# Wetlands reduce drought

## *Ensuring the wise use of wetlands to keep the planet cool*

## Introducing the Convention

*The Convention's mission:*
"the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world".

*through 3 pillars*

**International cooperation** on transboundary wetlands, shared wetland systems and shared species.

**Wetlands of International Importance** – over 2,200 Ramsar Sites in 169 countries, covering over 215 million hectares

**Wise use of ALL wetlands**: "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development"

*through…*

national plans
policies and legislation
management actions
public education

*Vision for the Fourth Ramsar Strategic Plan 2016-2024:*

"Wetlands are conserved, wisely used, restored and their benefits are recognized and valued by all"

The Plan highlights the urgent need to restore degraded wetlands, with priority to those that are relevant for biodiversity conservation, disaster risk reduction, livelihoods and/or climate change mitigation and adaptation.

**Wetlands** are **vital** for **human survival**. They are **among the world's most productive environments,** on which countless species of plants and animals depend.

The ecosystem services that they provide include **flood and storm surge protection, groundwater recharge**, and **drought mitigation**.

Extreme climate events (including drought) are projected to increase in frequency and intensity, and it is critical to maintain the ecological character of wetlands to help mitigate and adapt to these impacts

*…BUT …*

**Wetlands are disappearing** at an alarming rate: by around two-thirds in the 20th century, due to causes including:

- Conversion of land for intensive agriculture
- Conversion for building, infrastructure and industrial use
- Impacts of climate change
- Over-exploitation of water and other wetland resources

*…AND THIS IS CAUSING…*

- Disruption of hydrological cycles
- More frequent floods and droughts
- Land degradation and loss of productivity
- Significant carbon emissions

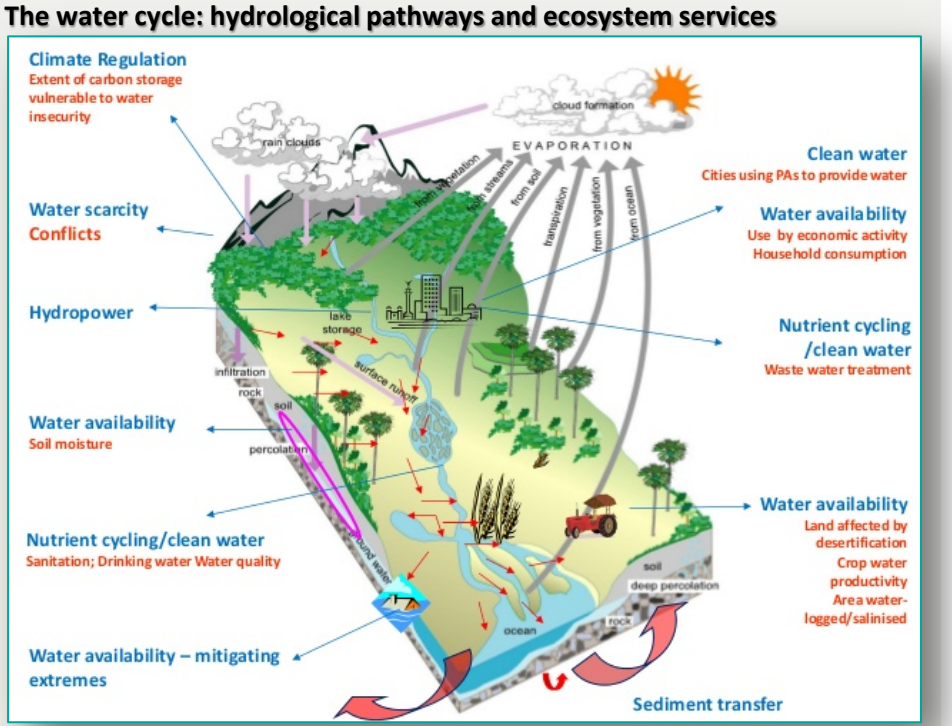
## What should we do?

- Use wetland infrastructure to reduce the risk of slow-onset drought events. The conservation of wetlands and the maintenance or restoration of their ecological character are crucial in coping with drought and therefore should be accounted for in national drought management policies. These policies should incorporate guidance and indicators by other MEAs linking wetlands, biodiversity and climate change.
- Take action across a range of government sectors to prevent wetland loss and encourage integrated water resources management.
- Build institutional synergies, increase awareness of the need for action and develop capacity.
- Use wetland monitoring tools to warn of slow onset drought events:
  - periodic updates on the ecological character of Ramsar Sites;
  - national wetland inventories;
  - indicators of wetland extent and earth observation tools.
- Manage and restore wetlands, as part of contingency planning to mitigate the impacts of natural phenomena such as floods and to provide resilience against drought.
- Incentivize sustainable agricultural practices which maintain and restore the ecosystem services provided by wetlands. Preserve biodiversity and counter climate change by restoring abandoned farmland instead of converting wetlands for agriculture.
- Preserve peatlands so they can continue to store carbon, incentivizing the re-wetting of drained peatlands before they contribute to climate change.

More information at: www.ramsar.org/search

- *The Economics of Ecosystems and Biodiversity (TEEB) for Water and Wetlands*
- 4th Ramsar Strategic Plan 2016-2024
- Ramsar Briefing Note 7: *State of the World's Wetlands and their Services to People: A compilation of recent analyses*
- Ramsar Fact Sheet 8: *Keep Peatlands wet for a better future*
- Resolution VIII.35 *The impact of natural disasters, particularly drought, on wetland ecosystems*
- Resolution IX.9 *The role of the Ramsar Convention in the prevention and mitigation of impacts associated with natural phenomena, including those induced or exacerbated by human activities*
- Resolution XII.13 *Wetlands and disaster risk reduction*

### The water cycle: hydrological pathways and ecosystem services




*The Economics of Ecosystems and Biodiversity for Water and Wetlands. IEEP London, Brussels*

### Peatlands in climate change mitigation

Peatlands store at least 550 Gt of carbon, almost double the amount in the world's forests. When peatlands are drained, organic matter breaks down and large amounts of $CO_2$ are released.

About 15% of the world's peatlands have been drained; they cover less than 0.4% of the global land surface, yet this relatively small area contributes around 5% of global anthropogenic carbon dioxide emissions.

Carbon dioxide emissions will stop when these areas are "re-wetted", with drainage stopped to ensure that the water table does not fall below the peat surface.

### Flood plains against natural disasters

Wetlands mitigate the impacts of floods by absorbing excess water and retaining it or returning it to the water table as a precious resource during times of scarcity.

A river with high embankments is cut off from its flood plain and associated wetlands. Water is forced downstream, and thereby lost from the catchment area. The microclimatic effects of wetlands help to buffer temperatures, maintaining soil moisture and groundwater levels.

Countries are increasingly seeking to maintain and restore flood plains as part of integrated management of river basins.

### Ramsar and UNCCD commit to land degradation neutrality

Agriculture cannot thrive at the expense of wetlands. While wetlands have been converted for food production, one third of farmland has been degraded beyond use, and half of what's still left is moderately or severely degraded.

Returning abandoned farmland to sustainable agriculture is more cost-effective than finding new land, and will help mitigate climatic changes by drawing $CO_2$ from the atmosphere into the soil. Communities will be more resilient to climate change and biodiversity will flourish.

### Accounting for ecosystem benefits in drought management

Adverse changes to wetlands are estimated to result in more than US$20 trillion in lost ecosystem services annually (see Costanza et al, *Changes in the global value of ecosystem services*, 2014). Restoring wetland functions and securing water allocations to maintain the ecological character of wetlands are investments in the natural infrastructure that they provide.

Well-functioning wetlands are more likely to resist extreme weather events than degraded wetlands, and so the wellbeing of these ecosystems should be prioritzed in national drought management policies.