



Report

Water Shocks: Wetlands and Human Migration in the Sahel

This report calls attention to the worsening condition of wetlands in the Sahel and explains how this decline is undermining human well-being and compelling people to migrate, including to Europe.

The rivers, lakes, floodplains and deltas of the Sahel are highly productive and biologically diverse ecosystems, fed by seasonal floods. These dynamic wetlands have long shaped human culture and been the basis for local and regional economies. Tens of millions of people still depend on their vitality.

But these natural assets are degrading, often due to ill-advised economic development projects which divert water resources. Consequently, some wetlands have ceased to be a refuge in hard times and have instead become sources of out-migration, as people look elsewhere for alternative livelihoods.

Wetlands and Resilience

- In the Sahel 20 million people are categorised by the UN as food-insecure, mainly due to lack of water.
- People depend on the Sahelian wetlands for fish, cattle, food, fuelwood, water, medicinal plants, and crops such as rice.
- During the dry season, wetlands become a magnet for pastoralists, and act as a buffer against droughts.
- The squeeze on wetlands has exacerbated conflicts over access to water and productive land, causing social breakdown and armed conflict.

Case Study Findings

- A major dam upstream in Mali means that wetlands along the **Senegal River** can no longer sustain the livelihoods of farmers, herders and fishers. Villages have emptied, and increasing numbers of people have headed for Europe.
- Flooding in the **Inner Niger Delta** in Mali has receded due to upstream water offtakes. Disputes among herders, fishers and farmers are increasing. More than a million people could be permanently displaced because of operations of existing and proposed upstream dams and water diversions.
- Upstream water withdrawals for irrigation have led to massive environmental degradation of **Lake Chad** and its surrounding wetlands. Scarcity of water resources has caused conflict and the forced migration of more than 2.3 million people since mid-2013.
- **The Lorian Swamp** in Kenya has historically provided sustenance for pastoralists from far and wide in the dry season. The swamp is now a source of out-migration, since diversions of water upstream, combined with over-abstraction of groundwater beneath the swamp have caused it to desiccate.





The Economic Cost of Losing the Sahelian Wetlands

Dams in northern Nigeria have greatly reduced the Hadejia-Nguru wetland, with economic losses to communities from the disruption of livestock grazing, crop cultivation, fisheries, fuelwood, regional aquifer recharge, and migratory waterbird habitats. **The benefits of the floodplain ranged from approximately US\$9,600 to US\$14,500/m³ of water, compared with US\$26 to US\$40/m³ for the irrigation project.**

The Manantali Dam on the Senegal River has resulted in the disappearance of up to **250,000 hectares** of seasonally flooded land, a massive loss of downstream natural flood irrigation. **The drying out and siltation of the river's large coastal delta has resulted in the loss of 90 per cent of its fisheries.**

The combined impact of the **Selingue reservoir and offtakes for irrigated agriculture** from the Rivers Bani and Niger has been to reduce the inflow to the **Inner Niger Delta of Mali** by 16% in a relatively dry year, causing a **reduction of the flood extent by 1400 km², reducing livestock, fish and rice production for around 2 million people.** Models predict that construction of the planned

Fomi Dam in Guinea and extension of the Office du Niger irrigation scheme would lead to impacts resembling catastrophic drought with frequency shifting from 1 in 20 years, to approximately 1 in 4 years. This could **cut fish catches in the delta by 31 per cent and reduce the pastures by 28 per cent.**

Cameroon's Logone River floodplain once supported more than **130,000 people** through complex floodplain livelihood systems. **Annual flooding contributed 10.7 million euros a year to the local economy.** But in 1979, the **Maga Dam** and a water diversion scheme for rice cultivation projects diverted 70 per cent of the river's flow. The sharply reduced flooding damaged downstream flood-recession agriculture, dry-season pastures, fisheries and wildlife tourism. **The net annual economic costs of the changes exceeded 2.5 million euros a year.**



Wetlands International calls for recognition of Sahelian wetlands as critical natural assets on which the resilience of rural and ultimately also urban communities depend.

Safeguarding and restoring these wetlands needs to be adopted as a key strategy to address land degradation, food and water security, climate change, conflict and involuntary migration in the region.

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