

SADC REGIONAL PROGRAMME ON AGRICULTURAL WATER
MANAGEMENT FOR FOOD SECURITY (AWMFS)

OKAVANGO BASIN AGRICULTURAL WATER AND FOOD SECURITY PROJECT

(ANGOLA AND NAMIBIA)

CONCEPT NOTE

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**AFRICAN DEVELOPMENT BANK
FAO/ADB COOPERATIVE PROGRAMME**



**SOUTHERN AFRICAN DEVELOPMENT COMMUNITY
FOOD AGRICULTURE AND NATURAL RESOURCES DIRECTORATE**

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PART I: IDENTIFYING THE PROPOSED INTERVENTION

1. Introduction

In response to the NEPAD initiative for Africa, the African Development Bank (ADB) indicated its commitment to support the Comprehensive Africa Agriculture Development Programme (NEPAD-CAADP). In light of the priority given in the NEPAD plan to the provision of support through regional economic organizations, ADB entered into discussions with the Southern Africa Development Community (SADC) concerning a major investment in the region. The result was a proposal for a SADC regional programme that would provide a significant reduction in food insecurity through a focus on the most critical issue for small farmers within the region – agricultural water management. The ADB has requested the FAO Investment Centre to undertake the preparation of this programme, tentatively budgeted at a total of US\$150 million.

Of the total of 10 SADC member countries which have applied to participate in this programme, initial national investment projects are being prepared that will cover at least seven countries in three major basin areas:

- The **upper Okavango** basin, encompassing territory in Angola and Namibia;
- The **mid-Zambezi basin**, with territory in Botswana, Zambia and Zimbabwe, and;
- The **Songwe River basin**, with territory in Tanzania and Malawi
- A fourth river basin encompassing area in the South of Mozambique, probably in association with Swaziland and the Republic of South Africa, remains to be finalized.

This Concept Note provides for proposed investments in agricultural water management and food security in those parts of the Upper Okavango River Basin (ORB) which are located in Angola and Namibia. An integrated river basin approach has been adopted to improve the prospects of a homogeneous development across the two countries. In the process, due consideration has been given to the interests, mostly of an ecological nature, of the lower reaches of the river basin which are located in Botswana and which are better known as the Okavango Delta.

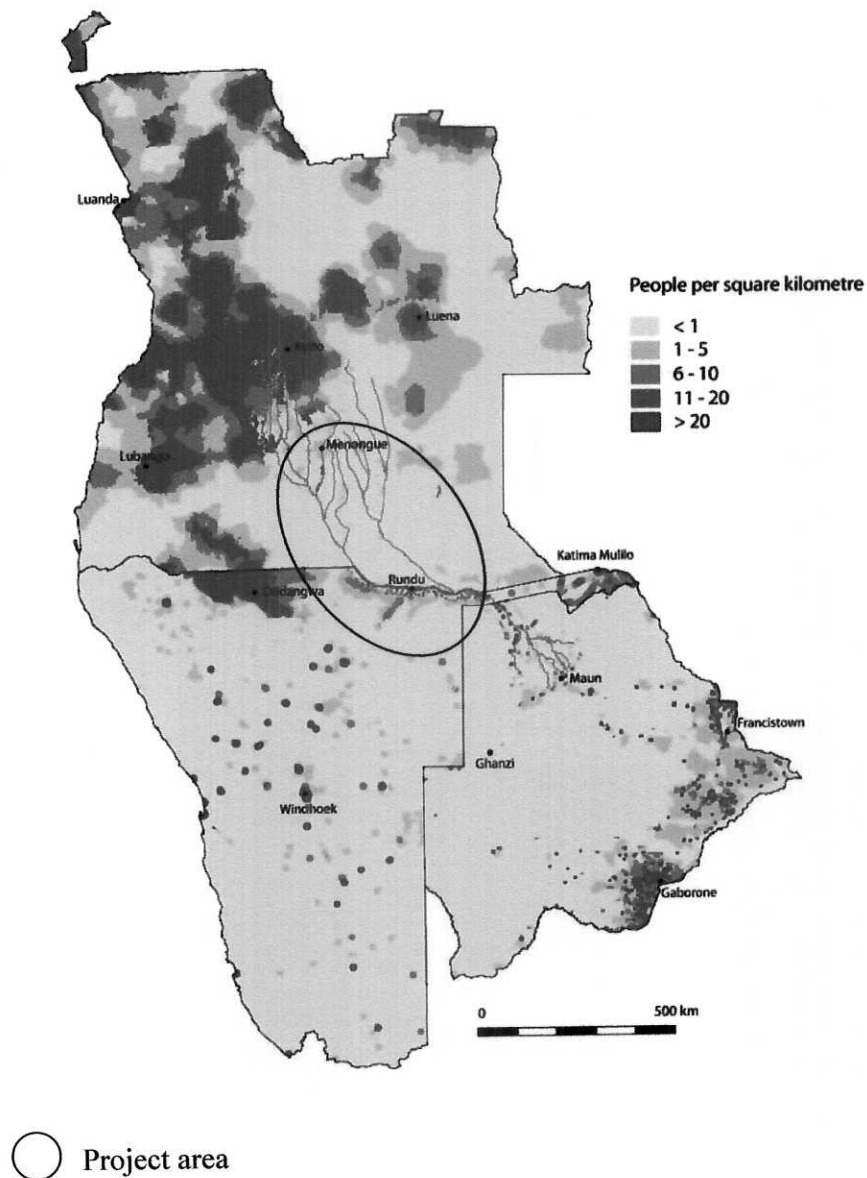
The proposals presented in this Concept Note result from a series of consultations conducted in both countries between October 2005 and March 2006. These included field trips within the river basin, meetings with stakeholders, including key government officials in both countries and review of existing information on planned and on-going initiatives. The understanding gained during these consultations was further discussed during two stakeholder workshops held in the river basin on 2 March 2006 in Rundu, Namibia and on 9/10 March 2006 in Menongue, Angola and finally at a joint river basin workshop in Windhoek on 27-28 March 2006.

These workshops confirmed the need for ownership of the proposed project by stakeholders living within the river basin and both workshops were officially opened by the governors of both Kavango and Kuango Kubango Provinces in Namibia and Angola respectively. Stakeholders from all the provinces that fall within the river basin attended these workshops, with close to 30 delegates in Rundu and more than 40 in Menongue, Angola.

2. Project Area

The proposed project area comprises parts of the catchment area of the Okavango River and its tributaries in Angola and Namibia. Within Angola, the project area encompasses both the Kuito and Kubango tributaries as far north as Menongue. In Namibia, the area is principally the southern border of the Kubango, which comprises the border between Angola and Namibia, before crossing the Caprivi Strip to enter Botswana. The Okavango Delta and prior areas in Botswana do not form part of the project area.

Figure 1: The Okavango River within the three co-basin states



3. Background ¹

Shared by Angola, Botswana and Namibia (Figure 1) the ORB is mostly known for its delta which is based in Botswana and which is, with its rich biodiversity, the largest world Ramsar site and one of the major tourism destinations in southern Africa.

The hydrology of the Okavango River depends on its two major tributaries, the Kuito River, with a catchment area of 65000 km² and 876 mm of rainfall per year and the Kubango (or Kavango) River, with a catchment area of 115000 km² and 983 mm of rainfall per year. Each tributary responds to a different rainfall regime; the Kuito River is subject to influences from the Indian Ocean whereas the Kubango River depends on influences from the Atlantic Ocean. The combined hydrological response from the two produce tributaries ensures that the inflow from the Okavango River is relatively constant.

The ORB is located far from the major human settlements of the three countries, although in Namibia population growth has recently accelerated on a strip of a few kilometers along the Okavango River, which represents the main area of development interest for Namibia. The considerable agricultural potential in the upper reaches of the ORB in Angola can only be unlocked if roads are rehabilitated and access made more readily achievable. It should be noted that although soils are poor in the middle reaches of the ORB in both Angola and Namibia, opportunities for indigenous high value crops and fish farming, both combined with tourism, cannot be overlooked.

Food, income and security

Rainfall is higher and soils are generally better in Angola than in Namibia. Crop farming is dominated by four staples foods: millet, maize, sorghum and cassava. Subsidiary crops include beans, melons, pumpkins, cabbages and tomatoes, as well as groundnuts, sugar cane and bananas. Vegetables and fruits are grown more commonly in Angola than in the drier downstream areas. Yields are higher in Angola than in Namibia where low and badly timed rainfall often makes crop farming unproductive and risky, pushing smallholder farmers towards off-farm income generation activities. Crops may be grown on rich soils in seasonally flooded areas close to the river, tributaries and channels.

Livestock farming becomes progressively more important from north to south and from the wettest upper catchment to the more arid areas in Namibia, where it comprises the major economic activity. The opportunities from livestock farming are, however, constrained by a veterinary quarantine fence in Kavango (Namibia) that restricts the movement of cattle and other animals as part of EU animal health regulations for meat exports. Fishing along the river and its tributary exists and offers the potential for enhancement by fish farming and freshwater aquaculture.

The great majority of the estimated 60,000 to 70,000 rural households within the project area therefore practice small-scale farming in an uncertain agro-climatic environment. Due to the impact of the extended civil conflict, including the destruction of infrastructure and massive social dislocation, as well as the high degree of isolation of the area from the rest of the country, poverty

¹ Most of the information, including the map, presented in this section is derived from Mendelsohn, J. & Obeid, S, (2004): Okavango River, the flow of a lifeline.

and food security is a major problem in the Angolan portion of the ORB. Most producers are almost entirely subsistence-based with little, if any, market linkage. Little working irrigation infrastructure exists. In Namibia, a mix of small and larger commercial farmers is found. Linkage to the cash economy is much stronger in Namibia and although agro-climatic conditions are worse, small producers will often have external cash incomes from other sources that can, in some cases, exceed the incomes they obtain from farming.

Several natural products are found in the Okavango River Basin and can directly or indirectly contribute to enhancing food security. These include the jatropha (for biofuel), mangeti oil, wild honey, etc.

Population

The total population in the upper ORB – the catchment area in Angola and within 20 km of the river in Kavango – amounts to approximately 500,000 people. This number is derived from each country as shown in Table 2 which indicates that approximately two thirds of the upper basin population lives in the Angola catchment and under one third in the Kavango (Namibia). Urbanisation accounts for less than 20% of the population across the two countries².

Basin Area	Rural	Urban	Total	% Total	% urban
Angola basin	300,000	50,000	350,000	68%	14%
Kavango	121,000	42,000	163,000	32%	26%
Total	421,000	92,000	513,000	100%	18%

Table 2: The Approximate Population in the upper ORB

While the figure for Namibia derives from the national census held in 2001, the estimates from Angola have been derived from several sources. The figures in Angola are also likely to change rapidly, especially in urban areas because of the resettlement of several population groups after the end of the war. Thus, the overall population in the ORB in Angola, and mostly the urban component is likely to have increased in the recent years.

Relevance of proposed project for Angola and Namibia

Considering the vulnerability of the rural populations in both Angola and Namibia, especially those in Angola whose livelihoods mostly depend on agriculture production, the project should seek to contribute towards improved food security by seeking to maximise the agriculture production yield to the full potential that the ORB holds. The urban settlements in both countries are set to grow and equally require reliable food supply, ideally from within the basin. Thus, the activities to be proposed should build on the competitive advantages and added values that they can bring to the ORB to enhance the quality of livelihoods by improving the reliability of food production through improved water use (storage, irrigation methods) and other supporting activities and spin off developments.

² A further estimated 88,000 inhabitants (5% of them urban) are estimated to live in Ngamiland in the Botswanian section of the ORB.

Recent developments in the ORB

A key development within the ORB was the establishment of the Okavango River Commission (OKACOM) in 1994. The Every River Has its People project (ERP) provides a platform to stakeholders from the three countries for a concerted sustainable development and management of the river basin. Several initiatives supporting the development of the Okavango River Basin are funded by donors working in the region. These include the Integrated River Basin Management Programme (IRBM) and the GEF funded Environmental Protection and Sustainable Management in the Okavango River Basin (EPSMO) Project. The EPMSM is a GEF-funded, UNDP-implemented, and FAO-executed project. Its main tasks are to carry out a Trans-boundary Diagnostic Analysis (TDA) – a technical analysis of the main water-related environmental issues (and sustainable development opportunities) cutting across the national boundaries of the three riparian countries (Angola, Botswana, and Namibia) – and to formulate a joint Strategic Action Programme (SAP) to be signed and implemented by the three riparian governments. Clearly, synergies will these initiatives need to be established to avoid any duplication.

4. Goal, Objectives and Target Group of the Proposed Project

The proposed project would have the goal of reducing food insecurity among the target rural population. It would seek to achieve this goal through increased efficiency of water use in agriculture, including both irrigated and rain-fed crop production, livestock production and aquaculture, as well as through support to associated enabling and supporting activities such as institutional strengthening, improved access to markets, and better transportation infrastructure.

Target group

For the specific purposes of improved agriculture water management, the target group would mainly consist of:

1. Resource poor rainfed farmers and livestock herders vulnerable to food insecurity
2. Smallholder farmers in irrigation schemes with poor efficiency
3. Market agents and traders
4. Female-headed and HIV/AIDS affected households

The opportunity of joint ventures and partnerships with the private sector would also be explored. It is imperative that entrepreneurs are identified and attracted, to increase trade and the addition of value to agricultural production.

5. Project Components Structure and Cost

The two participating countries will share a common project, although not all activities will apply equally in both countries. Proposed components are:

1. Increased Agricultural Productivity and Output Value

2. Sustainable Natural Resources Utilization and Management
3. Community and Institutional Development and Financing
4. Infrastructure Development
5. Project Coordination and Management

The project will be structured so as to have two implementing units at national level, linked through a single coordination mechanism, probably within the Okavango River Commission (OKACOM).

The total investment cost for the project is provisionally estimated at US\$66 million over a six year implementation period.

PART II: DESCRIPTION OF THE PROJECT ACTIVITIES

6. Component 1: Increased Agricultural Productivity and Output Value

The principal purpose of this component is to identify and disseminate technical knowledge of improved approaches to water management, agricultural production (including livestock and aquaculture) and market access to smallholder farmers within the project area. This will provide both increased local food supplies as well as linkages to the agribusiness chain for processing, transport and supply beyond the basin area. The following major and subsidiary activities are proposed:

Crop production:

- Field testing and demonstration of new small-scale production approaches including the utilization of water conservation techniques, expanded use of inputs, improved varieties and crop diversification;
- Introduction of farmer-based production of open pollination seed varieties at community level;
- Demonstration of small scale agriculture mechanization and animal traction techniques;
- Technical support for expanded irrigated crop production. In Namibia this is envisaged as occurring largely through the Government's 'Green Scheme', already being implemented in two other sites in Namibia under ADB financing³ (infrastructure would be developed under Component 4);
- Identification and field testing of crop diversification candidates.

Fisheries/Aquaculture:

- Support for fishing cooperatives in Cuito Cuanavale, Nancova, Cuchi and Cuelel in Angola, including tanks for restocking and the provision of fishing kits;
- Stimulate fish production by private sector fish farmers, especially in Kavango, through training in aquaculture production and the expansion of fry and fingerling production.

Livestock:

- Expanded veterinary capacity;

³ Under Green Schemes, smallholder farmers (typically 2 ha each) are set up as irrigated satellite producers to a single commercial farmer (approximately 40 ha) who has a contractual responsibility to support the smallholder producers in the production and especially marketing of crops. Typically high value crops such as table grapes and date palms are promoted under this scheme.

- Demonstration of impact of increased fodder production and usage;
- Pasture management and livestock health training for cattle herders.

Value Addition:

- Technical assistance for improved post harvest, storage, processing and marketing skills;
- Improving the basic business management and marketing skills of rural traders;
- Evaluation of the feasibility of establishing certification and branding to local products to add further value;
- Promotion of improved market linkages with national cities and neighbouring countries, including market identification visits, participation in trade fairs, etc.

7. **Component 2: Sustainable Natural Resources Utilisation and Management**

The Okavango River system comprises one of the world's great environmental resources, with little economic development along most of its length and a unique inland delta system. While socio-economic development is critical for the future of the local populations and to reduce their food insecurity, this development must occur in a manner that ensures the adequate protection of the river basin and its resources. An important component of the project is therefore an emphasis on establishing the management and planning capacity, and related technologies, which will provide to local communities and governments the ability to promote economic development compatible with the needs of the river system. Major and subsidiary activities of the component will include:

Natural Resources Management:

- Undertake an inventory of the existing natural resources in the basin within both Angola and Namibia, especially those that are unique to the ORB, to assess the opportunity for their sustainable exploitation to improve food security and incomes within the ORB;
- Identify, demonstrate and promote sustainable and productive agricultural technologies, including conservation farming, water harvesting and catchment, and slope management and stabilization;
- Strengthen land use planning and zoning capacity, including wetland and buffer zone management in order to ensure that sustainable land development takes place;
- Creation of an environmental assessment capacity for all project interventions to ensure compatibility with sustainable resource utilization practices.

Sustainable Off-Farm Income Generation:

- Marketing of tourism and support for route developments, especially to link the famous and well-developed industry in the Delta (Botswana) with the pristine Angolan catchment;
- Promotion of handcraft production and marketing;
- Promote production and processing of wild fruits and other indigenous products unique to the basin, (e.g. mangetti oil and wild honey in Angola).

Promotion of Community Ownership and Management

- Creation of legislative and administrative structures to enable the creation of conservancies in Angola, learning from the experiences in Namibia, particularly to facilitate partnerships or joint ventures (JVs) between communities and the private sector;
- Provide support to local communities in setting up JVs, management systems and plans, craft centres, community campsites and other facilities.

8. Component 3: Community and Institutional Development and Funding

This component will focus on the creation and strengthening of local capacity and social capital for sustainable economic development and increased food security. Major and subsidiary activities will include:

Community Capacity Development:

- Support for the creation and operations of community Water User Groups (rainfed and irrigated) and other special interest groups;
- Creation of Farmer Field Schools to experiment with and apply appropriate technologies;
- Training of community animators as focal points for demonstration and dissemination of technologies.

Local Institutional Strengthening and Management Skills;

- Establishment of agriculture research center in Cuchi (Angola) and a professional training center in Menongue (Angola)
- Capacity building to local planning staff (GEPE) in the application of GIS systems
- Strengthened capacity for technology transfer and dissemination in local extension services
- Expansion of the agricultural planning capacity within OKACOM

Okavango Community Investment Fund

- Creation of a small scale demand-driven investment fund accessible by communities, groups and local entrepreneurs to provide shared cost financing of productive activities at local level.

9. Component 4: Infrastructure Development

Extensive requirements for infrastructure rehabilitation and development exist within the project area. This project can only cover the most urgent, agriculturally-related of these needs, but it can also identify and prepare proposals for further infrastructure investment – particularly in roads and bridges. Key major and subsidiary activities include:

Demining:

- Identification and demarcating of roads and significant agricultural production areas still not cleared since the civil conflict;
- Demining of key agricultural supply chain routes identified as hazardous or unsuitable for transit by vehicles.

Rehabilitation of Agricultural Supply Chain Routes:

- Spot rehabilitation of key sections of main arterial roads for agricultural production, including Catuitui- Menongue-Cuito Bie, Menongue-Kuvango and Menongue-Cuito Cuanavale (Angola);

- Rehabilitation of feeder and access roads linked to these main arteries for input and output marketing;
- Pre-feasibility study for a Calai- Rundu bridge between Angola and Namibia over the Okavango River;
- Pre-feasibility study for upgrading and expansion of the Rundu airport, with particular attention to the handling of high value goods.

Irrigation and Multipurpose Water Storage and Irrigation:

- Technical design and financing for rehabilitation and construction of water storage and distribution canals, following feasibility studies, including:
 - Relining of 3 km of the Missombo irrigation canal (Angola) to irrigate 1,600 ha
 - Rehabilitation of the 8 km Vissati irrigation channel on the Cuchi River (Angola) to irrigate 10,000 ha
 - Rehabilitation of the Cambumbe dam (Angola) to irrigate 1,000 ha, expand fish nurseries and supply water for parts of Menongue town
 - Construction of three small dams on the Cuchi and Cuelei (Angola) rivers to support irrigation
 - Possible mini hydro-electric facilities for powering irrigation pumps and agroprocessing operations
 - An off channel storage infrastructure such as Ndonga Linena Muramba in Namibia
- Establishment of 2,500 ha of 'Green Scheme' infrastructure (Namibia), including farm development and irrigation infrastructure.

Other infrastructure:

- Municipally-owned storage facilities and market infrastructure to support expansion of market linkages
- Construction of animal health infrastructure (dipping tanks and infrastructure for vaccination)
- Development of tourism infrastructure including (a) central information services, (b) accommodation facilities, (c) access to attractions on both sides of river, and (d) cultural tourism activities and craft centres.

10. Component 5: Project Coordination and Management

A Project Implementation Unit will be required in each country. Where possible this unit will use existing capacity within the Ministry of Agriculture of the country, but is likely to require the following skills areas:

- Project Manager
- Technical Sub-unit (Production and Marketing)
- Technical Sub-unit (Natural Resources Management)
- Technical Sub-unit (Community and Institutional Capacity and Community Fund)
- Technical Sub-unit (Infrastructure)
- Monitoring & Evaluation
- Administration and Finance
- Secretarial services

The PIUs in each country would both be members of a Project Coordination Committee which would have representatives of the ADB, FAO, Angola, Namibia and Botswana and would possibly be hosted by OKACOM.

Provision will be made for monitoring and evaluation of the project based on the Logical Framework Analysis (LFA) which will be developed as part of the full project proposal. Intervals at which progress reports will be submitted and project reviews undertaken will be defined.

11. Proposed Budget

A tentative total budget of USD 66 millions has been estimated, with USD37.5 millions for Angola and US\$28.5 millions for Namibia. The cost breakdown is provided in the table below.

Okavango Basin Agricultural Water and Food Security Project - Preliminary Budget

Component/Activity	US\$000		
	ANGOLA	NAMIBIA	TOTAL
COMPONENT 1: INCREASED AGRICULTURAL PRODUCTIVITY AND OUTPUT VALUE			
1.1. Crop Production	3,500	3,500	7,000
1.2. Fisheries/Aquaculture	1,000	1,000	2,000
1.3. Livestock	1,500	1,000	2,500
1.4. Value Addition	1,000	1,000	2,000
SUB TOTAL	7,000	6,500	13,500
COMPONENT 2: SUSTAINABLE NATURAL RESOURCES UTILIZATION AND MANAGEMENT			
2.1. Natural Resources Management	1,500	1,500	3,000
2.2. Sustainable Off-Farm Income Generation	750	600	1,350
2.3. Promotion of Community Management and Ownership	750	500	1,250
SUB TOTAL	3,000	2,600	5,600
COMPONENT 3: COMMUNITY AND INSTITUTIONAL DEVELOPMENT AND FUNDING			
3.1. Community Capacity Development	1,500	500	2,000
3.2. Local Institutional Strengthening and Management Skills	1,000	750	1,750
3.3. Okavango Community Investment Fund	3,000	2,500	5,500
SUB TOTAL	5,500	3,750	9,250
COMPONENT 4: INFRASTRUCTURE DEVELOPMENT			
4.1. Demining	1,000	-	1,000
4.2. Rehabilitation of Agricultural Supply Chain Routes	9,000	2,000	11,000
4.3. Multipurpose Water Storage and Irrigation	4,500	8,000	12,500
4.4. Other Infrastructure	2,500	2,000	4,500
SUB TOTAL	17,000	12,000	29,000
COMPONENT 5: PROJECT MANAGEMENT AND COORDINATION			
	4,875	3,728	8,603
TOTAL	37,375	28,578	65,953