



## **Wetlands International findings on Water and Climate Change Adaptation**

### **Maintaining wetlands as fresh water stocks in the Sahelian zone**

Wetlands International and partners have been engaged in improving climate change adaptation planning, policies and practices in relation to fresh water management in Africa. A good example is the work in the Inner Niger Delta (IND) in Mali, the inland wetlands area fed by the water of the Niger River. Building on a quarter century of work related to maintaining this precious fresh water wetland in the Sahel, we have developed approaches, measures and tools on climate change adaptation planning and practices in the water sector.

### **I. Assessment and Research: Impact of changes in water availability due to dams and climate change**

**Description:** The Inner Niger Delta (IND) is a large area of lakes and floodplains in the semi-arid Sahel area of central Mali, just south of the Sahara desert, covering up to 30,000 km<sup>2</sup> (depending on flooding) on which up to one million people depend for their livelihoods. In 2006, Wetlands International conducted with partners the valuation study 'The Niger a Lifeline'. This study showed the economic value of the Inner Niger Delta, and the adverse economic impacts of some upstream developments such as the Fomi Dam in Guinea. As the climate changes in the Sahel, this will have an additional impact on rainfall and evaporation. This impacts the flooding of the Inner Niger Delta and, therefore, also its ecological and economic functions. Wetlands International and partners conducted an assessment in 2010 on the relationship between wetlands, infrastructure development and climate change adaptation.

#### **Results achieved:**

- Overview of the economical value of the Inner Niger Delta produced.
- Overview of the combined hydrological and economic impacts of climate changes and dams combined.
- Need for more optimal water allocation and climate proofing are firmly on the national and regional policy agendas.

More information: [www.wetlands.org/IND](http://www.wetlands.org/IND)

**Challenges:**

- How to reach food sufficiency by managing dams and taking into the communities living downstream. In the Sahel water is matter of life and death mainly during drought years.

**Lessons learned:**

- Improving the management of existing dams is more cost effective and leads to increased efficiency of water resources management than building more new dams.

**II. Flood prediction tool: OPIDIN**

**Description:** The OPIDIN is a flooding forecast tool which can also serve as an early warning system. It was developed by Wetlands International and other partners including Altenburg & Wymenga, and in cooperation with: Governor Office Mopti, Regional Director of Hydraulics, Agriculture, Fisheries, Livestock, socio-professional groups and national and international NGOS. Given the changes expected in the Inner Niger Delta due to the ongoing changes in climate, predicting the flood will become increasingly important. OPIDIN may function as an early warning system and thus be an essential tool for local populations, including fishermen and farmers, to help achieve food security.

**Results achieved:**

- Prediction of flooding for improving: a) farming systems: fisheries and cattle breeding (availability of bourgou fields for covering 8 months), b) saving people's lives and property.
- Provision of a calendar for cattle crossing at the different parts of the IND to the Governor Office of Mopti (intimately linked to the flooding pattern) which has high national and international cultural, touristic and economic values.
- Strengthening capacities of network of partners in Mopti region for the uptake and implementation of the OPIDIN tool.

**Challenges:**

- Upscaling OPIDIN to all of the IND region.
- Acceptance of OPIDIN at the national level as the tool for predicting floods in the IND.

**Lessons learned:**

- Applied flood predicting tool could help regional and local decision makers organizing national and international cultural event, cattle crossings which provide income to many stakeholders including local communities, but also to avoid conflicts between farmers and herders.
- Flood predicting tool (OPIDIN) coupled with local knowledge improved local communities farming systems.

### **III. Adaptive Actions on the Ground**

**Description:** Wetlands International conducted several demonstration projects in the Inner Niger Delta in order to reduce the pressure on the delta and its shrinking water resources. We worked with local communities, involving them through use of the micro-credit tool 'biorights' to change their livelihoods from (over)fishing to farming and to restore degraded areas. Flood forests were replanted and clogged up streams were opened. These on the ground actions distinctly illuminated the importance of engagement of local communities to keep the delta alive despite stresses including climate change.

#### **Results achieved:**

- Local people learned and exchanged information on how to maintain the natural resource stocks of the delta, and secure their own livelihood/ income generation activities despite changes in water availability.

### **IV. Capacity Building**

**Description:** Based on our experiences and the lessons learned in the Inner Niger Delta, Wetlands International spearheaded the development of an Ecosystem and Community based Climate Change Adaptation Training Package which has been very well received. A core component of the training package drew on the experiences of incorporating wetland management, resilient ecosystems, and the wider upstream and downstream socio-economic impacts of infrastructure development into national and regional planning policies and projects. Contributing partners included WWF-US, Conservation International, Co-operative Programme on Water and Climate Change, Wageningen University, the African Institute of Capacity Development and a host of other contributing organisations such as Oxfam America and IUCN were also involved in the development.

#### **Challenges:**

There is still a need to contribute to a fuller understanding of tools to help the current pool of trainers engage their own local communities at all levels, especially decision makers, on climate change adaptation. In addition, there is still much misunderstanding about the role of Strategic Environmental Impact Assessments and assumptions that they are only suited and related to environmental projects.

#### **(Interim) Results achieved:**

Twenty-seven participants were invited from various organisations, cutting across relevant sectors, institutions and countries within Asia, Latin America and a majority from Africa. An abridged version of the course was developed and provided to high level policy makers drawn from across the African continent. This high level policy makers dialogue recognised the importance of Strategic Environmental Assessments and more strategic, integrated approaches in

climate change adaptation planning. A high level communiqué indentifying and providing endorsement for the approaches of Wetlands International and partners, the role of SEAs and the need to integrate functional ecosystems into climate change and disaster risk reduction planning was issued from this meeting ([link here](#)).