

# FIDIC-GAMA 2017



## Conference on Infrastructure

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### African Partnerships for Sustainable Growth

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**Integrated Water Resources Management, River Basins Organisation and sustainable development of West Africa**



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## INTRODUCTION

Two thirds of the world's major rivers are shared by several states. More than 300 rivers cross national boundaries. At present, West Africa uses substantially less water than elsewhere but pressure is rapidly increasing from competing sources such as population growth, urbanization, agriculture, industrialization so a balanced approach should be taken to water management in the different transboundary basins, placing climate change in context, alongside other environmental and human factors

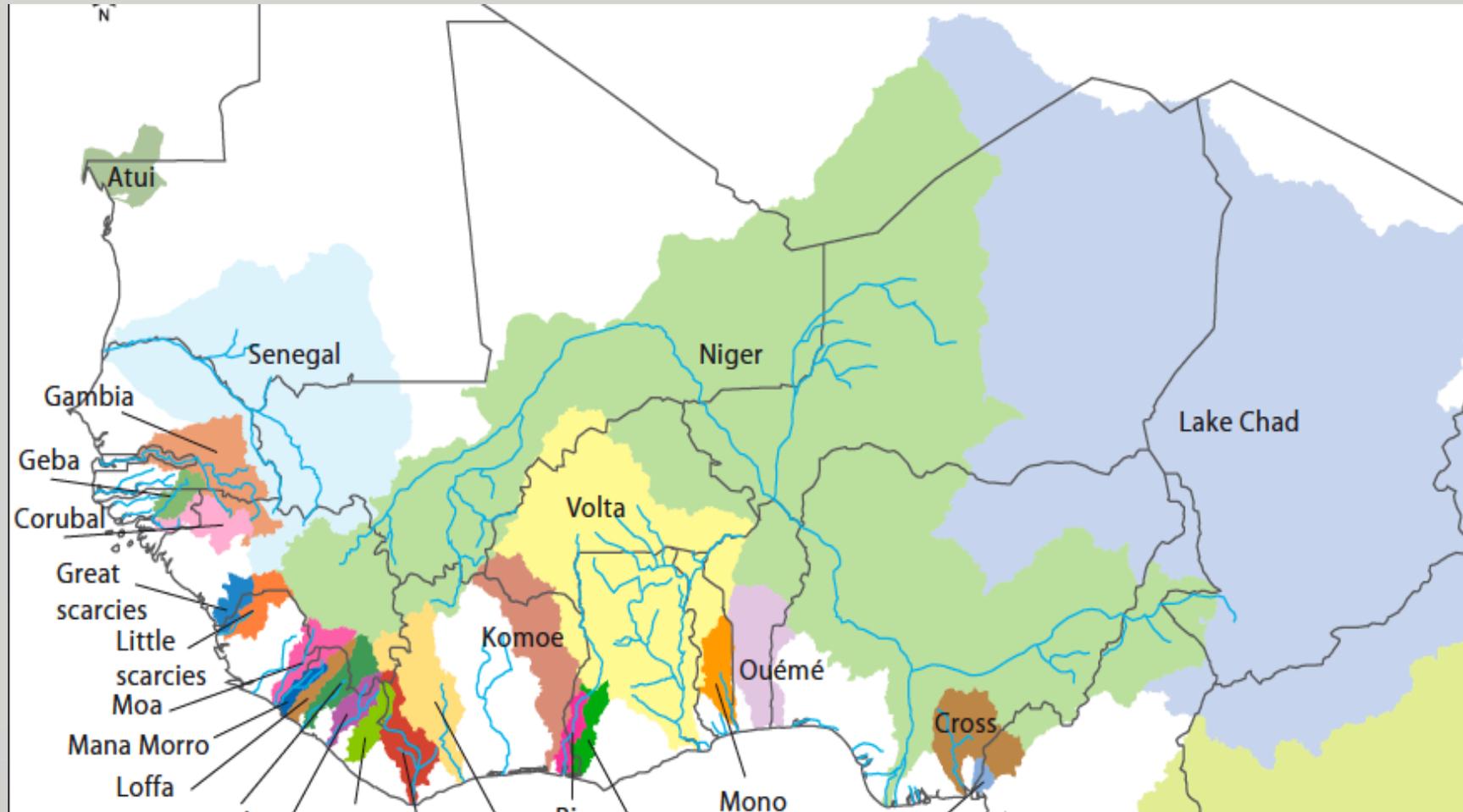


# The main Rivers of West Africa

- **The Niger river : 4,200 km long**
- **The Senegal river : 1,800 km long**
- **The Volta river : 1,600 km long**
- **The Gambia river : 1120 km long**
- **Other medium Rivers : Comoe, Mono, Oueme, Mano, Kabi, Kolente, Koliba, Komadugu-Yobe, and Cayanga/Geba.**



# RIVER BASINS IN WEST AFRICA





## GROUNDWATER IN WEST AFRICA

In West Africa, like the surface water, groundwater is characterized by its cross border dimension. Out of the 40 most important aquifers identified in Africa, 10 are entirely located in West Africa and shared by at least two countries of the sub-region. So, in the context of water resources scarcity in the face of climate change, West Africa trans-boundary aquifer resources management in a regional framework is absolutely necessary.



# TRANSBOUNDARY AQUIFERS IN WEST AFRICA





## Transboundary Groundwater Management

- Need of strategic partnership at national and regional levels,
- Need to scale down the gap in knowledge and harnessing of the aquifer systems,
- Need of groundwater hydrodynamic characterization, database information, mapping and surveillance network,
- Need of protection measures for pollution,
- Need of cross-region synergy actions, requirement of strong institutions at both national and regional level



# **SUCCESS STORIES IN COOPERATIVE RIVER BASIN MANAGEMENT AND SUSTAINABLE DEVELOPMENT**



## Niger River Basin Authority (NBA)

The basin population is estimated at more than 150,000,000 inhabitants. The basin offers clear assets in terms of hydro agriculture, fisheries, energy as well as economic and social development.

However, repeated droughts over the past three decades, demographic pressure on natural resources, lack of investment and policies that show little regard for environment preservation are accelerating soil and water degradation as the river bed silts up, floating weeds invade the river, ecosystems are damaged and tension and conflicts among stakeholders





## GOAL OF NBA

In 1964, the countries sharing the basin decided to create a Niger River Commission that became the Niger River basin Authority (NBA) in 1980.

The goal of the Authority of the Basin of Niger is to promote the Co-operation between the member countries and to ensure an integrated development of the basin of Niger in all the fields of hydraulics, energy, agriculture, livestock raising, fishing, sylviculture and forestry, transport and communications, industry.



## SHARED VISION

The Shared Vision adopted by the extraordinary session of the NBA Council of Ministers held in Abuja in May 2005: « ***The River Niger Basin, a common space of sustainable development through an integrated management of water resources and related ecosystems for an enhancement of the living conditions and the prosperity of the populations by 2025.*** »



# Sustainable Development Action Plan (SDAP) of the River Niger Basin

The sustainable Development Action Plan (SDAP) of the River Niger Basin constitutes the reference strategic document which defines and must orient the shared development process among the NBA member countries. The priority areas of the SDAP are (i) *the conservation of the ecosystems of the basin*, (ii) *the development of socio-economic infrastructure* and (iii) *capacity building for the actors*.



# THE CONSTRAINTS

- ✓ Insufficient regularization of the Upper and Lower Niger;
- ✓ Under-exploitation of the hydro-power potential;
- ✓ Uneven distribution of surface water resources as compared to development zones;
- ✓ Insufficient knowledge of ground water resources;
- ✓ Strong dependency of the Inner Delta and Maritime Delta wetlands on upstream discharges;
- ✓ Failure to command the water needs of the ecosystems.



## SENEGAL RIVER BASIN

The Senegal River basin has a total population of around 12,000,000 (85 percent of whom live near the river in basin) and more than 35,000,000 inhabitants in the four countries.

Irrigated agriculture rapidly expanded immediately after the new dams were filled (between 1986 and 1988). Today, irrigation is the motor of development in the basin, notably in the valley and in the delta.



## SENEGAL RIVER BASIN

About 100,000 hectares of land are now cultivated in the basin: 20,000 during the dry season (March-June). Livestock raising has also always been a major economic activity in the basin. Fishing, in terms of the income of the work force that it employs, is undoubtedly the largest economic activity in the basin after agriculture, notably for populations living near the river in the valley and the delta.



# Senegal river basin



Total surface: 289000km<sup>2</sup> , Guinea 11%, Mali: 54%,  
Mauritania : 26%, Senegal: 9%



# SENEGAL RIVER BASIN ORGANIZATION

In 1963, shortly after independence, Guinea, Mali, Mauritania and Senegal signed the Bamako Convention for the Development of the Senegal River Basin, that declared the Senegal River to be an 'International River' and created an 'Interstate Committee' to oversee its development.



# SENEGAL RIVER BASIN ORGANIZATION

In 1968, the Labe Convention created the Organization of Boundary States of the Senegal River (OERS in French, Organisation des Etats Riverains du Sénégal) to replace the Interstate Committee, broadening the field of sub regional cooperation.



## SENEGAL RIVER BASIN ORGANIZATION

The OMVS river basin organization was established more than 4 decades ago by three out of the four riparian states. Two years ago, Guinea returned to the organization. Mali's principal interests are the maintenance of river levels so as to obtain navigable access to the sea and energy produced by the Manantali dam. Guinean, Mauritanian and Senegalese interests converge in power production and irrigation, while Senegal and Guinea seeks to improve livelihoods for local populations. These varied interests are typical of a transboundary water management situation. The Manantali dam, although located in Mali, belongs to all the



## WATER RESOURCES MANAGEMENT

The OMVS's fundamental conventions of 1972 and the Senegal River Water Charter signed in May 2002, which establish its legal and regulatory framework, clearly state that river water must be allocated to the various use sectors. The resource is not allocated to riparian states in terms of volumes of water to be withdrawn, but rather to uses as a function of possibilities. The various uses can be for agriculture, inland fishing, livestock raising, fish farming, tree farming, fauna and flora, hydroelectric energy production, urban and rural drinking water supply, health, industry, navigation and the environment.



# WATER RESOURCES MANAGEMENT

Cooperation in OMVS is based on principals of:

- Solidarity : common, indivisible works and jointly owned infrastructures (1978 convention), financing joint infrastructures (1982 convention), joint loans contracted for development purposes, joint guarantees to reimburse contracted loans and interests, joint management of common infrastructures and assets



# WATER RESOURCES MANAGEMENT

- Equality: all decisions are consensus based
- and Equity: fair allocation of water resources among sectors, proportional water allocation for irrigation, joint exploitation of hydroelectricity potential and shared benefits



## CONCRETE ACHIEVEMENTS

OMVS has some concrete achievements:

- OMVS development program (irrigation, hydropower, navigation), 1972-80
- Joint loan from 12 donors to build dams: Manantali (in Mali) and Diama (Senegal/Mauritania border), 1984
- Diama dam operational, blocking salt water intrusion with irrigation program (375000ha), 1986



## CONCRETE ACHIEVEMENTS

- Manantali hydropower dam completed with irrigation program (1997)
- Joint dams management bodies established (SOOGED and SOGEM), 2000
- Jointly owned Power transmission lines connecting the Mali, Mauritania and Senegal, 2002 and now connecting Guinea
- Private operator (ESKOM) contracted to dispatch the energy produced to national power grids, 2002



## CONCRETE ACHIEVEMENTS

- First basin wide environmental project (the four riparian countries included)
- The river flow regulation all over the years enables an irrigation potential of 375,000 ha from Manantali dam, a long term solution for Dakar (Senegal) critical water supply need (millions people in Dakar are now supplied from the Senegal River), adequate response to Nouakchott (Mauritania) water supply shortage (connection from the Sénégal River), groundwater recharge and ecosystems restoration, river navigation over 900 km (St-Louis- Atlantic Ocean) to Kayes (Mali).



## BEYOND THE RIVER

Jointly owned infrastructure act as catalyst for peace, regional stability enhanced through cooperative framework, mutual confidence and broad bundled benefits foster regional integration by opening new developpement (inter-countries road segments, lift of trade barriers, joint environmental actions)



## CONCLUSIONS

NBA and OMVS are examples of good practices of governance of Transboundary Rivers. Theirs competences exceed the restrictive framework of governance of flows. They are real agencies in charge of economic and social development. It is important to mention some learned lessons from the analysis of their evolution:

- The political will is the key of the success
- Common vision is crucial to move forward
- Solidarity, equality and equity are essential to sustain cooperation

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**Thank you for attending.**



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