



# OKACOM

*The Permanent Okavango River Basin Water Commission  
Comissão Permanente das Águas da Bacia Hidrográfica do Rio Okavango*



## **Strategic Action Programme (SAP) for the Sustainable Development and Management of the Cubango-Okavango River Basin**



# INTRODUCTION

## STRATEGIC ACTION PROGRAMME (SAP) FOR THE SUSTAINABLE DEVELOPMENT AND MANAGEMENT OF THE CUBANGO-OKAVANGO BASIN

The Strategic Action Programme (SAP) is a basin-wide policy framework document for the Cubango-Okavango River Basin (CORB) that lays down the principles for the development of the Basin and improvements of the livelihoods of its people through the cooperative management of the Basin and its shared natural resources.

### The overarching objective of the SAP is

**To promote and strengthen the integrated, sustainable management, use and development of the CORB at national and transboundary levels according to internationally recognised best practices in order to protect biodiversity, improve the livelihoods of Basin communities, and the development of Basin states**

The Permanent Okavango River Basin Water Commission (OKACOM), through its organs, is the primary body for overseeing the implementation of the SAP and coordinating the activities under the different thematic areas as well as maintaining adequate linkages with relevant organizations at the national level.

This objective balances the shared commitments of the Basin states for environmental sustainability, alleviation of poverty and improvement of

the welfare and living conditions of the population through increased economic growth, using the mechanism of Integrated Water Resource Management (IWRM).

The SAP is a mid-term planning document that is designed for voluntary adherence by the riparian states of Angola, Botswana and Namibia. Its contents are supported by and in accordance with their national development plans and the National Action Plans (NAPs) for their part of the Basin that have been developed in parallel with the SAP. Implementation of the SAP is the responsibility of the Basin states independently as component of their NAPs, and collectively as part of OKACOM.

The SAP was developed over three years from 2008-2010, through a consultative process with a wide range of stakeholders from government departments, academic and scientific institutions, civil society, the private sector and community representatives. Implementation of the SAP is the responsibility of the Basin states independently as component of their NAPs, and collectively as part of OKACOM. The geographical scope of the SAP is the whole CORB.

The SAP is a coordinated management response to the problems posed by these Driving Factors and Priority Areas of Concerns as identified by the Transboundary Diagnostic Analysis (TDA) carried out for the Basin (as part of the GEF funded EPSMO project). The TDA identified four emerging Areas of Concern in the Basin and for underlying Driving Factors, which are described below.



## DRIVING FACTORS

### Population dynamics

Throughout the Basin, there is a trend towards increasing urbanisation associated with population growth and a lack of alternative livelihood options. Although the population in the Basin is predominantly rural, Angola has an urban population of about 40%, Namibia approximately 20% and Botswana 30%. Increased urbanisation leads to increased demand for services such as water supply and sanitation, which, if not regulated, could lead to increased water pollution.

### Land use changes

Land-use change is a driving force for changes in sediment dynamics, water quality and abundance and distribution of biota, and has impacts on the hydrological regime through deforestation. Linked strongly to population growth, its impact is incremental and often very difficult to reverse. Despite the relatively low population densities in the CORB the changes in land use and vegetation cover has been marked. There is increased demand for land for crops along the length of the river from the Angolan highlands to the Panhandle and with an increasing population this trend will only accelerate.

### Poverty

Poverty is a feature of the human populations of the Basin in all three countries. This is partially due to the remoteness of the Basin, but also the highly unequal distribution of wealth in the three countries.

Poverty alleviation in the Basin is a major investment target for governments and the three countries have national poverty reduction strategies aimed at improving the welfare and living conditions of their populations through increased economic growth and linked to the Millennium Development Goals (MDGs).

### Climate change

An analysis of projected climate change effects predicts a rise in temperature and rainfall in the Basin. Higher temperatures (2.3°C-3°C) will affect the south of the Basin more strongly than the north, increasing evaporation. There is a projected increase in rainfall of 0-20% across the Basin, with the greatest effect in the north because of the north-south rainfall gradient. In general, the projected increase in rainfall will more than compensate for higher evaporation rates. This could result in an increase in runoff (total and monthly) with proportionately stronger peak flows.

## PRIORITY AREAS OF CONCERN

The impacts of the above described key drivers are primarily seen in four priority areas of concerns as identified by the TDA, namely:

- Variation and reduction of hydrological flow
- Changes in sediment dynamics
- Changes in water quality
- Changes in the abundance and distribution of biota

# Thematic Area 1: Livelihoods and Socio Economic Development

The TDA identifies poverty and population growth as two key drivers of change in the Basin and the Basin countries share the common objective of improving the living conditions in the Basin and the livelihoods of the Basin population. Thematic Area 1 aims at sustaining key livelihood activities in the Basin such as agriculture, livestock and fisheries and ensuring productivity improvements while at the same time reducing/mitigating the environmental impacts of such activities.

The economic analysis in the TDA identifies areas such as tourism and CBNRM as potential growth areas that can produce significant economic returns while having minimal impact on the environment. Thus, the further development of tourism, particularly in the upstream areas of the Basin, as well as the expansion of CBNRM in the Basin are critical outcomes

on this Thematic Area. Likewise, the provision of improved water and sanitation supply to the Basin population has the potential to produce large economic returns and also contributes significantly to the achieving of a number of MDGs. The improvement of water and sanitation supplies is therefore a key outcome in this Thematic Area.

The evolving international climate change mitigation framework might hold potential economic opportunities that could be materialized in the Basin and an assessment of such potential opportunity forms part of this thematic area. In order to facilitate investments and economic development in the Basin in a coordinated, sustainable fashion, the carrying out of a Multi-sectoral Investment Opportunity Analysis (MSIOA) to guide economic and investment planning forms a key output of this Thematic Area.





## THEMATIC AREA 1 OUTCOMES



1. Basin-wide tourism strategy developed and tourism development increased
2. Transboundary CBNRM established and livelihoods from CBNRM improved
3. Conservation agriculture established in the Basin and livelihoods from agriculture improved
4. Livestock management and productivity in the Basin improved
5. Sustainability of River Fisheries ensured and aquaculture production expanded
6. Water and sanitation supply to Basin communities improved
7. Sustainable economic and investment opportunities (including those from the global climate change mitigation framework) identified and utilised

## Thematic Area 2: Water Resources Management

There is inadequate knowledge about the contribution of the various parts of the CORB to the available water resources due to inadequate or inconsistent monitoring in some parts of the Basin. Groundwater resources have never been quantified at the Basin level. Changes in the quality of water arising from the planned developments will affect water users and ecosystems. The development of surface water, groundwater, and water quality monitoring systems will enable collection of data necessary for effective water resources management. Improvement of the various tools for overcoming challenges faced in water resources management is a key issue in the CORB. The tools required are for managing water allocation, floods and water quality.

Under the umbrella of the BDMF the outcomes in this Thematic Area are focused on the development of specific planning and monitoring instruments for water resources assessment and management ultimately leading to the development of a Basin-wide IWRM plan.

Taking into account the interconnectedness of surface and groundwater resources, emphasis is placed on the latter as the understanding of groundwater availability and quality in the Basin is underdeveloped. Likewise, flood management is identified as a key outcome in this Thematic Area given the severe impacts of large floods in the recent past.

This Thematic Area respond (primarily) to the TDA Priority Areas of Concern 1 (Variation and Reduction of Hydrological Flow) and 3 (Changes in Water Quality) and to a lesser extend to Priority Area of Concern 2

(Changes in Sediment Dynamics). Like the interventions in the other Thematic Areas the interventions in this area are closely integrated with the BDMF and linked with interventions in other Thematic Areas.





## THEMATIC AREA 2 OUTCOMES



1. Common demand forecast and water resource yield planning methodologies with consideration of climate change impacts approved and implemented
2. Basin-wide hydrological and meteorological monitoring system to determine surface water resource yields, groundwater recharge and predict drought and flood events strengthened
3. The potential of groundwater as an alternative source of water supply in the Basin is known
4. Common guidelines and regulations for WDM (water demand management) and licensing of water abstraction approved and implemented
5. Environmental Water Requirements agreed and observed in the basin
6. Basin-wide water quality monitoring programme established
7. Common guidelines and regulations for water quality management approved and implemented
8. Basin-wide sediment monitoring system established
9. Reduced flood damage in the Basin due to improved flood forecasting and early warning systems
10. Basin planning and management at national and transboundary level based on Basin-wide IWRM plan

## Thematic Area 3: Land Management

Changes in land cover affect the water quality, quantity and sediment load through changes in run-off, erosion, groundwater recharge and by introducing pollutants into the river. Furthermore land management objectives in one country can negate land management practices in another. Development in certain parts of the CORB is guided by established land use plans but large parts of the Basin either lack such plans or they are not enforced when available. National land and sectoral natural resource use policy and legislation provide a fragmented framework for land use planning and land management, including forestry and forest management.

The development of harmonised land use guidelines throughout the Basin will promote the sustainability of resource use in the Basin and has been identified in the consultation process as a critical outcome for the SAP. Although environmental degradation in the Basin is limited at present, it does exist in some areas and interventions will be carried out to reverse existing and halt further degradation. Thematic Area 3 contributes to addressing all four Priority Areas of Concern identified in the TDA.







### THEMATIC AREA 3 OUTCOMES



1. Harmonised, Basin-wide land use planning guidelines developed
2. Existing environmental degradation halted or reversed



## Thematic Area 4: Environment and Biodiversity

The CORB supports an extraordinary level of biodiversity and sustains globally important wetlands. The ecosystem services provided are an important component of the livelihoods of the people in the Basin.

A better understanding and management of the Basin's natural resources will contribute to maintain the value of the ecosystem services provided by the Okavango and increase the economic returns from sustainable resources use. As the TDA economic analysis has shown the economic potential of sustainable use of the Basin ecosystem, and tourism in particular, outperforms the economic potential from more water-use intensive economic development options. At the same time, the Basin's wetlands are critical for ensuring the flow regime of the river and the maintenance of dry season flows in particular on which the other Basin ecosystems and the ecosystem services they provide depend.

Thematic Area 4 focuses on developing a better understanding of the Basin ecosystems, particularly wetlands, and the inter- relation between different ecosystem functions. Biodiversity, wetland and sediment monitoring systems will be developed in order to monitor ecosystem functionality. A particular emphasis is placed on developing sustainable wetland management systems given the critical importance of wetlands for the Okavango ecology and livelihoods.

The impacts of climate change on ecosystem have been identified by the TDA as a driver of change in the Basin. The increase of climate change awareness among Basin communities and the development of climate change adaptation measures suited to the conditions in the Basin have therefore been identified as critical and are reflected in Outcome 5 of this Thematic Area.





## THEMATIC AREA 4 OUTCOMES



1. Biodiversity monitoring programme developed
2. Wetland monitoring and management system developed and operational
3. Climate change awareness of Basin communities increased and adaptation measures adopted by Basin communities





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