



MALI: FLOOD MANAGEMENT - NIGER RIVER INLAND DELTA

1. Location of the study:

The Niger River Inland Delta constitutes one of the largest wetlands in the world and is situated in the sahelian zone in Mali.

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3. Brief description of flood management practice

The Niger River Inland Delta has an area of more than 60,000 km². Its southern part is constituted by a vast alluvial plain subject to widespread flooding; in wet years more than 20,000 km² are inundated. In the northern part the floods mainly affect the major beds of rivers and channels; in addition, a number of temporary lakes on both banks of the Niger River are filled during high floods, which can then cover an area of some 14,400 km². Besides being inhabited by about 1 million people, the Delta represents one of the major producing areas of the country; the three main production systems relate to livestock, agriculture and fisheries.

The floodwater plays a determinant role in the regeneration of the Delta's natural resources, which form the basis of the different production systems. In addition, it makes the navigation on the major rivers and channels possible, thus facilitating the access to the different rural areas. While exceptional high floods may cause damage to habitats, irrigation and in cases losses of life, extremely low flows like those in 1984 can be disastrous due to the famine, the loss of livestock etc. they may cause.

Besides the traditional customs and rules which since 1818 years are governing the life and production activities in the Delta, there are state laws and rules concerning the protection, use, development and conservation of water resources. Policies aiming at an integrated water resources management are currently being elaborated in the framework of the National Programme of Rural Infrastructure. There exists already a national water policy, which covers the management and prevention of flooding, water shortage and accidental pollution. In 2002 as part of the Water Code, the problems related to flood management are considered and the responsibilities defined of the government and of decentralised units such as communes, district councils and regional councils.

There are a number of national institutions responsible for different components of the water resources management; their actions are being co-ordinated by the *Inter-ministerial Co-ordinating Committee for the Water Sector and Sewerage*. A cell for the implementation of the concept of Integrated Water Resources Management (IWRM) was created in 2002 under the National Administration for Hydraulics (DNH).

4. Key issues

The ecosystem of the Niger River inland delta as well as the traditional farming systems that exploit its natural resources in the flood plains and the lakes depend directly on the extent of the annual river floods. Any extension of planned irrigation schemes upstream of the delta or the installation of dams is going to have an impact on the ecosystem and thus on the traditional farming systems.

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The governments of Guinea and Mali are also planning the construction of a number of dams on the upstream catchment areas for the generation of hydropower or the development of irrigation schemes.

The structural measures are efficient in ensuring to a certain extent the agricultural production, but are not always adapted to the highly variable hydro-climatic conditions of the Delta. Improving the design and concepts of this infrastructure constitutes a big challenge for the rural development of this area.

The droughts but also the relative abundant floods of the middle and late nineties have brought about an increasing demand for information from the administration as well as the populations regarding flood forecasting and an early warning system. It is expected that shortly these systems can be made operational for the Delta.

Existing legislative texts and rules related to the management of water need to be adapted to provide a more comprehensive and integrated view of the constitution and the uses of water resources. In addition, the on-going process of decentralisation with the creation of *communes* will modify some of the responsibilities related to water resources management, which needs to be reflected in the laws and regulations.

5. Relevance to the concept of IFM

The study covers the following aspects of IFM to varying extents:

Water cycle as a whole

- Aspect 4 - Managing the whole water cycle (flood/drought management plans)
- Aspect 6 - Effective use of floodwater by maximizing positive aspects of floods

Integration of land and water management

- Aspect 2 - Land and water management
- Aspect 3 - Laws and regulations for flood and water management
- Aspect 12 - Multi-functional solutions (engineered wetlands, flood alleviation)
- Integrated river basin management approach to flood management

Best mix of strategies

- Aspect 10 - Best mix of structural and non-structural measures

Participatory approach

- Aspect 7 - Community-based approach
- Aspect 9 – Effective linkage between existing institution
- Consideration of gender-based and cultural requirements

Integrated hazards impact mitigation

- Early warnings and forecasts



6. Comments

- (i) Potential strong points of the case study
 - A good example of IFM in practice
- (ii) Potential for practices mentioned to be transferred/applied to other regions with geophysical and socio-economic characteristics)

It provides the traditional flood management practices. These ideas also could be incorporated in the IFM with noticing that these are site specific to the condition of the river and to the activities of its inhabitants and based on many years of tradition.