



## CASE STUDY

# Transboundary: Establishing a transboundary organisation for IWRM in the Senegal River basin



## Summary

The Senegal River has seen considerable migration in view of worsening drought and desertification. It is subjected to threats such as loss of arable land, and pollution from waste. To address the problems and realise the potential of the basin, the Senegal River Development Organisation was established by three of the riparian states. This case gives important insights into how an institutional and legal infrastructure can be build in stages.

## Background

The Senegal River Basin is shared by Guinea, Mali, Mauritania and Senegal. The Senegal River is about 1800 km long with a basin area of 289 000 km<sup>2</sup> and a mean annual runoff of 24 billion m<sup>3</sup>. The population of the basin is about 16% of the total population in the three countries. The basin has seen considerable migration of people in view of worsening drought and desertification which the region has been subjected to in the past two decades. Annual rainfall varies from 800 to 200 mm over the basin, with high variability between wet and dry season and also from year to year. The past two decades has witnessed a phenomenon of decreasing mean annual rainfall as in the rest of West Africa, particularly the Sahel region. The environmental threats include persistent drought, desert encroachment, loss of arable and pasture land, and pollution from industrial and domestic wastes. The potential of the basin include 375,000 ha for irrigation and 200 MW for hydropower generation and navigation is 900 km.

It was clear to the Member States that regulation of the river downstream and upstream would lead to increased production in the agricultural, industrial, transportation and energy

and health sectors. The co-operation to develop the basin on an integrated basis started in the colonial era when the Senegal River Basin Development Mission was set up in 1935. Achievements were limited until the countries gained independence in 1960s. After independence, the four countries (Guinea, Mali, Mauritania and Senegal) signed the Bamako Convention in 1963 for the global development of the Senegal River Basin. Under this Convention the Senegal River was declared an international waterway in 1964 and an Inter-States Committee realized the need for the Senegal River to be accorded and international river status and to regulate the river upstream by building a storage reservoir.

To achieve the goal of integrated development of the basin a regional development plan was developed over the years (1963-1972). This plan defined the objectives, areas of emphasis to achieve the objectives, the productive activities to be promoted, the needs for regional and national economic integration, and corresponding integrated management of the water resources.

### **Actions taken**

To implement the Developments which were conceived between 1963-1972, the Heads of State and Government in 1972 decided to terminate the 1963 Convention on the global development of the Senegal River Basin. The purpose was to replace it with an organisation and charge it to raise the necessary resources to build the common works, exploit works to meet production in the social and economic sectors, and ensure that the environment retains its integrity. To address the problems and to realize the potential of the basin, the Senegal River Development Organisation (OMVS) was established by the three of the four riparian states in 1972. The aims were to jointly:-

1. Promote inter-country co-operation;
2. Co-ordinate technical, economic studies and other activities related to the Senegal river development such as navigation, irrigation, hydropower generation, environmental protection and conservation.
3. Regulate river flow for irrigation, navigation, flood control, power generation, domestic and industrial water supply and other purposes.

The Secretariat is financed jointly by the three countries following an agreed formula. Also the loans for the two dams are being repaid on a formula based on the proportion of benefits of the project to the three countries.

The following actions were taken, namely to establish and operationalise the Statutory Agency the mobilization of resources for pre-investment studies, and the adoption of Conventions on common works. Side by side with the establishment of the High Commission, the organisation set out to mobilize funds to complete studies and also pre-investment studies started by the Interstate Committee from which it took over in 1972. By 1974 \$12 million had been mobilised for prefeasibility studies, \$20 million on the engineering studies of the Diama and Manantali Dams. For the construction the dams a financial package of \$700 million was raised from bilateral and multilateral financing sources.

After the completion of the Dams, the following actions had to be taken to realize the benefits of the flow regulations:

- Establish mechanisms and procedures at regional and national levels for integrated

socio-economic development.

- Set up agencies to manage the common works (barrages) and associated works in terms of operations, maintenance and renewals.
- Operationalise the Permanent Water Commission.
- Establish a Unit to deal with the environmental problems created by the construction of the dams, creeping desertification and land degradation of the headwaters of the Senegal River in the Futa Jalon mountains.

## Outcomes

The case demonstrates how an institutional and legal infrastructure can be built in stages from the time of regulating the flow of a shared water resource to the time of managing it and making it available to various sectors in the riparian member states to the stage where water is used for farming, power generation, navigation, etc. and to meet ecosystems needs and combat negative impacts of development on the environment.

### Benefits:

- Presently power is being generated. It is being supplied to Mali and it is about to reach Mauritania and Senegal.
- The irrigation is in the hands of local communities who are organised and assisted with finance and other facilities to carry out their farming activities.
- Domestic and industrial water supply to towns and villages by the control of sea water intrusion into the river.
- River navigation from Bakel to St. Louis. The port and other landing and navigation infrastructure are being upgraded.
- Flood control in the upper valley and delta areas of the basin.
- Release of water for ecosystem functions in the Delta area which has been environmentally disturbed by the building of the Diama Dam.

The Permanent Water Commission established in 1978 has been provided with Regulations to support it, to advise and make recommendations on:

- Principles and modalities for the fair distribution of the Senegal River waters;
- The construction of water utilization infrastructure of development projects likely to sensibly modify characteristics of the Senegal River flow
- Regulating the fair use of water after river training; o Control over the utilization of the Senegal River waters with respect to quality and quantity before and after the river training.

### Problems:

- Cost recovery and loan repayment: it has taken more time to mobilize funds to complete the infrastructural works to exploit fully the benefits brought about by the two dams. The flow of benefits have accordingly been delayed. Revenue to pay for loans has also been delayed and the burden is being borne by the Member States.
- Political: The political and ethnic conflict which occurred between Mauritania and Senegal has delayed the mobilization of funds to keep activities on programme.
- Environmental: Water borne diseases; Land degradation; Encroachment of the desert southward due to population pressure.

## **Lessons Learned**

The declaration that a shared basin must be jointly managed by the riparian states as a common resource for their equitable benefit helps to create a common vision among the states, and encourages their co-operation and need to consult.

If not all the riparian states are able to participate in the programme, it is expedient to start the process with those who can with a view of eventually obtaining full participation.

Environmental issues should include the maintenance of the integrity of the aquatic ecosystems as well as specific environmental impacts from infrastructure. A river flow simulation model is useful for planning, and for maximising operations of facilities.

Early establishment of a credible regional development programme enables the organisation to focus on implementation rather than carrying out studies. Commitment is easier to obtain when Member states are aware that their financial sacrifices will soon lead to physical development.

Projects will take time to become viable economically and financially, and Member States need to appreciate that they will be responsible in servicing debts which the organisation may owe.

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## **Supporting Materials**

GWP West Africa

Transboundary: Establishing a transboundary organisation for IWRM in the Senegal River basin

### **Related IWRM Tools**

Policies with Relation to Water Resources, Regulatory Bodies and Enforcement Agencies, Transboundary Organisations, Basin Organisations, Impact Investment Market Maps

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