FAO's Fertilizer Code was created to promote the responsible and judicious use of fertilizers to **prevent misuse, underuse and overuse.**



# Incorporating environmental flows into water stress indicator 6.4.2

## Guidelines for a minimum standard method for global reporting

- Created to assist countries to participate in the assessment of SDG 6.4.2 on water stress by contributing data and information on environmental flows (EF).
- Outlining the minimum standard method based on the Global Environmental Flows Information System (GEFIS)
- Encourages countries to make use of their own national and subnational data to validate the FAO global dataset calculated using the minimum standard method, and add additional information to their Voluntary National Reviews on the SDGs.
- Helps to provide a significant opportunity to underscore how environmental flows underpin SDG 6 and many other SDGs



# Summary

- Sustainable rice paddy farming has positive ecological and economical effects
- Peatlands should be urgently mapped and monitored to avoid degradation and their restoration should be effectively planned
- Land resource planning tools can be used for sustainable land resource management
- FAO's fertilizer code should be implemented in rice paddies and aquaculture for environmental protection
- The NRE water scarcity initiative supports countries through 'innovation' in the mechanisms of cooperation and coordination
- Guidelines for a minimum standard method for global reporting provide a significant opportunity to underscore how environmental flows underpin SDG 6 and many other SDGs

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# THANK YOU!

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