

Water Resources Management on the Massili-Siga Basin



PROJECT TITLE:

WATER RESOURCES MANAGEMENT ON THE MASSILI-SIGA BASIN

COUNTRY :

Burkina-Faso

LOCATION :

Mid Nakanbé – Massili -Ziga sub-basin

SCALE OF INTERVENTION :

Territorial

INCUBATION LED BY:



Discharge- Ziga Dam © Boureima Nebie

LOCAL CONTEXT AND ISSUES :

Burkina Faso is located in the Sudano-Sahel region, characterised by variable rainfall (intra and inter-annual) and a considerable level of evaporation that directly impacts the water cycle and runoff. The area is also highly subject to climate change, with a tendency to aridification: increase in average temperatures, decrease in rainfall. These factors concerning the Sahelian region are combined with the impacts of high demographic growth.

The water management challenges facing the competency area of the Nakanbé Water Agency (NWA) are mostly related to mobilising water for sustainable development and to combat poverty, in a situation of water scarcity and multiple usage (drinking water supply, agribusiness and market gardening, mining industry). In addition, erosion, gold mining and bad water management and usage practices have strongly impacted the quality of surface and ground waters, along with the quantity of water available and its replenishment.

The territory covered by the future Massili-Ziga water development and management plan (SAGE) faces all of these challenges, covering the capital



Déversement - Barrage de Ziga © Boureima Nebie

Ouagadougou and the two major reservoirs of Ziga (200 million m³) and Loumbila (42 million M³), in providing potable water to the capital and its surroundings, home to over 3 million inhabitants.

Numerous conflicts exist resulting from competition to use water resources. The NWA, with support from the governors of the three regions concerned, has come up with equitable solutions for allocating these water resources that at the same time guarantee the long-term future of the reservoirs. Sustainable management protocols have been adopted and implemented for these major dams (Ziga in 2014 and Loumbila in 2012). The aim of the protocols is to protect, preserve and safeguard the Loumbila and Ziga reservoirs “against sedimentation, premature eutrophication, and organic and chemical pollution of water bodies”.

The Massili-Ziga territory includes three local water commissions (LWC): the North Massili LWC, reorganised in 2014; the Upstream East Ziga LWC; and the Upstream West Ziga LWC. As part of the implementation of the Massili-Ziga SAGE, the NWA wants to federate the LWCs into a single coordinating body to put the SAGE into action. These LWCs already possess a joint diagnosis of water resources for their territories, produced prior to their set-up.

The deterioration of vegetation resulting from climate change has the effect of decreasing potential groundwater recharge by infiltration.

In addition, it contributes to the degradation of banks on rivers and water bodies and even the disappearance of wetlands. These wetlands, in addition to hosting biodiversity, contribute to groundwater recharge and natural water purification and help prevent flooding.

PROJECT GOALS :

To tackle this issue, the project will be focused on flood management, erosion control, and the preservation/ maintenance of water resources, which are major challenges for the NWA’s area of competency, identified in the water development and management master plan (SDAGE) and the future Massili-Ziga SAGE.

The project’s activities will fit in with two of the long-term objectives of Burkina Faso’s National Climate Change Adaptation Plan:

- Protect people and goods against extreme climate change and national catastrophes
- Protect and improve the operation of natural ecosystems
- Early warning system
- Water resources monitoring

The aim of the incubation project is to foster the multiplication of this type of operation by mobilising “climate finance”.

SDGs TARGETED BY THE PROJECT:



CHALLENGES FACING THE PROJECT:

Silting up and deterioration of banks – Proliferation of invasive plants – Flooding/water resources monitoring – Water pollution – Anchoring of LWCs

SECTORS CONCERNED:

Urban planning – Biodiversity – Circular economy – Water supply and sanitation – Risk management – Rainwater management – Ecosystem protection and management

EXPECTED OUTCOMES:

Nature-based solutions:

- Vegetation engineering
- Erosion control: regulation of lowlands
- Biological, chemical and physical restoration of soils: implementation of Integrated Soil Fertility Management

New Information and Communication Technologies (NICT)

- Decision-aid tools: knowledge-building and decision-making with climate and meteorological services
- Early warning systems
- Databases
- Monitoring networks

Sanitation engineering

- Upgrading, rehabilitation and construction of evacuation networks and dykes

Rainwater engineering

- Set-up of excess rainwater recovery system
- Integrated rainwater management: at the head of the basin, in urban and peri-urban zones
- Decision-aid tool: modelling of runoff and location of risk points, local information and warning system (in connection with the IRD)

Modernisation and reinforcement of governance

- Citizen participation

Set-up of long-term finance mechanisms

- Financial autonomy in rural areas
- Income generating activities (IGAs) for farming, energy, sanitation by-products

Capacity and knowledge building

- Decision-aid tools: knowledge-building and decision-making with climate and meteorological services

Drawing-up of strategies or action plans to adapt to or mitigate climate change impacts

- Reinforcement of stakeholder resilience to climate change

PROJECT STAKEHOLDERS:

Stakeholders involved:

Local inhabitants – Institutional stakeholders – Technical stakeholders

Project leaders:

Nakanbé Water Agency, International Office for Water

Project operators:

3 Local Water Committees

Technical partners:

Directorate General of Sanitation
Directorate General of Water Resources
National Meteorological Agency
Regional Water Directorate
Regional Urban Planning Directorate
Regional Agriculture Directorate
Central Plateau Governorate
Central Plateau Regional Council
Terre & Humanisme
Institute of Research for Development

Other:

ACTEA / Ps-Eau Network
Bureau National des Sols (BUNASOL)
Centre d'Analyses des Politiques Economiques et Sociales (CAPES)

Funder of the incubation process:

Loire-Bretagne Water Agency

ESTIMATED COST OF PROJECTS IDENTIFIED FOR INCUBATION:

>1 million EUR

SHORT-TERM ACTION (3 YEARS)

- Warning system in connection with the IRD's Rain Cell project
- Monitoring network
- Information systems
- Databases
- Vegetation engineering
- Alternative rainwater and runoff recovery systems
- Integrated rainwater management
- Creation of natural flood expansion areas
- Support for municipalities to manage rainwater (municipal drainage masterplan)
- Implementation of techniques to preserve water and soil (stone barriers, small dykes, small filtering dykes, terraces, half-moon technique, agroforestry, dune fixation, etc.)
- Ecological and hydrological surveillance and monitoring of water courses and bodies
- Production and set-up of a programme to restore and protect the Nakanbé

LONG-TERM ACTION (10 YEARS)

- Central network of users and institutional stakeholders
- Local and regional exchanges
- Compensation for market gardeners in easement strips for respecting ecological labels – multi-stakeholder committee
- Local committee (municipal, borough, village, etc.) for managing urban and rural emergencies
- Production of an adaptation and management plan for emergencies at local scale, complying with existing national and local plans
- Local economic model: payment for environmental services – citizen participation in collecting and disseminating information, emergency preparation and management
- Anchoring and federation of LWCs

