

## The Niger, A Lifeline

### Values

Inland deltas of riverine floodplains are special forms of freshwater ecosystems. Especially in semi-arid regions where annual rainfall fluctuates considerably, such deltas are vital to ecological productivity. A good example is the Inner Niger Delta in the Western Sahel zone in Africa, which supports more than a million people. They make their living as fishermen, cattle breeders or farmers, using the annual rising and receding of waters in the river and its floodplains. The delta is one of the largest Ramsar sites in the world, and is considered a hotspot of biodiversity. It supports up to 4 million staging waterbirds, their population size varying according to the hydrological and ecological conditions.

### Issues, Trends & Changes

Two dams have been constructed upstream in the Niger river. Although these dams have improved irrigated agriculture, economic benefits vary widely depending on the water flow: in dry periods the dams may decrease the water flow up to 30%. This has strong adverse effects on the downstream multifunctional use of the water.

A third dam is being proposed to further stimulate economic growth. However, it is questionable whether the resulting economic benefits of this new dam will be higher than the investment costs, when expected losses in ecological productivity downstream are taken into account.

### Response

An assessment of the hydrology, ecology, fisheries and agriculture analysed whether development efforts focusing on new infrastructure would prove economically and ecologically worthwhile.

In the Upper Niger in Mali, Wetlands International and RIZA (Directorate-General for Public Works and Water Management, The Netherlands), along with a wide range of partners, have developed a decision-support system for river management, in which ecological and socio-economic impacts and benefits of dams can be analysed in relation to different water management scenarios.



Partners in the project include Direction National de l'Hydraulique, Direction National de la Conservation de la Nature, Institut d'Economie Rurale, Ministère de l'Environnement, Office de Niger, Operation Pêche Mopti, Operation Riz Mopti, Operation Riz Segou, Altenburg & Wymenga, Alterra, Wageningen-UR, Instituut voor Milieuvraagstukken, WL | Delft Hydraulics

### Benefits to nature and people

Project analysis shows that additional financial costs of a third dam would only partly be compensated by additional electrical and irrigation benefits.

Moreover, the negative effects downstream would be considerable. Building a third dam would reduce fish trade by 37%, the maximum number of livestock is likely to be reduced by 10-15%, and up to 36% loss of ecological values is expected, with probably an even higher impact during low floods.

It can be concluded that in the case of the Inner Niger Delta, development efforts should focus on improving the efficiency of existing infrastructure as well as economic activities in the delta itself, rather than investing in new infrastructure.

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Wetlands International has a history that goes back 50 years – 50 years of collaborative support to conservation and wise use of the world's wetlands and their biota, combining expertise in wetland research, management and capacity building, always emphasising the critical links between wetlands and human well-being. Further information and contact details can be found at: [www.wetlands.org](http://www.wetlands.org)