

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

FINAL REPORT OF FIRST PHASE FOR NAMIBIA

John Mendelsohn
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INTRODUCTION

This report presents the results of work done for the Namibian component of the AWMFS project since October 2006. Background information on this project is given in the Project Concept Note in Appendix 1. The report should be read in conjunction with this Project Concept Note and previous interim reports produced in November 2005 and early March 2006 (Appendix 2 and 3).¹

For assistance in economic analyses and other assessments of possible development investments, I requested the Namibia Nature Foundation to second the services of Ms Marie Karaisl, an economist working for the Foundation. She assisted me throughout this work, and her services were provided at no cost to the AWMFS project. Mr Chipy Barborosa, the counterpart national consultant for Angola, joined us during fieldwork in Kavango in November 2005 as part of a process to foster cross-border development prospects for this project.

Although the stated focus of the project was to improve food security in the Okavango River Basin with a particular focus on water management for agriculture, it was clearly agreed at the outset that alternative methods of improving food security, but indirectly related to agriculture, could be explored. These agreements were reached during meetings with senior staff of the Ministry of Agriculture, Water and Forestry, Mr Jean Boroto (Regional Consultant of the FAO for the project) and Mr Ken Johm (African Development Bank).

MAJOR RESULTS

Several principles to guide possible investments were developed during this work, and these are described in some detail on pages 8-9 as part of the Project Concept Note. However, it is necessary to restate and elaborate on some of these here because much of how this first phase has been concluded rests on these principles.

Based on analyses of income and expenditure surveys, agricultural surveys, population censuses and a range of other studies, and as summarised in two books on the Okavango,² we firmly conclude that cash security is far more critical than food security. Relatively few people are actually short of food, and many more people suffer from a lack of access to cash, especially in limiting their ability to participate in modern society. We thus sought interventions that would primarily improve cash security, but which would also lead to greater nutritional security.

¹ I was paid for a total of 40 days of work over this period so much of the work was done on an intermittent basis.

² Mendelsohn, J.M. & S. el Obeid. 2003. *Sand and Water: a profile of the Kavango region of Namibia*. Struik, Cape Town. 138 pp; and Mendelsohn, J.M. & S. el Obeid. 2004. *Okavango River: the flow of a lifeline*. Struik, Cape Town. 176 pp.

A second major conclusion reached was that developing the overall economic health of the Okavango Basin would be the best way of enhancing cash and therefore also food security.³ We thus sought interventions that would create wealth, industries (especially food industries), jobs, food and other spin-off and trickle down effects in the longer term. In this respect, we contend that the private sector and local entrepreneurs should play a dominant role, while governments would be most effective in creating enabling conditions to encourage economic growth within the Basin.

The third major principle was that the Okavango offered comparative advantages as a river system that could be used to enhance its economy and the well being of its people. Accordingly, we sought interventions that could increase the overall value of the Okavango, and hence its economy.

Nine intervention areas were proposed on the basis of these and other principles, and these are described in some detail on pages 18 to 26 as part of the Project Concept Note (see Appendix 1). It should be stressed that the principles and recommended intervention areas were all developed over a period of several months and after intensive consultations with many people, as listed in Appendix 4. They were also debated and approved during a meeting of people who live within the Okavango Basin (see Appendix 3).

NAMIBIA-ANGOLA WORKSHOP OF 27 AND 28 MARCH

Upon the presentation of these principles and the nine recommendations at this workshop, the FAO representative cautioned that the broad approach described above was largely untenable because it did not address the immediate objective of the project which was about agriculture water management for food security, focusing on the needs of the poorest people living in the Okavango Basin. Some of the recommendations could thus not be supported, and the overall focus would have to change during subsequent phases of the project. With regards to Namibia, the workshop was thus obliged to focus on some alternative options, of which the following interventions were recommended:

1. AGRICULTURE PRODUCTION, LIVESTOCK, FISH FARMING AND ADDED VALUE OUTPUTS

- Improving crop farming techniques and promotion of experimental projects, such as conservation farming, improved irrigation methods. Where possible, the introduction of new techniques should be based on clear demands.

³ Although I would prefer the project to investigate all appropriate methods of generating wealth, Jean Boroto, the Co-ordinator of the project for the whole Upper Okavango Basin, offers a compromise by commenting that “one way of putting this is that cash could be generated from adding value to agriculture products through their processing, packaging and sale and that this would be enhanced by marketing considering that the Okavango River Basin lends itself to a unique approach to marketing (acknowledging that it holds for example the world largest Ramsar site, that agriculture activities cannot be divorced from tourism opportunities, etc..). A strong case should therefore be made for mobilising additional resource to exploit this component which would strictly fall outside the scope of this project but would actually enhance its objective significantly”.

- Aquaculture through the promotion of private enterprise fish farms, training, fish food production, restocking. It was noted that fish farming started by the government and run on a co-operative basis had not been successful.
- Improvement of livestock production methods, the development of feedlots, and the moving of the veterinary cordon fence to increase the export of meat products.
- The investigation of potentially high value crops which would require relatively less irrigated water and which would could be exported.
- The value of agricultural and fish products should be increased by branding, local processing and improved marketing. All of these interventions could add value to produce.

2. *SUSTAINABLE NATURAL RESOURCE MANAGEMENT*

- Development and implementation of land use planning and zonation, which would lead to more efficient use of natural resources.
- Promotion of community management and ownership, greater security of tenure, and further development for natural resource production systems. These would contribute to current programmes to establish conservancies and community forests, and industries associated with them.
- Tourism can be developed, especially by the possible development of tourism routes across the Basin.
(it was noted that the separate AfDB project to conduct a Strategic Environmental Assessment of the river in Kavango should be supported)

3. *CAPACITY BUILDING AND INSTITUTIONAL STRENGTHENING*

- Training in best practices and efficient methods of irrigation for small-scale farmers to increase food production.
- Training in aquaculture to support the development of fish farms.
- The strengthening of institutions and development of management skills.
- Creation of an Okavango River Basin Development agency and/or the strengthening of the OKACOM Secretariat to promote development in the Basin
- Training in food technology

4. *INFRASTRUCTURE DEVELOPMENT*

- Rehabilitation of key transport linkages, including main roads, bridges (Rundu-Calai, Dirico-Katere), feeder roads (Divundo-Mucusso, the Khaudom road) and Rundu airport
- Agriculture water storage and distribution through the creation of water points and backwater storage to increase farmers access to water for crop production and livestock.
- The supply of energy by investigating alternative sources (including from small hydro-electric sources upstream in Angola) and options to cut costs.
- Markets, storage and processing, especially for the Namibian Horticulture Development Initiative

5. *PROJECT MANAGEMENT AND COORDINATION*

It was recognized the project would have to plan for its management and co-ordination. This might be done through the creation of a Project Implementation Unit and the appointment of appropriate staff. Alternatively, these aspects might be out-sourced to an existing organization.

Many of these recommendations remain outside the main focus of this project. In the light of the limited time available to develop full proposals (which include cost-benefit and economic analyses, and social and environmental impact assessments) it was agreed that attention should only focus on those interventions that relate directly to agricultural water management for direct food security. It was further left to the Ministry of Agriculture, Water and Forestry to make the final selection of interventions to be fully proposed and analysed for the project proposal to the African Development Bank.

APPENDIX 1.

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

UPPER OKAVANGO RIVER BASIN

DRAFT CONCEPT NOTE

PART I: IDENTIFYING THE PROPOSED INTERVENTION AREAS

Introduction

This draft Concept Note on the Upper Okavango River Basin (ORB) presents opportunities for economic and agricultural development in those parts of the river basin 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 a high 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 draft Concept Note are a result from several 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.

These workshops confirmed the need for ownership of the proposed project by stakeholders living within the river basin. Both workshops were officially opened by the highest political authority, the governor in both the 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. Both workshops also showed that, though the project was initiated at a higher level (Nepad, AfDB, SADC and FAO), it was now turning into a bottom up initiative, being demand driven and based on needs identified on the ground.

An integrated approach requires that a broader river basin perspective is adopted, considering that, in the ORB, agriculture and its related activities constitute only one of the several opportunities for achieving socio economic development in general and food security in particular. Such opportunities are also interrelated and cannot therefore be presented separately without affecting the soundness and sustainability of any development project in the ORB.

The draft PCN is structured as following: The first part comprises this introduction followed by a background to the preparation work for this project within the SADC context. An overview of the ORB is then provided followed by the key principles that are particular to the ORB and which have guided the development of the draft concept Note are discussed. The objectives and goal of the ORB project are then described followed by the selection of the proposed major project components or intervention areas. In the second part of the draft PCN, each proposed intervention area is described with possible activities. A

tentative budget is also attached with an estimated amount allocated to each component for both Angola and Namibia.

It needs to be stressed that no clear sites have been identified at this stage and that costs estimates are cursory and a result of some preliminary judgment which are likely to change once the detailed field preparations take place in the months to follow. The resources required to carry out the full project proposal will then be identified.

This draft Concept Note is mainly prepared to guide discussions at the ORB workshop that is to be held on 27 and 28 November 2006 in Windhoek, Namibia. It is expected that inputs from the participants of the workshop will help in finalizing it, leading to the full scale preparation phase of the project proposal.

Background

In support to the goals and objectives of the New Partnership for African Development (NEPAD)'s Comprehensive African Agriculture Development Program (NEPAD- CAADP), particularly those relating to improved water management and food security (CAADP Pillars 1 and 3), the African Development Bank (AfDB) approached the FAO Investment Centre (FAO/TCI) in July 2004 to request assistance in the preparation of a regional programme in southern Africa.

Subsequently, several preparation activities took place, including:

- The preparation of a Concept Note and its adoption at the NEPAD –CAADP meeting in Maputo in February 2005
- The confirmation of formal requests to participate in the programme by 9 SADC main land countries
- A tripartite meeting between SADC, AfDB and FAO in April 2005 during which priority river basins were selected, among which the Upper Okavango together with the Mid- Zambezi and the Shire River-lower Zambezi.
- Preparation work which subsequently started with the appointment of National Coordinators in the two countries (Angola and Namibia) involved in the Upper Okavango with the aim to lead the preparation process. During the selection process in April 2005, Botswana confirmed that they would prefer to be involved in the Mid- Zambezi basin and would be glad to let Angola and Namibia pursue the opportunities offered by the Upper Okavango.
- National Working groups were also established by the National Coordinator to lead the preparation process.
- The appointment of a River Basin Coordinator and one National Consultant for each country to assist the National Coordinators in these tasks. The National Consultants initiated the preparation work from October/November 2005 as described in the introduction above.
- The first meetings of the National Working groups took place in November 2005, quick starting the preparation process in both Angola and Namibia.

The Okavango River Basin: an overview

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 average of 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. These two tributaries are located in Angola, with the Kubango or Kavango serving as the border between Angola and Namibia in its middle before joining with the Kuito, crossing the Caprivi Strip and discharging into the delta in Botswana.

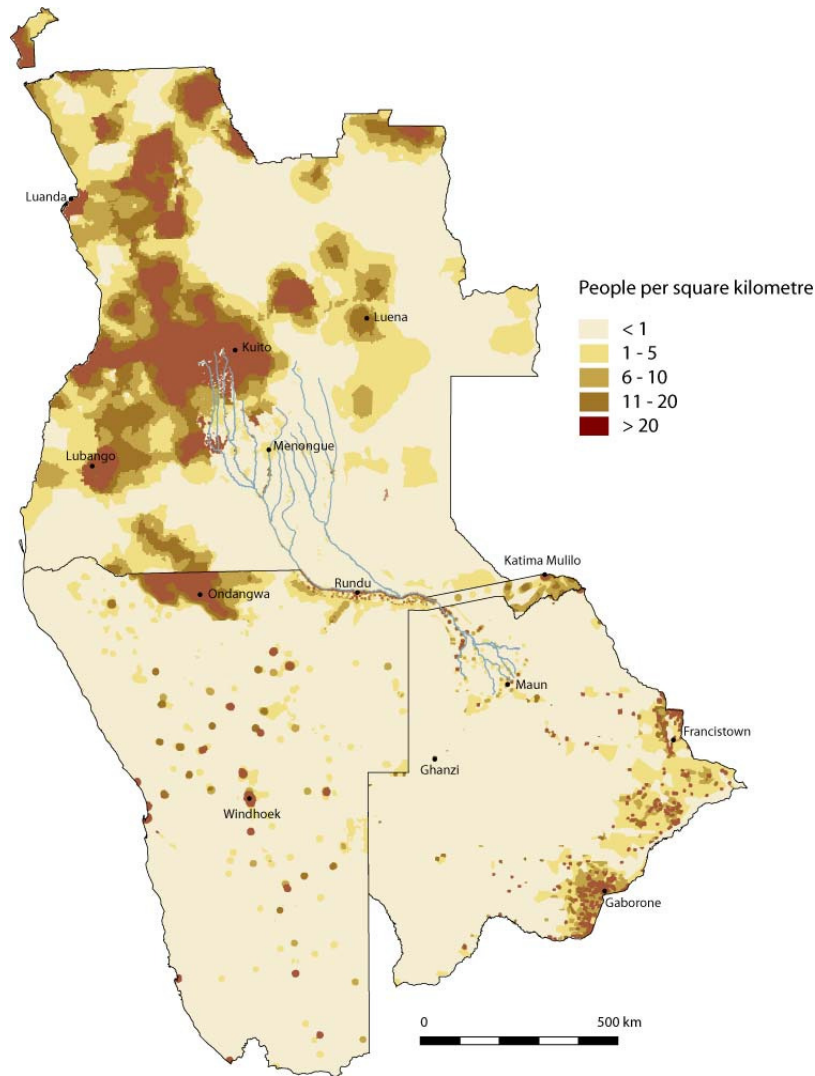


Figure 1: The Okavango River within the three co-basin states

In addition to the features of the ORB presented Table 1 below, it can be stated that:

- The ORB is located far away from the major human settlements of the three countries, namely their capital cities Luanda, Windhoek and Gaborone.
- In Namibia, populations have grown rapidly in a strip of a few kilometers along the Okavango River, this strip represents the main area of interest for Namibia
- Development potentials that are obvious in the upper reaches of the ORB in Angola can only be unlocked if the roads are rehabilitated and land mines removed.

- The soils are poor in its middle reaches in both Angola and Namibia; however, opportunities for high value crops and fish farming, both combined with tourism cannot be overlooked.

The key features of the Okavango River Basin are grossly summarised in Table 1.

	Angola Catchment	Namibian (Middle reaches)	Botswana	Comments
Nutrient loads	High in upper reaches Low in the middle reaches	Low	Rich in the delta	
Rainfall	High	Moderate	Low	
Water availability	Abundant	Low	Low	
Water value	Low	High	High	Great potential for higher value in Angola
Economic activity	Subsistence	Subsistence Irrigation Some tourism	Tourism	Good potential for irrigation in Upper reaches in Angola
Value added to water	Low	Moderate	High	Potential for higher added value in Angola and Namibia

Recent developments in the ORB

Greater awareness of the value of an integrated management of the ORB is evidenced by the establishment of the Okavango River Commission (OKACOM) since 1994 and several initiatives that are community driven. The Every River Has its People project (ERP) provides a platform to stakeholders from the three countries for 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 are the Integrated River Basin Management Programme (IRBM) and the GEF funded Environmental Protection and Sustainable Management in the Okavango River Basin (EPSMO) Project. The EPSMO 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 with these initiatives need to be established to avoid any duplication.

Key principles relevant to the ORB

In initiating the preparation work, it was acknowledged that the ORB is unique and that guiding principles that would steer the project preparation process were needed. The following principles were therefore formulated:

1. *Maintaining and maximising the environmental wealth of the Basin*
 - a. Water availability in much of the Basin is clearly limited.
 - b. The supply of good quality water to the Delta is of paramount importance because (a) the Okavango Delta is the world's largest RAMSAR site, (b) Botswana has invested considerably in its conservation and development of a significant tourism industry in the Delta, (c) the Delta is internationally well-known and famous, and (d) it harbours a rich fauna and flora
 - c. Some economic activities, particularly high-value tourism, are dependent on the preservation of the Basin's natural environment; thus, the choice of an industry must consider potential trade-offs and opportunity costs.
 - d. Economic activities that maximise value added (employment and income generation) per water use are to be preferred

2. *Maximising economic benefits from the Basin*
 - a. Development of the Basin economy should be on free-market principles to build regional and international competitiveness.
 - b. Long-term perspectives should be adopted, rather than quick-fix attempts to reduce poverty.
 - c. Economic activities should build on the Basin's relative comparative advantages.
 - d. The private sector (large and small-scale entrepreneurs) should be the main drivers for economic development.
 - e. Economic development should be "demand-driven"
 - f. Governments and regional authorities should create the enabling environment to develop a healthy and sustainable Basin economy.

3. *Bottom-up wealth creation*
 - a. "Cash security" is much more important than "food security".
 - b. Wealth should be created and vulnerability reduced by building a dynamic regional economy rather than focussing on improving food availability.
 - c. Investments should aim to open up new livelihood choices that allow people to move away from dependence on subsistence agriculture and fishing.
 - d. Trickle-down effects should be maximized.
 - e. Benefits (incomes and employment) derived from the Basins resources should be distributed as equitably as possible.
 - f. Promoting local level ownership and control of resources (e.g. through conservancy approach)
 - g. Promote partnerships between small- and large-scale entrepreneurs for mutual economic benefits.

4. *Basin-wide approach*
 - a. Investments should aim to maximise benefits for the residents within the Basin.
 - b. Investments should be evaluated with respect to their positive and negative impacts across the whole Basin economy, taking into consideration that negative impacts are likely to create backlashes elsewhere.
 - c. Potential conflicts based on inequitable access to water and other resources of the Basin should be avoided for the sake of long-term economic security.

Goal, Objectives and TARGET GROUP of the SADC AWMFS PROJECT IN The ORB

A Vision for the Okavango River Basin in the context of SADC

A Vision for the Okavango River Basin in the context of this project would be ‘to develop the economy of the whole Okavango Basin for the benefit of its people by building on the Basin’s comparative advantages, while enhancing and preserving its assets and promoting the economic integrity of the Basin’.

This vision would be compatible with the SADC goal of regional integration and poverty eradication. SADC’s goal is “the attainment of an integrated regional economy on the basis of balance, equity and mutual benefit for all Member States”. This SADC goal is applicable in its entirety to the ORB and the proposed project.

The objective of the project should therefore contribute to this goal, considering its trans-national dimension and the fact that it hinges around the development of the water resources of a shared river basin. In this respect, the provisions of the SADC Protocol on Shared Watercourses and its concept of ‘benefit sharing’ should prevail.

The objective of the proposed project

The SADC AWMFS Project in the ORB would have the objective of achieving food security in the river basin through efficient water use in agriculture by pursuing all opportunities related to the agriculture sector in its broadest sense – agriculture, livestock, fish farming - and including all associated enabling and supporting activities such as institutional strengthening, capacity building, access to markets, adequate transport infrastructure and storage facilities, post harvest processing, access to funding, etc. All these items would therefore be further unpacked into the major components of the project as identified through the preparation process that has led to this Concept Note.

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

In the recent past, the ORB has also seen the emergence of community based natural resources management (CBNRM) projects such as for natural resource ownership and management, tourism, conservancies and craft centres supported by the ERP project.

The opportunity of Joint Ventures and Partnerships should be explored. It is likely and imperative that entrepreneurs in the private sector are identified and attracted, to drive trade and the processing of agriculture produce.

Major proposed project components

The proposed project components are divided in two broad categories: (1) the first category consists of the core activities that are directly related to the objectives of the project and (2) the second category consists of activities that create an enabling environment for these core activities

to take place. It is however acknowledged that there are linkages and interrelations between the various categories and that this classification should allow for overlaps.

In the first category, the following intervention areas were identified:

- Tourism⁴
- Agriculture Food Production
- Fish Farming and Freshwater Aquaculture
- Infrastructure Development

In the second category, the following areas were identified as supporting the above core intervention areas:

- Branding of the ORB
- Promoting the reputation and image of the Basin
- Developing an ORB Investment Fund
- Promoting Cross Border Collaboration
- Land Tenure and Community Ownership of Natural Resources Management

In addition to the above, the two workshops organized in the river basin stressed that the following were key to the success and relevance of the proposed project:

- Capacity Building in Specific Areas such as Fish Farming and Agriculture Management
- Priority to Cash Security within the River Basin
- Value Adding and Processing within the River Basin
- Producing High Value Crops or Natural Resources Specific to the River Basin
- Integration with all other initiatives in the river basin

From the above, the following four main intervention areas are proposed:

1. Agriculture production; livestock and fish farming for cash security within (and later outside) the ORB
2. Value adding, processing and promoting the identity of the basin through branding and using those high value crops and natural resources that are unique to the ORB
3. Capacity building for improved agriculture management and fish farming in order to achieve sustainability, greater efficiency and competitiveness on the market
4. Infrastructure Development, especially roads and a bridge across the River at Rundu, water storage and distribution including warehouses (to support value adding) and markets

In addition, the following support intervention areas are further proposed:

5. Financing through the creation of an ORB development fund to support these above activities
6. Institutional Strengthening targeting the empowerment of community-based organizations and public private partnerships
7. Project Management

These intervention areas are each now discussed separately in Part II of the draft PCN with the proposed areas and estimated scale of intervention.

⁴ Though tourism falls outside the scope of the proposed project, it is a key feature of the ORB and its development will benefit the agro-industry sector, not only because of the market that it creates for the consumption of the agriculture products of the ORB, but also because of the opportunity for sharing the road infrastructure.

PART II: DESCRIPTION OF THE PROJECT INTERVENTION AREAS

1. MAIN INTERVENTION AREA ONE: AGRICULTURE PRODUCTION, LIVESTOCK, FISH FARMING

The purpose of this intervention area is first to achieve food security within the river basin and then to supply raw products for processing (intervention area 2) for export outside the river basin.

1.1 Agriculture Production

Several crops grow in the Upper ORB and include sorghum, millet, maize, Irish potatoes, maize, beans, groundnuts, sweet potato, cassava and banana. The main staple food is maize, millet and cassava depending on specific locations within the upper ORB.

It is proposed that as part of the preparation phase, a detailed inventory of the opportunity and suitability of each crop in the upper ORB is carried out in order to recommend areas where each is best suited and the supporting inputs required.

Activities to improve agriculture production would include:

- Provision of seeds
- Provision of fertilisers
- Improving irrigation to reduce vulnerability as rainfed agriculture is the most practiced in the upper ORB.

1.2 Aquaculture and Fishing

Opportunities for both fishing from the streams and aquaculture exist in the Upper ORB. In Namibia, there are three small farms along the river in Kavango, but these suffer as a result of being managed as cooperatives by the government. They were also initiated in a “top-down” fashion. A fisheries research institute is being established near Bagani in Kavango. Several successful businessmen in Kavango and elsewhere have already indicated a strong interest to start farming with fish.

Apart from fish farming, the possibility of using the proposed dams (see section 4.4) for fishing should be investigated.

Activities to promote aquaculture and fishing would include:

- Capacity building in fish farming/aquaculture to improve management
- Introduction of fish species in storage dams
- Support managed fishing along rivers

1.3 Livestock

The opportunity for livestock production exists in the Upper ORB. Already, a tradition of cattle farming exists although its value is mostly as a sign of wealth rather than for food security. Livestock production is limited, one constraint being restrictions on export marketing due to veterinary controls in Namibia. The potential for reintroducing sheep, pig and poultry farming which existed in Kuando Kubango before the war in Angola should be investigated. Livestock ownership by households not only holds the potential for improved food security but also for generating cash. Experiences of introduction of livestock in other parts of Angola could be studied for replication in the upper ORB.

1.4 High value crops

High value crops that could contribute to food security in the river basin consist mainly of fruits such as mangos, avocados and (dried) vegetables. The opportunity for their production should be pursued.

2. MAIN INTERVENTION AREA TWO: INCREASED VALUE OF OUTPUTS

The purpose of this intervention area is to ensure that all value adding of any raw products from ORB is done within the river basin and in the process promote the identify of the basin through proper branding of the goods processed in the ORB. Intervention area is therefore about creating a vibrant agro industry sector in the ORB.

2.1. Processing of agriculture production including fish and livestock

All the products mentioned in the first intervention area can be processed and preserved for export outside the ORB. The introduction of such processing facilities such as milling equipment and capacity building and institutional set up required for the sustainability of the activities proposed under this intervention areas need to be investigated. Already the government of Angola is considering introducing agro industries in selected areas. Entrepreneurs near Rundu in Namibia have also recently acquired milling equipment for maize. The current constraint on exporting of livestock because of veterinary barriers can be overcome by processing meat, milk and other related products.

2.2. High value crops and natural resources unique to the Basin

Specific high value crops or natural resources hold the potential for generating cash in the ORB. Such crops could include onions, fruits and others. In addition, the following could be included:

- Horticulture
- Forestry (in Angola)
- Identification and production of new / less conventional crops (e.g. biofuel from cassava and jatropha).
- Production and marketing of high value indigenous plant products (e.g. mangetti oil and wild honey in Angola).
- Bee keeping and processing honey.
- Wood carving and basket making in the ORB

Feasibility studies into the viability of some of the above (such as biofuel production) would be required as part of the preparation phase.

2.3. Branding of the ORB through processing

All processing should lead to the branding of the ORB products through proper packaging using an agreed upon brand. This will give a unique identity to the products of the ORB and contribute to tourism which will in turn contribute to greater economic activity in the ORB, including agriculture.

The opportunity to create a trademark name or slogan for the products of the ORB for marketing purposes will be investigated and pursued.

3. MAIN INTERVENTION AREA THREE: CAPACITY BUILDING AND INSTITUTIONAL STRENGTHENING

Most of the above (from intervention areas 1 and 2) require institutional strengthening and capacity building for different areas. The purpose of this intervention area is therefore to ensure that adequate capacity is created both technical and managerial functions to ensure the sustainability of the proposed activities. In addition, specific training in food technology to support processing might need to be provided. All of this must be demand-led and done in conjunction with the private sector, thus leading to the long-term economic development of the ORB.

3.1. Best Practices and Irrigation Efficiency methods

Training of small holder farmers and community organizations involved in agriculture will take place to provide the skills needed to improve productivity through best practices and irrigation efficiency methods. An assessment of the needs on the ground will guide in the identification of kind of training required.

The study by IWMI on the Agriculture Water Management Technologies for small-scale farmers in southern Africa will serve as appropriate.

3.2. Aquaculture, Fish farming

Training in aquaculture and fish farming will be provided to ensure that, like for agriculture, productivity is improved and capacity is available for the wide scale dissemination of this practice in the ORB.

3.3. Institutional Strengthening and Management skills

Institutional Strengthening

A survey of the existing institutional capacity to support the proposed project will have to be carried out; it is likely to reveal that difference exists between the two countries and that gaps specific to each country will require tailored interventions. It is however proposed, over and above these, the creation of an ORB institutional body that would oversee the implementation of the project and which would continue to exist beyond the lifetime of the project to pursue other opportunities that will arise in the future.

Such an institution is likely to be a partner to the Okavango Commission (OKACOM), but with a business and technical orientation, not only to promote the identity of the ORB, but to ensure its coordinated development by initiating projects and supporting them. The institution would also ensure that the ORB is developed in a consistent, coordinated and sustainable fashion with the interests of the people of the ORB across the three countries at heart.

The establishment of this institution should be based on the experiences of projects such as the ERP (the only project now based within the ORB) which has been on the ground for a number of years. This institution might first start as the Project Implementation Unit with the development of management (administrative, financial and marketing skills) which will be required at relevant levels to ensure that projects are run in a sustainable manner, especially if a business approach is adopted.

3.4. Training in food technology

Training related to several aspects of the agro industry, especially related to food technology, processing and packaging and running the different machineries that would be used in the industry might need consideration.

4. MAIN INTERVENTION AREA FOUR: INFRASTRUCTURE DEVELOPMENT

Infrastructure can be considered as the backbone that is key to the success of the project. It is, however, recognized that some aspects such as main roads, bridges cannot be possibly funded by this project but would greatly benefit from it. The project should raise the profile of the ORB with the hope that other infrastructure focused initiatives, especially in Angola, will prioritise the ORB. It would then be hoped that such infrastructure development takes place concurrently with the other components of the project. Other infrastructure for water storage and distribution, energy supply, warehouses, small scale processing plants and markets can be considered as an essential of the project.

4.1. Rehabilitation of key transport linkages

Main roads

Several main roads need to be rehabilitated in order to serve the needs of the proposed project. These are mostly located in Angola. The railway infrastructure would equally need to be rehabilitated. Key roads include the one from Menongue passing Katwiti to Namibia (Rundu) which is in bad condition. Several roads linking the provinces of Kuando Kubango, Kunene, Huila and Bie need to be rebuilt. The railway from Lubango to Kuvango-Cuchi and Menongue is also not operational.

Clearly, these roads and railways have to be seen as part of a broader infrastructure rehabilitation programme by the government of Angola and SADC which is greater than the scope of this project but would have a critical impact on its success.

The project would therefore undertake an inventory of such rehabilitation programmes in order to identify which roads and railways are likely to become functional on time to serve the needs of the project. A coordinated approach with the institution in charge of this programme will be required.

Such a rehabilitation programme would also presuppose that the demining programme is also undertaken along those roads that still pose a safety hazard in Angola.

If the project is in a position to contribute to this effort, then the road from Menongue to Rundu should receive priority.

Bridges

As part of the above of the road and railway rehabilitation programme, bridges need to be rehabilitated or built afresh. This is also somehow outside the scope of this project. Should the project be in a position to fund a bridge, then it would be the bridge joining Angola and Namibia between Rundu and Calai across the Okavango River. This would be part of the road from Menongue to Rundu.

Feeder Roads

Feeder roads will be required mostly in Angola to facilitate transport of agriculture produce to markets and place of processing or exports. The need for feeder roads is somehow unlimited and a prioritization exercise will need to be undertaken based on considerations such as the need for quick gains to demonstrate the benefits of the project and stimulate replication in other parts of the river basin.

4.2. Agriculture water storage and distribution

Irrigation schemes will depend on reliable water supply. Storage of water is therefore critical, especially during periods of low rainfall or droughts. There are several options that have been identified in both Angola and Namibia such as the possibility of storing flood water in a off channel storage infrastructure such as Ndonga Linena Muramba in Namibia or the rehabilitation of Cambumbe's dam in Kuando Kubango in Angola and the Missombo Irrigation channel. Three small dams on the Cuchi and Cuelel rivers in Angola have been proposed to support irrigation.

4.3 Energy

Energy inputs for pumping water, processing of all products and servicing warehouses and markets will be required. As far as possible, irrigation by gravity will be encouraged, but the opportunity for small hydro power plants in the upper reaches of the ORB will be investigated. Other options include biofuel from cassava and jatropha as mentioned earlier.

4.4 Markets, storage and processing

With regard to markets, storage facilities, warehouses and small scale processing plants, several markets exist in the outskirts of several consumption centers or along main national roads. These markets, however, consist mostly of makeshift infrastructure and providing a mix of products, some perishable or semi perishable, some processed products (food and others,) that are mostly imported, and with no warehouses, storage facilities and no nearby processing plants.

The need is there to provide adequate markets to support the commercial activities that will result from the revived agriculture activities. Storage facilities around the market including for the conservation of perishable and semi perishable goods and small scale processing plants will require energy inputs. The proximity of such plants and storage facilities to the markets might be dictated by the need to ensure that the provision of energy is centralized in one point if a widespread distribution of energy at the production farms poses a constraint.

All the above will require further investigation in the formulation of the detailed project proposal.

5. FUNDING

Apart from the four main intervention areas above discussed, the project will the critical support of a revolving fund to support entrepreneurial initiatives supporting the project and promotional activities that lead to the overall economic development of the Okavango Basin. Several funding mechanisms exist from formal arrangements with banking institutions for loans or micro credits to grants through cooperatives. In kind loans (for inputs such as seeds and fertilizers or cattle) have been provided in other parts of Angola and the opportunity to replicate this experience in this project should be investigated. It is felt that a flexible approach should be adopted, commensurate with the needs and constraints on the ground. The arrangements might not be uniform but would depend on the profile of the borrower or recipient of the grant.

It is therefore proposed that an Okavango Development Fund is established. While it would serve the needs of the project, it should be flexible enough to accommodate other initiatives that are indirectly related to the project or critical to the development of the ORB. Supporting trade for example cannot be limited to agriculture products but should consider also tourism related activities.

This fund would a revolving fund which will be replenished through the re-imburement of loans but also the payment of a levy associated with the branding of the ORB by all the economic activities in the ORB. This establishment and functioning of this fund will have to be investigated in the formulation phase of the full project proposal.

6. PROJECT MANAGEMENT AND COORDINATION

6.1. Project Management

To achieve the interventions proposed in this Concept Note, a Project Implementation Unit needs to be established. It would ideally comprise citizens from Angola and Namibia with a steering committee on which Botswana (or the OKACOM) would have a seat. The following functions and sub units in the Project Implementation Unit are proposed.

- Project Management
- Technical sub Unit (Agriculture, livestock and fisheries)
- Technical sub Unit (Processing)
- Funding sub Unit (Loans, micro credits, grants)
- Marketing sub Unit (Marketing, Branding)
- Administration and Finances
- Secretariat

The PIU would report to the Steering Committee of Basin residents which would have representatives of the AfDB and FAO.

A Project Manager would first be appointed and, in consultation with the Project Steering Committee, he will propose that the other functions are progressively filled in as the project unfolds. Ideally, the project should first be hosted by an established institution while investigating the opportunity to become independent. The TORS of all the above will be developed during the Project Proposal phase.

6.2. International Coordination Mechanisms

Considering the international nature of the project within the ORB and as part of a programme that includes other river basins, mechanisms of coordination of activities through meetings, reporting, information sharing, etc...will have to be developed during the implementation of the project.

6.3. Monitoring and Evaluation

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. These will depend on the lifetime of the project which should span over a period of 5 to 10 years.

7. PROPOSED BUDGET

A tentative total budget of USD 58 millions (fifty eight millions US dollars) is proposed with USD 35 millions for Angola and 23 millions for Namibia. See attached spreadsheet for detailed breakdown. This budget includes a revolving fund of 5 millions which will be replenished through repayment of loans and levies. The budget is a rough estimate and will change during the project proposal phase.

ANNEXURES: BACKGROUND DOCUMENTS

Several notes were prepared to assist in the compilation of this PCN, including reports of site visits and outcomes from the stakeholder workshops. These are provided in these annexures with more details than provided in the PCN. Annexure 1 provides documents prepared by Namibia while Annexure 2 provides documents prepared by Angola.

ANNEXURE I: NAMIBIA: NOTES ON PROPOSED INTERVENTION AREAS (Compiled by John Mendelsohn and Marie Karaisl)

FOOD PRODUCTION

Overall objective

To promote cash security through food production and processing, to reduce the need for food imports, and to achieve maximum value from farming enterprises.

Current status

- Small scale rain-fed cropping of maize, cassava, sorghum and vegetables
- Currently, about 1,400 hectares are under irrigation in the Basin. The Namibian government plans to increase this to over 10,000 ha along the Okavango River.
- Livestock production is limited, one constraint being restrictions on export marketing due to veterinary controls

Investment options

- Identification and production of crops that have high value and require minimal irrigation and other environmental impacts, e.g. mangos, avocados, dried vegetables.
- Promotion of processing and packaging facilities to add local value.
- Certification, branding and marketing to add further value to suitable products.
- Identification and production of new / less conventional crops (e.g. biofuel from cassava and jatropha).
- Production and marketing of high value indigenous plant products (e.g. mangetti oil and wild honey in Angola).
- Development of methods to irrigate more efficiently and to enhance productivity, e.g. minimum tillage / conservation farming.
- Establishment of supply chains across the Basin to maximise comparative advantages and economies of scale.

Potential benefits

- Productivity of farmers and their access to cash is enhanced.
- Dependence on imported foods is reduced, and food security is strengthened.
- Income generation through commercialisation of cropping and creation of jobs.

Constraints

- Poor environmental conditions: soil quality, pests, low and unpredictable rainfall
- Poor market access due to long distances and low demand.
- Low levels of managerial and technical skills.
- Conflicts between expanding agricultural development and other activities.
- High costs of inputs: labour, fertilizers, electricity and water
- Low security of land tenure, particularly for capital intense investments.

Aspects to be followed-up

- Investigate and test production of high value crops.
- Investigate markets, branding and export possibilities.
- Investigate appropriate ways to maximise value added to water consumption

FISH FARMING / FRESH WATER AQUACULTURE

Overall objective

To develop the commercial production fish (tilapia and perhaps other fish) for local and national consumption and for export.

Current status in Angola and Namibia

None known to us in Angola. There are three small farms along the river in Kavango, but these suffer as a result of being managed as cooperatives by the government. They were also initiated in a “top-down” fashion. A fisheries research institute is being established near Bagani in Kavango. Several successful businessmen in Kavango and elsewhere have already indicated a strong interest to start farming with fish.

Investment options

- Low interest loans could be used to encourage entrepreneurs to establish fish farms (the capital cost of a medium-sized farm amounts to US\$150,000 to US\$200,000).
- Funding could be needed to train entrepreneurs and labourers in fish farming.
- Additional funds might be used to establish cold-storage facilities and export chains to major centres in Angola, Namibia, and elsewhere.

Potential benefits

- Each farm should generate several jobs, perhaps 5 jobs at small farms and up to 30-50 at bigger ones.
- Other employment could be generated through spin-off industries, including: fish feed production, processing and packaging, transportation and equipment (pumps, nets, cages, etc.).
- Local demand for fresh fish seems to be high; for example 5,000 kilograms were sold in less than 2 hours on a street in Windhoek; Namibia’s fish consumption increased from 4 kg to 8–9 kg per head from 1990 to 1995.
- Tilapia is now sold at about US\$2.50 per kilogram in Namibia. A medium-sized farm might produce 15,000 to 20,000 kilograms per year, generating gross annual revenues of US\$40,000 to US\$50,000.
- Fish certified as produced under organic conditions could be branded as “Okavango in Origin” and exported for sale at higher prices.
- There is potential for integrating fish farms with the production of vegetable, fruit, chickens and other food products.
- Environmental impacts are likely to be small.

Constraints

- Fish food is currently imported at high costs, resulting in marginal profits, but fish food may soon be produced in Namibia at lower costs.
- Successful aquaculture requires a high degree of managerial capacity and skills.
- Marketing infrastructure needs to be developed.

Aspects to be followed-up

Further cost-benefit analyses are needed, especially to assess market demands and export opportunities.

INFRASTRUCTURE DEVELOPMENT

Overall objective

To improve access and services in the Basin, thus stimulating further development of industries, tourism and services

Current status in Angola and Namibia

Transportation systems, electricity, telecommunications and commercial centres are fairly well developed in the Namibian section of the Basin. Conditions in Angola are much poorer: few roads are tarred or safe for travel, in many areas there are no recognised roads or tracks, electricity is only locally or privately available; and few centres offer commercial activity or social services. In both the Angolan and Namibian sections of the Basin, there are no direct, rapid access routes to export markets elsewhere in these countries, other southern African centres or the world.

Efforts to improve access are now being made in both countries. The Government of Kuando Kubango intends to reconstruct a bridge between Cuangar and Nkurenkuru, the railway from line from Kuvango to Menongue will ready by August 2007 and will then be extended to Cuito Cuanavale and eventually into Moxico. The Namibian government is tarring the road from Eenhana to Rundu, and building a new gravel road to connect Katwitwi with Tsumeb. An Export Processing Zone is planned for Katwitwi.

Investment options

A number of infrastructure developments would make a great difference to the Basin, for example a bridge between Rundu and Calai, a road from Calai to Cuito Cuanavale and/or Menongue, or the reconstruction of roads from Menongue to Cuito Cuanavale, from Katwitwi to Caiundo, and from Kubango to Menongue. The upgrading of the Rundu airport would allow for the rapid transfer of goods and people in and out of this centrally located emerging city.

Potential benefits

Improved access would open up the Angolan section of the Basin to tourism and other developments. Exports from the Basin will be easier, thus generating economic growth.

Threats and constraints

Even though it seems that obvious that Angola suffers from inadequate infrastructure, it is not certain how much economic, industrial, social and other development would immediately follow if services were improved. This is because that part of the country is remote from the rest of Angola, the population is relatively small, and agricultural potential is limited. These constraints suggest that economic development may not come that readily to *as terras do fim do Mundo* – the place at the end of the earth.

Aspects to be followed-up

Further feasibility studies are required to assess the viability and desirability of varied infrastructure developments in these areas of the Basin

PROMOTING THE IDENTITY OF THE BASIN

Overall objective

To uplift the profile and image of the Basin, thus enhancing its value as an attraction to tourists and investors, and securing its integrity as a geographic feature of international importance.

Current status in Angola and Namibia

Even though most of the Basin lies in Angola and Namibia, most people in the world would not associate the “Okavango” with these countries. In fact, relatively few people would even know that the Okavango’s waters originate in Angola and that some of the most spectacular areas of the Basin are in Angola.

Quite the opposite is true for the Botswana section of the Basin. Here the Okavango is renowned internationally, having attracted hundreds of thousands of visitors, and having been the subject of countless magazine articles, books, films and scientific studies. In short, the Okavango in Botswana has a very high profile. Around the world it is famous!

Investment options

Use African Development Bank funding to embark on a multi-pronged advertising and promotional campaign to bring the Basin to the attention of the world. The campaign should focus on the beauty of the Basin, its potential and attractions, and its pristine condition. The services of people experienced in the advertising and media industries should be used for this high-profile campaign.

Potential benefits

- The value and integrity of the Basin would be enhanced, thus helping to ensure that the central governments of Angola, Namibia and Botswana pay greater attention to its development and protection.
- Tourists and investors would be attracted to the Basin, bringing wealth, development and expertise that would benefit people living in the Basin.
- A high profile would help promote sales of foods and other products branded as “Okavango in Origin”, thus increasing the economic value of the Basin.

Threats and constraints

The whole idea and concept of marketing the image of the Basin, its products, and its economic development and integrity will require considerable will power, energy and enthusiasm. Failure to adopt such an energetic stance may bring discredit to many efforts now being advanced in the name of the Okavango and its residents.

Aspects to be followed-up

Use African Development Bank funds to develop and implement a targeted project to market and enhance the profile of the Okavango.

BRANDING THE BASIN

Overall objective

To increase the value of food and other products from the Basin by marketing them under an “Okavango in Origin” branding name, which would certify the products as being from a special, remote and pristine environment, and perhaps as organic products.

Current status in Angola and Namibia

None. Note that the Okavango in Angola and Namibia is hardly known. Although the Okavango Delta is not branded, it carries something of a brand name as a world-famous attraction and site for Botswana.

Investment options

- African Development Bank funds could be used to identify, promote and market goods branded as “Okavango in Origin”. This should continue over a number of years until such time as the concept is self-sustaining, the goods and brand name having achieved widespread usage.
- Goods that might be branded and marketed could include craft, fruits and fruit products (such as mangetti oils and liquors), fish, wild honey (especially from Angola) et cetera.
- Although transport constraints may make it hard to market some products as fresh, others could be preserved and sold as dried foods.

Potential benefits

- The value of products and exports would be enhanced and greater economic benefits would accrue to Basin residents.
- The identity and value of the Basin would be promoted.

Threats and constraints

It may be difficult to produce and market enough high-quality products under “organic” conditions, since many foods may require pesticide treatment.

Aspects to be followed-up

- Investigate the potential for growing or producing products that could be marketed as “Okavango in Origin”.
- Once sufficient products are available, start an advertising campaign to market the exports.
- Engage the services of marketing and advertising expertise to see how this could be done.

OKAVANGO INVESTMENT FUND

Overall objective

To establish a funding mechanism for entrepreneurial projects and promotional activities that lead to the overall economic development of the Okavango Basin.

Current status in Angola and Namibia

None, although Namibia has some experience in establishing an Environmental Investment Fund, and micro-credit facilities have been available to small-scale farmers in Angola. Lessons can be learned from these experiences.

Investment options

- African Development bank funds would be used to establish the fund and initial capitalisation.
- The Fund would make available capital for investments in the Okavango Basin, usually as low-interest loans. This innovative mechanism could stimulate business and economic development through the private sector.
- The selection of investments would be based on criteria, such as sustainable natural resource use, economic viability, job creation and community partnerships.
- Funds could be replenished through interest earned on loans, donor funds (e.g. GEF), and other sources that need to be explored.
- The Fund should be managed locally in the Basin by credible representatives of its residents.

Potential benefits

The Fund would disburse funds as low interest loans to initiate businesses that lead to long-term economic development within the Basin, and that promote the integrity and environmental health of the river system. Particular incentives could be built in to reward borrowers who engage in knowledge and technology transfer and integrate small-scale entrepreneurs into their operations.

To manage and secure these loans, the Fund would guide and support developments to enhance their success. In parallel, the Fund could be used to promote the Okavango Basin and the “Okavango in Origin” branding for its products.

Constraints

Some government officials may perceive the Fund’s activities as a threat.

Aspects to be followed-up

- Further investigate the viability of such a Fund and the possibilities of obtaining start-up funds.
- Develop clear policy positions for the Fund and target groups, especially to ensure that the Fund does not replace government investment activities.
- Establish protocols to ensure that the Fund operates in parallel to activities promoted by the three governments, but also remains independent of national interference.

CROSS-BORDER COLLABORATION

Overall objective

To promote and enable greater freedom of movement by tourists and goods across the Angola-Namibia border, thereby boosting the economic development and integrity of the Basin.

Current status in Angola and Namibia

The cross-border movement of goods and tourists is restricted by regulations that limit the free-flow and growth of commerce within the Basin.

Investment options

Ways of lifting restrictions and promoting the free flow of people and goods within the Basin should be investigated. Relevant government departments should be consulted and encouraged to amend travel and trade limitations. Special allowance should be made for tourists to the Basin as a whole.

Potential benefits

- The tourism industry would be enhanced because investors will find it easier to attract visitors and to develop lodges and camps, especially in Angola.
- The possibility of promoting tourism routes across the Basin would be enhanced.
- The marketing and processing of goods produced within the Basin would also be enhanced, giving producers access to bigger markets and economic benefits.
- Processing industries would be stimulated because of the effects of economies of scale.
- The easing of restrictions to cross-border movement would go hand-in-hand with the overall promotion and branding of the value and image of the Basin, and the development of the Basin as an economic unit that brings benefits to its residents and the three countries.

Threats and constraints

- Central governments may perceive that they have less control on trade the movement of people, and may lose some taxation revenues.
- Illicit movements and trade may increase.

Aspects to be followed-up

Use African Development Bank to investigate mechanisms used elsewhere in the world to encourage free movement and trade across international borders in localised or special areas.

Engage in dialogues with the Angolan and Namibian (and Botswana) governments to develop mechanisms to promote the easier movement of tourists and goods across borders within the Basin.

LAND TENURE AND COMMUNITY OWNERSHIP AND MANAGEMENT OF NATURAL RESOURCES

Overall objective

To give residents of the Basin rights over resources, secure tenure over their land, and the opportunity to obtain greater benefits from the Basin's natural resources.

Current status in Angola and Namibia

Most people in the Basin areas of Angola and Namibia have traditional "user" rights over land and natural resources. These rights and resources can easily be exploited or expropriated by more influential groups or individuals. Several conservancies and community forests have recently been established in Kavango to give local residents rights and opportunities to gain economic benefits. An equivalent system of natural resource management has been established in Botswana over many years.

Investment options

- Use African Development Bank Funds to create conservancies in Angola.
- In consultation with the central and provincial governments in Angola, create appropriate policy and legal frameworks for local residents to gain ownership over land and natural resources.
- Promote the viability of partnerships or joint ventures (JVs) between communities and the private sector. These amount to formal agreements established between the private sector and communities or community-based organisations.
- Create an enabling environment and legislation for JVs in the tourism industry and other sectors.
- Provide support to local communities in setting up JVs, management systems and plans, craft centres, community campsites and other facilities.

Potential benefits

- Basin residents have greater security of tenure over land and natural resources.
- Economic benefits accrue to Basin residents, including more jobs, reaping economies of scale, enhancing business viability, and bridging skills gaps with respect to business management and marketing.
- Residents manage natural resources more effectively to safeguard their economic and environmental value.
- Residents are less likely to lose their rights and resources to influential outsiders.
- Private sector investors gain security of their investments.

Threats and constraints

Influential businessmen and outsiders may lose opportunities to pursue investment options from which they alone would largely benefit.

TOURISM

Overall objective

To promote and develop the whole Basin as a tourist destination, and to promote linkages and routes between the Angolan catchment and the Delta, with a particular focus of integrating communities into the tourism industry and maximising income and employment creation through spin-off enterprises.

Current status in Angola and Namibia

Tourism in the Angolan catchment hardly exists, although several entrepreneurs based in Kavango are attempting to develop camps and routes for visitors. Much of the Angolan catchment is wild and pristine, and very beautiful. Few large mammals and other conventional attractions are available for potential tourists, however.

In Kavango, tourism is largely concentrated in the east around Popa Falls and Mahango Game Reserve. Elsewhere and to the West, most tourist venues cater to visitors who are passing through en route to or from attractions elsewhere in Namibia and Botswana. There are about 24 lodges, hotels and rest camps with a capacity of 686 beds (excluding campsites) in Kavango. The region attracted 37,860 visitors in 2002, or about 103 tourists per day, compared to an estimated 350 tourists passing Otjiwarongo every day. Other than restaurants and accommodation, few other activities are offered in Kavango. Community-based tourism is now limited. A Tourism Forum has been created to promote the development of the tourism industry in Kavango and the Basin as a whole.

Investment options

- Marketing of tourism and support for route developments, especially to link the famous and well-developed industry in the Delta with the pristine Angolan catchment.
- Institutional and policy development to facilitate cross-border tourism.
- Creating enabling environment for community-based tourism through (a) building skills for the tourism industry and (b) the promotion of Joint Ventures between communities and the private sector.
- Support for the conservation of attractions for sustainable use
- Development of 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.

Potential benefits

- Generation of cash incomes for communities.
- Development of spin-off infrastructure, and spin-off industries / supply chains
- Development and promotion of the image and value of the Basin.

Constraints

- In Angola, there are huge perceived and real problems of insecurity due to land mines and personal safety, and the security of investments.
- In Kavango, much of the river habitat is degraded and there are thus relatively few indigenous attractions for visitors.
- Ways must be found to integrating small entrepreneurs and communities into tourism industry.

ANNEXURE II A: ANGOLA: Report on a mission to Menongue from 11 to 18 January 2006 (by Mr Chipilica Barbosa)

Purpose of the mission

The purpose of the mission was to identify opportunities for field activities that could be undertaken in the portion of the Okavango River Basin in Angola as part of the SADC Agriculture Water Management Project. Despite of that, the mission also intended to introduce to the Government Institutions, NGOs active in the area that the African Development Bank (ADB), the Food and Agriculture Organization (FAO) and Southern African Development Community (SADC) had led to the development and approval of a programme to investigate and plan investments that would raise food security and reduce poverty through income generating activities, in trans-national river basins whose benefits are essentially intended to improve the livelihoods of the inhabitants of the basin. On the other hand, other key aspect that was discussed is the basin wide approach which should be taken into consideration when designing an investment. Finally, another element that was introduced to partners, Gvt institutions was in regards to the workshop to be held in Menongue.

Background

The Okavango River Basin has been selected as one of the basins where the above mentioned SADC Agriculture Water Management Project will take place. Activities are planned to take place in two of the three countries that share the water resources of the Okavango, namely Angola and Namibia. The third country, Botswana is not involved in the Okavango, but will have an observer status as the activities are defined through country and river basin workshops. The basin within the Angolan territory covers five (5) provinces being Kuando Kubango, Huila, Huambo, Bie and Moxico. Apparently, major investment projects are projected to be undertaken in Kuando Kubango province considering the basin-wide approach and its vicinity with the Namibia Republic. In addition, Kuando Kubango province accounts for the largest portion of the Kuvango basin.

Therefore, field trips are required in order to identify possible activities that could take place in Angola.

Agriculture activities

The agricultural and livestock sectors were the most hit by the war that prolonged for three decades. Before and even after independency, there was never a remarkable investment into agriculture or industrial sector in Kuando Kubango province apart from Cuchi municipality namely in Vissati Commune where maize production was predominant. Some individuals do advocate that Kuando Kubango province used to be hunting site.

However, the province's climatic conditions and soils are suitable for agriculture practise and some if not all municipalities have potentials for carrying out agricultural activities during dry season due to its hydrological water resources.

Agricultural activities are carried out, both crop production and animal husbandry, but mainly subsistence type of farming. Crop production in Kuando Kubango province is the main activity undertaken by the population and it accounts for 80% of their livelihood. Most agriculture activities depend entirely on rainfall. It was reported that rainfall distribution was irregular essentially in the municipalities of Rivungo, Mavinga thus, unfavouring the crop production during last agricultural season.

Cultivated areas vary from 1 Ha to 5 Ha. Normally, owners of livestock have large farms because they use animal drawn power.

Additionally, other activities that are undertaken on subsistence form are, fisheries, apiculture and timber exploitation. These activities are carried on complementary basis for generating small income.

✚ Crops

The main crops grown are maize, beans, groundnuts, millet, sorghum, sweet potato, Irish potato, cassava, banana and horticulture produce; the main staple food is maize and cassava, but the later is consumed on a low basis.

Table 2: Estimate of yields per Ha

Maize	600 Kg
Beans	250 Kg
Millet	250 Kg
Sorghum	200 Kg
Cassava	8000 Kg
Groundnuts	200 Kg
Irish potato	1500 Kg
Sweet Potato	3000 Kg
Banana	1400 Kg

Livestock

Animal husbandry is also practised but, at very insignificant scale. According to findings, livestock in KK region was predominant but most of it was stolen during the war.

Cattle, sheep, goat, pigs, poultry are kept.

Markets

Market network includes seven (7) open markets and few tackshops. Food products on the market are mainly imported, from Luanda and Namibia very little from local produce seen on the market like cassava, banana, horticulture products and sweet potatoes. For instance, most farm produces sold on this market are ferried from Bie, Huambo and Huila but still do not in total satisfy the local demand as output is significantly low and that the road network is so bad that few business are encouraged to undertake such business

Affordability for food products is generally lower. Seasonal or alternative sources of income mainly depend on sale of firewood, charcoal, local beer brewing, horticulture production but not much, collection and sale of wild roots (Vikamba) and fruits (Vindundu), temporary piece works on some residents' fields, average wages of Kz 30.00 per month is paid and small scale fishing particularly in Cuito Cuanavale, Clai, Cuangar and Dirico municipality.

Roads

Population movement and goods is largely restricted, preventing access to a large part of the province and neighbouring province of Kunene, Huila and Bie due to bad conditions of the road network. The road network from Menongue passing Katwiti to Namibia (Rundu) is in bad condition, but nevertheless, movement of people from Menongue, Bie usually move on this stretch. In addition, UN has declared the road as red due to suspect of landmines. An International NGO is currently demining the road up to Katwiti.

Unlike the above road, access to Menongue passing Cuchi municipality is extremely difficult due to land mines and big potholes. Actually, the movement of people and goods from Kuvango to Cuchi/Menongue is significantly reduced. Apart from the road network, there is a railway that stems from Lubango to Kuvango-Cuchi then Menongue. However, the railway network is destroyed.

Both the railway and road networks could play a pivotal role in development of rural communities thus improving the livelihoods of the entire region and other neighbouring provinces and municipalities should they be rehabilitated. It was pointed out by the Government Officials that by the august 2007 the railway network rehabilitation will be completed and this will boost economic growth for the entire region as well as to other provinces and country within the vicinity.

Institutions

Menongue is the capital city of Kuando Kubango and all Government Institutions, Bank agencies and NGOs are active.

ANNEXURE II B: MINUTES OF THE STAKEHOLDER WORKSHOP HELD IN RUNDU, ANGOLA ON 09-10.03.06 (By Mr Chipilica Barbosa)

On 9 and 10 March 2006, the WORKSHOP ON INVESTMENT OPPORTUNITIES IN THE OKAVANGO RIVER BASIN took place in Menongue town, on the premises of the Kuando Kubango Provincial Government. Over 40 people representing Government and Non-Government Institutions and the Angolan Armed Forces as well as Private sector took part in this event.

His Excellency Kuando Kubango Provincial Governor

- 1 He thanked, on behalf of the Government and the population for the holding of such an important event and enlarged upon the potentialities of investing in the Okavango hydrological basin which could significantly contribute to the improvement of food security, alleviation of poverty, generation of employment and income through the production – elements that will contribute to the development of the region.
- 2 The exploitation of these waters requires a broader approach with directed strategies
- 3 Before the independence the region was self-sufficient, but, due to war, the productive sector considerably declined to 70% (WB)
- 4 He mentioned the positive results of the ongoing agricultural campaign thanks to the use of animal traction and agricultural mechanization, in an effort made by Mecanagro
- 5 He equally mentioned the Missombo canal rehabilitation – it represents a gigantic step in the combat against food insecurity, alleviation of poverty and the improvement of basic infrastructures
- 6 He also emphasized the potential that the Okavango basin offers in terms of touristic industry at national, regional and international levels which could provide significant incomes to contribute for the development of other sectors.
- 7 Finally, he stressed the role of the inland fisheries, bee-keeping, forest exploitation, specifically in the southern and south-eastern zones which present favourable conditions for investment.
- 8 **Engineer Claudio Chalule's** address – In his address, the Acting National Project Coordinator mentioned the absence of rains that the region is experiencing and praised the maximum advantage derived from the public and private resources in the investment interventions in order to reduce the food insecurity rate and poverty aiming at the improvement of the offer of basic services. On the other hand, Mr. Claudio mentioned the rational utilization of the water resources in order to avoid the imbalance/degradation of the Okavango River Basin.

He informed of the installation of three hydro-meteorological stations to measure the discharge of the river.

Areas of intervention:

1. Kuando Kubango
 - a. Menongue
 - b. Cuchi
 - c. Caiundo
 - d. Savate
 - e. Dirico
 - f. Calai
 - g. Cuangar
 - h. Cuito Cuanavale
2. Bie
 - i. Mumbue
 - j. Chitembo sede

3. Huambo
 - k. Katchiungo
 - l. Chinhama
4. Huila
 - m. Kuvango

RECOMMENDATIONS AND CONSIDERATIONS

INFRASTRUCTURE SECTOR

In this sector, the plenary made the following considerations:

1. Regarding demining, the workshop concluded that it is necessary to demine the areas of intervention.
2. The workshop suggests the rehabilitation of the access roads with particular interest to the roads indicated hereunder
 - I. Catuitui – Menongue – Cuito Bie
 - II. Menongue – Kuvango
 - III. Menongue – Cuito Cuanavale
3. The workshop recommended the construction of 3 exploitations (mini dams) on the Cuchi and Cuelel rivers.
 - a) As to irrigation systems, the workshop recommended the conclusion of the 3 km stretch of the Missombo canal to irrigate 1600 ha
 - b) Rehabilitation of the Cambumbe dam to irrigate 1000 ha, water supply for part of the population of Menongue town
 - c) Rehabilitation of the Vissati irrigation channel with 8 km and the capacity to irrigate 10000 hectares.
 - d) It was recommended the need to empower 3 to 4 farmers within the basin for the production of seeds.
 - e) Construction of a vocational training centre in Menongue
 - f) Installation of 3-4 secondary meteorological stations along the basin
 - g) Due to the extension of the basin, it was recommended to establish hydrometric posts – 2 in each municipality and one in each commune
 - h) Study and/or construction of hydro-agricultural exploitations in the area of the Maleue and Mpupa on the rapids of Cuito River in Dirico.
 - i) The workshop recommends the construction of one or two ration plants, construction of a perishable products conservation system in Menongue, construction of slaughtering houses, vaccination posts, timber processing units (Nancova)
 - j) Construction of an agro-pastoral experimentation centre in Cuchi

TRANSPORT

In the area of transport, it was recommended to build wharfs along the Cuito River and in Nancova. The workshop recommended the need of SONANGOL expanding its supplying capacity especially to Calai, Cuito Cuanavale, Cuchi, and Mumbue.

AGRICULTURE, FOREST AND LIVESTOCK SECTOR

The workshop recognized the support at two levels: to the farmer sector and to the entrepreneurial sector. The workshop recognizes the importance of food crops, however it recognizes the need to introduce cash crops (sunflower, soybean, fruit trees), without disregard to the habits and customs of the communities.

SOCIOECONOMIC SECTOR

To encourage the private sector to create adequate conditions for the construction of hotels, guesthouses, lodges and related structures at the level of the basin to facilitate the accommodation of tourists, visitors, technicians, researchers and people interested in the basin.

As to pisciculture, the workshop stressed the need to provide fishing kits to the cooperatives and pointed out that the areas of major interest are Cuito Cuanavale, Cuchi, Nancova and Kueleí. It equally pointed out that the navigable fluvial zone goes from Cuito Cuanavale to Nancova.

12 CONCLUSIONS

INFRASTRUCTURE SECTOR

1. DEMINEING

- 1 There is the need to carry out demining actions within the regional programme (road show) Angola, Botswana and Namibia, especially Calai–Mucusso and Menongue-Savate-Caira
- 2 To propose the formulation of regional program of land, railway and fluvial demining

2. ACCESS ROADS

- 1 To rehabilitate roads and bridges on the following priority road stretches
 - a) Catuitui – Menongue – Cuito
 - b) Menongue–Kuvango
 - c) Caira – Calai – Mucusso
 - d) Menongue –Cuito Cuanavale

3. STORAGE, CONSERVATION AND TRANSFORMATION UNITS

- 1 Construction of a ration plant
- 2 Construction of flour mill
- 3 Construction of zoo-sanitary infrastructures
- 4 Construction of an agro-pastoral experimentation station - Cuchi
- 5 Construction of slaughtering houses
- 6 Construction of honey processing units
- 7 Freezing/conservation system in Menongue
- 8 Construction of wharfs (Calai, Dirico). Fluvial navigation from Cuito Cuanavale to Nancova
- 9 Timber processing units in Nancova and Dirico

4. TRANSPORT

- 1 Establishment of gas stations along the roads stretches (Cuito Cuanavale, Nancova and Cuchi)
- 2 Construction of support infrastructures for the transport means
- 3 Fuel and Lubricant storage units

5. HYDRAULIC EXPLOITATION

- 1 Construction of a mini – dam at the Macolonongo falls to supply electricity to Menongue and Caiundo and to the industry as well
- 2 Revetment of the 3 km of the Missombo irrigation canal to irrigate 1,600 ha
- 3 Rehabilitation of the 8 km Vissati irrigation channel on the Cuchi River to irrigate 10,000 ha ,
- 4 Rehabilitation of the Cambumbe dam to irrigate 1,000 ha, fish production for reproduction and water supply to part of Menongue town

Study and construction of hydro-agricultural exploitations in the areas of the Maleue and Mpupa on the rapids of Cuito River

Empower 3 to 4 farmers for the production of improved seeds

Establishment of secondary meteorological posts within the basin

6. Construction of a regional vocational training centre (Menongue)

POSSIBLE GEOGRAPHIC AREAS FOR THE AGRICULTURAL FOREST AND LIVESTOCK PRODUCTION

1. CEREAL PRODUCTION

LOCALITY	TYPE OF CROP
MENONGUE (MISSOMBO TO CAIUNDO) AND CUCHI TO SOBA MATIA	MAIZE, BEANS AND COW PEA
CUCHI (VISSATI)	MAIZE, BEANS AND COW PEA
CUANGAR (SAVATE), CALAI, DIRICO, CUITO CUANAVALA	MILLET AND SORGHUM, COW PEA AND BEANS
MUMBWE	MAIZE, BEANS AND COW PEAS
CHINHAMA	MAIZE, BEANS AND COW PEAS
KUVANGO	MAIZE, BEANS AND COW PEAS

FRUIT GROWING AND HORTICULTURE

NB: This activity is reserved for Menongue municipality, specifically from the locality of Missombo to Bimbi

ROOTS AND TUBERS

LOCALITY	TYPE OF CROP
MENONGUE (ZONDE AND SOMA)	ROOTS (CASSAVA)
MENONGUE (MISSOMBO TO BIMBI)	TUBERS (POTATO AND SWEET POTATO)
MENONGUE TO KUELEI	TUBERS (POTATO AND SWEET POTATO)
CUITO CUANAVALA	ROOTS (CASSAVA)
LONGA	ROOTS (CASSAVA)
MUMBWE	CASSAVA, IRISH POTATO AND SWEET POTATO
CHINHAMA	CASSAVA, IRISH POTATO AND SWEET POTATO
KUVANGO	CASSAVA, IRISH POTATO AND SWEET POTATO

LIVESTOCK

LOCALITY	TYPE OF ANIMALS
MENONGUE	ALL THE SPECIES
CAIUNDO	CATTLE AND GOATS
SAVATE	CATTLE AND GOATS
CUANGAR	CATTLE AND GOATS
CALAI	CATTLE AND GOATS
DIRICO	CATTLE AND GOATS
MUCUSSO	CATTLE AND GOATS
CUCHI	PIGS, GOATS AND POULTRY
MUMBWE	ALL SPECIES
CHINHAMA	ALL SPECIES
KUVANGO	ALL SPECIES

FORESTRY

POTENTIAL LOCALITIES IN THIS SECTOR ARE:

DIRICO, CHINHAMA, KUVANGO, followed by Savate, Cuangar and Calai and they all need a reforestation programme.

BEE-KEEPING

POTENTIAL AREAS

1. CUITO CUANAVALA
2. LONGA
3. MUPECO

4. MASSELA
5. MENONGUE (FIO AND KUELEI)
6. MUMBUE

PISCICULTURE

LOCALITIES

Cuito Cuanavale, Nancova, Cuchi, Kuelej, Chitembo and Kuvango
Fishing kits supply (boats, nets and hooks)
Reproduction tanks for restocking
Establishment of cooperatives in the above-mentioned localities

The workshop had the presence of the following persons:

- 1 Kuando Kubango Provincial Director of MINADER Eng. Francisco Mateus
- 2 Kuando Kubango Provincial Director of Energy and Waters Mr. Filipe Sabino
- 3 Kuando Kubango Provincial Director of Hostelry and Tourism Mr. Luis F. Machingo
- 4 Bié Provincial Director of MINADER Eng Felismino da Costa
- 5 Huambo Provincial Director of MINADER Eng. Antonio Joaquim
- 6 Huambo Provincial Director of Commerce and Hostelry Dr. Manuel Chieke
- 7 H. E. Gen. Eusebio de Brito – 6th Military Region Commander
- 8 FAO Programme Officer – Odilio Fernandes
- 9 ESPMO National Coordinator - Manuel Quintino
- 10 DNA Representative – Paulo Emilio
- 11 DNAPF Representative – Eng. Amilcar Kalupeteca
FAO National Consultant – Chipilica Barbosa

APPENDIX 2.

SADC Regional Water Management Programme for Food Security:

Interim and field trip report for the Okavango Basin, John Mendelsohn

28 November 2005

Introduction

This is a brief report on activities during a week-long visit to the Kavango Region, Namibia, as well as a summary of our early thinking on possible investments by the African Development Bank (AfDB). As background, the AfDB has proposed that investments be considered in several southern African river basins, of which the Okavango Basin (OB) is one. The investments should be targeted at each river basin, which means that more emphasis is to be placed on the needs of each basin. This also provides the opportunity for the investments to help promote and enhance the integrity and overall health of each basin and its inhabitants. Each country's needs is therefore of lesser importance than the needs of a whole river basin.

The principal aim of the investments is to raise the economies of the basin, especially as result of interventions that improve food security, where possible through the use of river water to improve agricultural production. The AfDB intends for the investments to lead to substantial improvements in livelihoods. Fairly large sums of money (perhaps tens of millions US\$) could be invested, and the desired focus will be on larger projects rather than smaller ones, such as local community and/or NGO-type projects.

It has also been widely agreed that investments in the OB should ideally be made concurrently and congruently in the Angolan and Namibian sections of the Basin, again to help raise the overall economic and environmental health the river system.⁵ Similarly, the benefits of investments should flow across national borders as much as possible. An additional guiding principle is that the investments should involve the private sector where possible.

We (Chipilica Barbosa, Marie Karaisl and John Mendelsohn) departed from Windhoek early on Sunday the 20th of November and returned to Windhoek on Saturday the 26th of November (Chipilica Barbosa, however, had to return to Windhoek on the 24th to catch his return flight to Luanda the following day). A total of 2,316 kilometres was covered during the trip. The remainder of the report describes some **principles and background** that we now see as important in driving our thinking for the future, some possible **investment options**, and a **list of people** consulted in Kavango. Note, that this is an informal report and our current thinking will of course evolve during the coming months.

Principles and background

1. It is clear that the private sector is the main driver of economic development and activities in the OB, and private sector activities will largely determine the future of the OB.
2. This is "frontier country", where the dominant entrepreneurs in both countries usually have varied business interests, often conducting their business somewhat informally, in association

⁵ Botswana is not involved in these ORB investigations because it is participating in a similar study of the Upper Zambezi. However, Botswana will be fully appraised of any recommendations affecting the OB. Indeed, its agreement to any investment proposals that might affect water flow into Botswana will be necessary.

- with diverse partners (many of whom hold senior government positions), and often in the absence of much transparency.
3. A challenge for the AfDB investments will be to accept and find ways of working with these “movers and shakers” without incurring unnecessary risks.
 4. Water availability in the OB is clearly limited as a result of (a) total discharge being relatively small, (b) substantial seasonal and annual fluctuations in discharge, (c) the need to respect Botswana’s claim for continued water supply to the Delta.
 5. The continued supply of good quality water to the Delta is of paramount importance because (a) the Okavango Delta is the world’s largest RAMSAR site, (b) Botswana has invested considerably in its conservation and development of a significant tourism industry in the Delta, (c) the Delta is internationally well-known and famous, and (d) it harbours a rich fauna and flora.
 6. The OB is largely based on Kalahari Sands which means that (a) water flows are relatively slow and even, (b) water purity is high, (c) the water contains few nutrients, and (d) biological production and biomass of fish is limited.
 7. As a consequence of the base of surrounding Kalahari Sands, (a) the soil is very low in nutrients, especially phosphorous, (b) agricultural production is generally extremely poor, but (c) reasonable yields can be obtained as a result of careful and intense soil management.
 8. The total population of the OB amounts to about 600,000 people spread over an area of some 192,000 square kilometres. This relatively small and dispersed population together with the fact that the OB is remote from the main populations in Angola, Namibia and Botswana means that there are limited marketing opportunities for residents to sell excess harvests or other products.
 9. Most people in the OB do not want to live in these difficult rural environments. Urban life and the economic opportunities that towns offer are thus features to which most people aspire. The very high rates of urbanisation in the OB and immigration to towns and jobs elsewhere are a consequence of these aspirations.
 10. The majority of people living along the river in Namibia are Angolans, providing an opportunity for cross-border investments to foster and gain from a unity of purpose and vision.
 11. Angola’s competitive advantage is its wild, unspoilt and attractive environment, and cheap, hard-working, non-unionised labour, while Namibia’s competitive advantage is its infrastructure and services.
 12. Overall, there are substantial differences in levels of development between Angola and Namibia.
 13. The relatively pristine condition of the OB sets it apart from the majority of river systems around the world. This gives the OB an overall competitive advantage, which could offer substantial economic opportunities for the OB’s residents. The most pristine environments are in Angola and Botswana.
 14. Infrastructure development will be an important requirement in Angola. Few roads and bridges are in good condition, and improving access will open up many opportunities that are now simply closed.
 15. It is now difficult for foreign tourists to make border crossings between Namibia and Angola. An important and urgent challenge for both governments is to make crossing easier if cross-border tourism is to be developed.
 16. In transcending the border between Namibia and Angola, benefits from investments must flow upstream and downstream.
 17. The two governments own almost all the land in the OB, and rural people thus only have usage rights to natural resources. The Angolan and Namibian governments should find ways

- to give communities as much ownership and control over natural resources as possible if rural people are expected to manage and profit from these resources in the longer term.
18. Secure long-term tenure will have to be given to investors if they are expected to make significant financial investments in the OB.
 19. While benefits should be produced as quickly as possible, longer term and sustained economic development should be the main aim of the AfDB investments.
 20. Market development will be a key challenge for most investments. This is true for finding markets elsewhere (e.g. for agricultural produce) and in bringing markets to the OB (e.g. tourists).
 21. Wherever possible, new agricultural developments should be limited to land that has already been cleared of natural vegetation. Fertilizer applications should be minimized or carefully controlled to limit the flow of fertilizers into the river.
 22. Cash security is much more important to most people than food security. Most AfDB investments should thus aim to enhance cash security, from which greater food security would obviously flow.
 23. Agricultural investments should therefore develop food products that can be sold.
 24. Preference should be given to high value crops that can be produced on small pieces of land, with little use of irrigated water and minimal other environmental impacts.
 25. Preference should also be given to investments that enhance the economy by having large spin-off linkages, e.g. those that employ many people or make use of many local services.
 26. The main role of the governments should be in creating enabling environments for the private sector to drive and develop the economy of the OB.
 27. Development of the OB economy should be on free-market principles with the requirement that it compete in the world economy as far as possible.
 28. Investments should aim to open up new livelihood choices that allow people to move away from a dependence on agriculture and subsistence fishing.
 29. Efforts should be made to reduce pressure on the river in Namibia and Angola, perhaps by creating incentives for people to move away from the riparian belt (note, that fairly abundant groundwater resources are relatively easy to find and tap throughout the Kalahari Sands).
 30. Successful investment will require **intensive, capable management** because this is not an easy place to do business, host tourists, grow crops or farm with fish, for example. Success will come with good management. The OB is replete with examples of investments that failed because of poor management, while all successful ventures have been managed by competent individuals who nurtured their investments.
 31. Although cross-border investments are to be encouraged, this requirement should itself not create obstacles to investments and developments.
 32. Given the fragility of the river system and for certain activities to be mutually exclusive, potential opportunity costs of certain activities on other options must be considered.
 33. Although the majority of people see the OB as offering considerable potential for irrigated farming, there are several serious constraints. These include limited infrastructure and market access, limits on abstraction rates, and potential problems caused by heavy applications of fertilizers and pesticides. In the case of Namibia's Green Scheme ideals to promote such farming in the OB, poor security of tenure, high investment costs and difficulties in managing outgrowers are major problems.

Possible investment options

At a later stage it might be useful to distinguish AfDB investments used as “overhead investments” to facilitate or attract private initiatives from those investments that could directly

support enterprise ventures. We have not tried to differentiate the two in the following list. Nor have we attempted to give any possible investment options greater priority or importance at this early stage.

1. **Tourism** is well-developed in the Delta and it is logical to extend this into Angola to use opportunities to create linkages along the whole river basin. South-eastern Angola must be one of the wildest, pristine large areas in the world, and the scenery is spectacular in many places. Although there are probably few wildlife attractions, other features of interest to visitors can be developed. The main aim of any investments should be to promote tourism generally to the OB, to develop a tourism circuit or route to encourage tourists to visit a number of different parts of the OB, and to encourage tourism to Angola. Several people are already exploring or developing tourism into the Angolan catchment.⁶

This interest is encouraging and adds weight to the idea that cross-border tourism is particularly promising. Tourism, especially eco-tourism, has been hailed as *the* development option, given its strong linkages and potential for employment creation. Further, it provides a range of opportunities to involve local communities in the economy. Tourism also stimulates national economies while simultaneously diversifying local incomes. Conservancies on the Namibian side create stepping-stones into tourism, since the conservancies provide communities with rights to enter into joint ventures with the private sector. Several lodges in and around Rundu are also actively engaged in integrating communities into tourism activities through cultural dances, craft sales and village visits, as well as employment and training. However, there may be a danger that new tourism development and its associated economic opportunities could bypass local communities if they are not given opportunities to participate. Thus development of CBNRM opportunities to maximise returns to the local communities must be explored, as outlined below.

Tourism will benefit significantly from cross-border cooperation and will further promote greater integration and joint management of the OB. While Angola may provide greater attractions than the Kavango region of Namibia, Kavango can serve as stepping stone for tourists entering Angola since a good deal of infrastructure is already available to accommodate tourists on the southern side of the river. Kavango also lies between the Delta and the Angolan catchment. In summary, opening up Angola for tourists should benefit all three countries greatly.

In addition to facilitating cross-border movements by tourists (see above), several other steps should be taken to encourage Angolan tourism. Safety and ease of travel should be enhanced, obstacles to investments should be lifted, infrastructure must be developed, and the private sector must be motivated to engage in pro-poor tourism activities. There is

⁶ For example, Duppie du Plessis is building a fishing camp about 40 kilometres on the Cuito River about 40 kilometres upstream of the confluence with the Okavango. This is being done with the support and/or collaboration with at least two ministers of the Angolan government and other Angolan partners. Jimmy Sebastio is exploring the potential for a route from Mucusso to Mavinga, Cuito Cuanavale, Menongue, Caiundo, Katwitwi and Rundu. Lucas Muhepa intends to build a lodge near Katwitwi and to take tourists on drives to the Cuito. Johan Craill has run some day trips to Calai but these have been stopped because of hassles in arranging the cross-border movements. Wynand Peypers has arranged a joint concession with Daniel Vapor (one of the Kuando Kubango Deputy Governors) on which tourism will be offered (this is across the river from Nkwazi Lodge). Several coutadas are in operation in south-eastern Angola. Duppie duPlessis is working in collaboration with a group called Namgola Hunting Enterprises to develop a lodge and hunting in the Luiana Game Reserve or coutada.

- also a need to add greater protection for the natural environment, especially in areas holding most promise for tourism.
2. **Infrastructure.** Improving access to the Angolan catchment will bring substantial benefits to residents of the OB. Most roads are generally in very poor condition, and many are closed because of landmines. Many of the bridges were destroyed over the past 30 years. The road from Cuangar to Dirico is being improved and a bridge is now being planned or built at Kaila across the Kubango some 10 kilometres upstream from Katwitwi. This will give Angolans immediate access to towns and communities on the north bank of the Okavango river across from Namibia. In addition to improving connections between the two countries, the OB may benefit from economies of scale through the joint use of infrastructure. The Rundu airport is a good example and prospect. Such economies of scale are particularly important given the small size of markets and populations in the OB. Indeed, infrastructure and access to markets are among the most severe constraints to economic production in the OB.
 3. **Fish farming.** Several people suggested that there is considerable scope for the development of private sector fish farms, and for the export of high-value bream to markets elsewhere in southern Africa. There may also be a reasonable demand for fish on the local market. Three fish farms have recently been started in Kavango, but these are run as co-operatives and are thus not producing reliable quantities of fish. The farms also appear to suffer from managerial and technical capacity.
 4. **Processing.** There is scope for developing local factories to process farm products. Four large-scale irrigation farmers have just opened a mill in Rundu to mill their maize and wheat crops (the value of milled grain is now 2 – 3 times higher than unprocessed cereals). Likewise, there is scope for processing of meat products and one proposal has been formulated to start a tomato processing factory in Rundu. All these factories could benefit the whole OB by adding value to local produce grown throughout the OB, and by providing market outlets for local farmers. There is probably greater scope for growing the crops upstream in Angola, where rain and soil resources are better, and then processing them downstream where access to external markets is better. Downstream processing of agricultural products could also fit in with the planned export processing zone (EPZ) at Katwitwi. Market access and environmental impacts (especially water use and contamination!) will need careful investigation.
 5. **High-value products.** As mentioned above, agriculture should aim to produce foods that have high value and low environmental impact. There are a number of crops that meet these criteria and more must be done to investigate their potential. Note, however, that new crops often require years of experimentation and market development before becoming viable. Currently there are a number of projects which grow crops (wheat, maize, some fruits and vegetables) under irrigation. Yet, poor soils require large inputs of fertilisers which are likely to be harmful to the health of the OB in the medium to long term, and add considerable costs (1/3 of total costs of maize production, for example). High rates of abstraction during the early summer when discharge rates are low and germinating crops must be well-watered are also a potential problem, all of which raises questions on the viability of irrigated agricultural production. In the context of OB investments, the comparative advantage of different locations for agricultural production along the basin should be further explored.
 6. **Product branding.** A programme to brand and certify OB food products could be fostered and supported by AfDB investments. The branding would enhance the value of

the products as being organic, from a pristine environment and as being produced in a socially responsible fashion using some of the cleanest river water in world, for example. Given access to markets, organic certification can reap a substantial mark-up price. However, there are strict guidelines for certification, and crops which require substantial fertilisation may fail to meet these requirements. Potential products could include fish, chilli, and especially non-timber indigenous forest products, such as mangetti oils and beverages. As with conventional agriculture, size and access of markets are the main constraints. The market for organic produce within Namibia is small, and the closest potential outlets are likely to be found in large South African cities. Transport and marketing costs to these cities may be significant, however.

7. **OB promotion.** AfDB investment funds could do much to promote the overall economic and environmental value of the OB as a river basin of international importance. This kind of promotion would attract private sector investment, raise the value of the OB in the eyes of the Namibian and Angolan governments, and put OB residents and water on the “world map”. Incentives to improve certain standards should also arise. This kind of promotion would further help to eradicate some of the negative perceptions created by years of war in Angola.
8. **CBNRM.** Consideration should be given to investments that promote community-based natural resource management (CBNRM). Five community forests and four conservancies have just been established in Kavango, and several others are being planned. The concept should be extended into Angola. These investments will give rural communities greater benefits from natural resources, stronger ownership and control, and higher incentives to look after their resources.
9. **Jathropha.** The production of oils from these beans for use as bio-diesel is a possibility, especially if the plants are grown on degraded land and carbon credits can be earned. It appears that this crop is suited to conditions in the OB. Much more needs to be explored on this issue.
10. **Livestock** production is one of the traditional activities in the Kavango, but sales are now limited as a result of several factors: the present closure of the Rundu abattoir, high transport costs, needs to keep cattle to enhance social and capital security, and disease problems. Despite these constraints there are several investment possibilities which need more thought and investigation to motivate farmers to make better use of their livestock. These include the development of dairy farms, feedlots, moving the veterinary fence north to open up South African and European beef markets to local farmers, and the removal of all livestock from along the Okavango River between Namibia and Angola.

APPENDIX 3.

Report on workshop on 2 March 2006 - Rundu – Omashare River Lodge

WELCOME AND OPENING OF WORKSHOP (HON. J. H. THIGHURU, GOVERNOR OF KAVANGO)

Honourable Regional Councillors
Representative from Namibia Nature Foundation
Representative from RAISON
Representatives from other various Sectors
Dear Participants, Ladies and Gentlemen,

I have the pleasure and the honour to stand in front of you in order to say very few words. My mandate and mission is to welcome you to this region and most importantly to this workshop. First and foremost, allow me to use this opportunity in thanking you for honouring the invitation to attend this workshop. I also wish to acknowledge and to extend my gratitude and appreciations to our development partners, the NGOs, the donor funding organizations and all other stakeholders for your continuous support and commitment towards the development of our communities.

I wish to see this deep-rooted relationship being natured by the next generations to come.

It is also my conviction that this workshop is a very important one and will bear significant fruits in terms of development. As a Regional Government we have realised that our region does not have an integrated land use map. The integrated land use map would significantly guide the region in terms of land zoning area which are suitable for tourism, agriculture, settlements and other developmental areas. This will guide the Regional Government, the Traditional Authorities and all other stakeholders in utilizing our land to its maximum potential. Kavango Regional Council wishes this to be done but have no funds and we are therefore challenging all other stakeholders to assist us by sponsoring this very important endeavour.

In conclusion Ladies and Gentlemen, implementation is more important than anything else. Let us therefore debate and recommend ideas that will bring a significant improvement in the livelihoods of our communities. I have therefore no doubt that we will achieve the objectives of this workshop.

By the power vested in me, as the Regional Governor, I therefore declare this workshop officially open.

WELCOME AND PURPOSE OF THE MEETING (JEAN BOROTO)

Jean Boroto, Project Coordinator of the Project Preparation Process, welcomed those present and presented the rationale and background of the overall project and the function of the workshop. The following notes are taken from his PowerPoint presentation:

SADC REGIONAL PROGRAMME ON AGRICULTURAL WATER MANAGEMENT FOR FOOD SECURITY- PREPARATION PHASE - NAMIBIA COMPONENT – Okavango by *Jean Boroto (on behalf of the Investment Centre of FAO, Rome), Rundu, 02 March 2006*

Introduction

- SADC / NEPAD CAADP
- African Development Bank (150 millions USD)
- FAO – Investment Centre

Background

- SADC 's population to 210 millions
- 70% dependence on agriculture
- 70% population below poverty line
- Food insecurity as measure of poverty

Rationale

- Small scale farmers are a vulnerable group
- Opportunity for improved food security
- Income generation through surplus production
- Include therefore interventions to improve access to markets and others...

Need for a river basin approach

- 80% of land falls within shared river basins or aquifers
- Agriculture remains the biggest water user and will impact on neighbouring countries
- Agriculture water use will also impact on other sectors
- Need for a range of investments to support agriculture activities (both irrigation rainfed)

Goal

- the attainment of significant *long-term* reduction in food insecurity, through the stabilisation and intensification of food production and consumption among target populations.

Objectives

- the achievement, within programme investment areas, of improved water efficiency and utilisation
- the strengthened linkage of area farmers and herders into regional marketing systems and the expansion of intra-regional trade;
- the expansion of support infrastructure within programme areas
- the strengthening of local institutional capacities;
- the development of region-wide capacities to identify, evaluate and implement approaches to increased food security

Area and Target Groups

- AREA: THE ENTIRE SADC REGION
- RESOURCE POOR RAIN-FED FARMERS AND LIVESTOCK HERDERS VULNERABLE TO FOOD INSECURITY
- SMALLHOLDER FARMERS IN IRRIGATION SCHEMES WITH POOR EFFICIENCY
- MARKET AGENTS AND TRADERS FEMALE-HEADED AND HIV/AIDS AFFECTED HOUSEHOLDS

INTERNATIONAL RIVER BASIN INVESTMENTS

- INVESTMENTS TO IMPROVE THE EFFICIENCY OF WATER UTILISATION
- STRENGTHENING OF REGIONAL MARKET AND TRADE LINKAGES COMPONENT
- INFRASTRUCTURE DEVELOPMENT.
- ENVIRONMENTAL IMPACT ALLEVIATION MEASURES.

Recent developments

- Aide memoire between SADC, ADB and FAO (April 2005)
- Approval of selected river basins by SADC (June 2005)
- Several countries (through the Ministry of Finances) have confirmed to the ADB their interest in the project
- Initiation of river basin preparation activities

SELECTED BASINS (SO FAR)

- UPPER OKAVANGO (ANGOLA AND NAMIBIA)
- UPPER ZAMBEZI (BOTSWANA, ZAMBIA AND ZIMBABWE)
- SONGWE RIVER BASIN (MALAWI AND TANZANIA)

Okavango River Basin

- Angola
- Namibia

Note: Botswana will be an observer in the project and but will not undertake agriculture activities in the Okavango

Namibia

- National Coordinator: Mr P Liebenberg
- National Consultant: Dr J Mendelsohn
- National Working group (first meeting in November 2005)

Angola

- National Coordinator: Mr H dos Santos
- National Consultant: Mr C Barbosa
- National Working group – First meeting in November 2005

National Working Group

To participate in the identification of investment opportunities in the Okavango River Basin through this project:

- Hold a national workshop: today
- Inputs in a Project Concept Note being developed
- Take part in the formulation of Basin wide activities in collaboration with counterparts from Angola and Botswana on 27/28 March 2006 in Windhoek

This will lead to the development of detailed Consolidated Okavango Project Document to be submitted to the ADB.

Objectives of workshop

- Present some of the thematic intervention areas that have been identified through field visits, discussion with stakeholders and desktop review.

- Obtain inputs from the participants to confirm, amend and add on the proposed intervention areas

AN OVERVIEW OF THE KAVANGO BASIN (DR JOHN MENDELSON)

John Mendelsohn, the Namibian consultant for the Project Preparation Process presented a visual overview of the Okavango Basin from Angola to the Delta highlighting

- some ecological characteristics
- environmental values
- and socio-economic context of the three riparian countries Angola, Namibia and Botswana.

While at present, the Okavango Basin may be economically marginal for both Angola and Namibia, it holds large potentials and opportunities which are as yet untapped and once developed could enhance the economic importance of the Basin.

PRINCIPLES TO GUIDE POSSIBLE INVESTMENTS (MARIE KARAI SL)

Through their investigations based on interviews with residents and entrepreneurs on the Namibian side of the Basin as well as in Windhoek, the consultants had derived a set of principles which should guide investments in the Basin, and were presented as listed below:

5. Maintaining and maximising the environmental wealth of the Basin

- a. Water availability in much of the Basin is clearly limited.
- b. The supply of good quality water to the Delta is of paramount importance because (a) the Okavango Delta is the world's largest RAMSAR site, (b) Botswana has invested considerably in its conservation and development of a significant tourism industry in the Delta, (c) the Delta is internationally well-known and famous, and (d) it harbours a rich fauna and flora
- c. Some economic activities, particularly high-value tourism, are dependent on the preservation of the Basin's natural environment; thus, the choice of an industry must consider potential trade-offs and opportunity costs.
- d. Economic activities that maximise value added (employment and income generation) per water use are to be preferred

6. Maximising economic benefits from the Basin

- a. Development of the Basin economy should be on free-market principles to build regional and international competitiveness.
- b. Long-term perspectives should be adopted, rather than quick-fix attempts to reduce poverty.
- c. Economic activities should build on the Basin's relative comparative advantages.
- d. The private sector (large and small-scale entrepreneurs) should be the main drivers for economic development
- e. Governments and regional authorities should create the enabling environment to develop a healthy and sustainable Basin economy.

7. Bottom-up wealth creation

- a. "Cash security" is much more important than "food security".
- b. Wealth should be created and vulnerability reduced by building a dynamic regional economy rather than focussing on improving food availability.

- c. Investments should aim to open up new livelihood choices that allow people to move away from dependence on subsistence agriculture and fishing.
- d. Trickle-down effects should be maximized.
- e. Benefits (incomes and employment) derived from the Basins resources should be distributed as equitably as possible.
- f. Promoting local level ownership and control of resources (e.g. through conservancy approach)
- g. Promote partnerships between small- and large-scale entrepreneurs for mutual economic benefits.

8. Basin-wide approach

- a. Investments should aim to maximise benefits for the residents of the Basin.
- b. Investments should be evaluated with respect to their positive and negative impacts across the whole Basin economy, taking into consideration that negative impacts are likely to create backlashes elsewhere.
- c. Potential conflicts based on inequitable access to water and other resources of the Basin should be avoided for the sake of long run economic security.

VISION: To develop the economy of the whole Okavango Basin for the benefit of its people by building on the Basin's comparative advantages, while enhancing and preserving its assets and promoting the economic integrity of the Basin.

SOME PROPOSALS FOR INVESTMENTS (JOHN MENDELSON, MARIE KARAI SL)

Proposals for investments presented at the workshop for deliberation are broadly categorised as investments to create an enabling environment to better develop the Basin's economy and investments which target specific economic sectors. Naturally, many of these investments are interlinked, yet it is necessary to deliberate where to place the main focus. The summaries of the proposed economic investments are NOT REPEATED IN THIS WORKSHOP REPORT BECAUSE THEY ARE REPRODUCED AS PART OF THE PROJECT CONCEPT NOTE (SEE PAGES 18-26).

RESULTS AND DISCUSSIONS FROM WORKING GROUPS

Participants were divided into three groups each of which was equipped with the above summaries of the principles presented above; the potential investment activities, a map of the Okavango Basin and the task to identify most viable investment opportunities, identify their constraints and how additional funds through the African Development Bank could alleviate these constraints. The section below briefly summarises the findings of each Working Group:

GROUP 1:

Group 1 identified infrastructure, in particular to connect the two sides of the river, as essential to develop the economy. Apart from physical infrastructure, economic cross border relations have to be catalysed to facilitate cross-border movement of people as well as goods through appropriate policies and regulation.

An Investment Fund should be established that is locally managed to ensure that benefits are maximised for the basin (it was suggested that the Board of Directors could include regional councillors). Regarding food production, it was of utmost importance to produce food to enhance

local food security before starting to export; yet, as importantly as the production of food was the processing and packaging, i.e. value adding, to agricultural outputs.

Tourism should be developed to integrate the entire Basin, but a structured land use plan across the basin should first be developed, to locate optimal areas for economic activities and to accommodate conservation issues, particularly along the Okavango.

GROUP 2

Group 2 stressed the need to foster economic sectors and activities as priority to activities to build the enabling environment; particularly emphasis should be placed on infrastructure.

It was suggested that the Investment Fund could be modelled after the example of the Commercial Bank in Namibia. In order to accommodate conservation issues, Environmental Impact Assessments are essential to any investment planning.

It was advocated that funds should be made available to enlarge horticulture and particularly to commercialise home-based gardens. The marketing of these products could be linked with other economic and marketing activities such as crafts outlets and tourism information centres to create multiple-use marketing outlets.

Group 2 elaborated in detail on the possibilities of basin-wide tourism activities in particular placing accommodation, marketing and information facilities and outlets along the river. They elaborated the need for accommodation facilities at Caiundo, the border crossing at Katwitwi (in particular targeting truck drivers); a central tourism information centre in Rundu, which should be linked to crafts sales; smaller crafts outlets along the tourism route towards Caprivi and Botswana.

GROUP 3

Group 3 stressed the need to develop the tourism industry in particular through removing restrictions and developing Kavango's attractions such as the national parks, particularly Khaudom (rather than establishing more accommodation facilities!). The need for an aggressive marketing strategy was highlighted to place the Okavango Basin on the tourism map. Apart from tourism aquaculture, in particular management approaches which integrate fish farming with poultry and vegetable production, were advocated. Yet, given the difficulties to access markets (remoteness and availability of infrastructure) and the saturation of markets in particular with high value crops (fruits, vegetables) the importance of local value adding through food processing was highlighted. Further, given local demand, traditional crops (wheat, maize) were given preference over fruit and vegetable production.

DISCUSSION

The following points were raised during the discussion:

Clarification of project details:

The area of Kavango which will be targeted by the investment will be the whole river basin, i.e. not the whole of Kavango region. The exact modalities of how money will be made available, and at what conditions (grants, loans and at what interest rates) are not yet finalised. Yet, the workshop participants stressed the importance of clarity in order to be able to plan realistically. The reason why the Basin-wide workshop for the finalisation of the concept paper is held in Windhoek and not in Rundu or anywhere else within the Basin is regrettable but due to financial

and logistical difficulties. Yet, this final meeting will not be the last one and future consultations will be located as much as possible within the Basin

Agro-industry

The importance of processing and value addition in particular within the agriculture sector was again emphasised during the discussion: given the costs to access markets, value addition already through simple processing (e.g. milling of cereals; drying of fruits and vegetables) can add the necessary value to impute a profit.

The role of Botswana

Given difficult relations between the riparian countries and particularly the worry of Botswana regarding upstream water usage, it is necessary to give Botswana an appropriate role within the project to avoid a deterioration of relations and heightened suspicion. On the other hand, Botswana should not be allowed to hinder developments in Angola and Namibia.

Capacity Building

The need for capacity building was highlighted, yet it was stressed that capacity building has to focus on those people who have the motivation and the will to use their acquired skills to their benefit, i.e. rather than adopting a blanket approach to training. Within this discussion the difference between subsistence (not just small scale but also large scale farmers!) who use space but don't contribute to the economy and commercial farmers was highlighted. It was broadly agreed that any investment must focus on entrepreneurs (whether small or large scale).

Land Tenure

The question of land tenure and the opportunity of entrepreneurs to acquire secure long-term leases over land remains unclear. On the one hand, it was stressed that if a viable and beneficial investment idea was developed there was no difficulty to obtain appropriate leaseholds, especially if Traditional Authorities and Regional Land Boards were involved. However, others maintained that security of land tenure was one of the greatest obstacles to investment in Kavango. Whatever the actual reality, the debate highlights the urgent need to develop a clear land tenure system which provides security of land tenure over 99 years for everyone.

SUMMARY AND CONCLUSIONS (JEAN BOROTO)

Mr Jean Boroto summarised the following outcomes of the workshop from his perspective

- *Enabling Environment, including laws and legislation for transnational issues (cross border immigration and trade) and land tenure issues*
- *Private ownership, role of private sector*
- *Capacity Building on various activities (fish farming, agriculture management...)*
- *Processing, value adding within the basin is critical*
- *Infrastructure for accessing marketing for agriculture products and tourism, including a bridge across the Okavango at Rundu/Calai and various roads such as from Calai to Menongue and others...*
- *Financing needs clarity and flexibility (responsive to needs on the ground) – opportunity for an Okavango Investment Fund*
- *Achieve food security within the Basin before exporting to outside markets*
- *Linkage/synergy with other initiatives (tourism opportunities, other role players such as donor agencies funding other projects... the need for an integrated approach (economic development, role of communities, JVs, partnerships...)*

- *Explore opportunity for high value crops/natural resources that are unique/available in the region including commercial thatch grass, craft centre...*
- *Marketing through a tourism centre, web site, internet access... and **BRANDING***

In conclusion, the workshop participants showed widespread appreciation for and agreement that investments be focussed on (a) the Basin, (b) improving the overall economy of the Basin and c) in order to maximise benefits for Basin inhabitants, decision making should be driven from *within* the basin (particularly for the Okavango Investment Fund). This also implies that Botswana should not interfere with decisions taken by Namibia and Angola, yet to preserve the good relations between the countries, the country has to be informed of processes and decisions. Throughout the discussions, the following principles were reiterated: a) the need for free-market principles; b) long term perspectives rather than quick fix attempts to reduce poverty; c) the need for private sector (small and large scale) to drive development; and d) the prioritisation of “cash” rather than food security.

The results of group work and discussions reiterated that the development of the Basin Economy should support the diversification of the economy through aquaculture (integrated with vegetable, fruit and potentially poultry production), tourism and a strong focus on value adding through food processing rather than mere production of agricultural output; i.e. broadening the idea of agriculture to develop agro-business or an agro-industry. Further, participants stressed the necessity to support commercialisation through targeting entrepreneurs rather than small-scale subsistence agriculture. Thus, while some of the funding should concentrate on improving the policy and regulatory framework to develop a basin economy (with a particular focus on improving cross-border relations), a funding mechanism should be made available to allow entrepreneurs (both small and large scale) to invest in the development of a diversified Basin economy.

PARTICIPANTS AT THE RUNDU WORKSHOP

Institution	Name	Contact Details
Basin Wide Forum – Angola	Francisco Kalimbwe	081 233 8858
BIOTA Southern Africa Research Project	Michael Proepper	michael.proepper@uni-hamburg.de
CFNEN/Dept of Forestry	Helena Lutombi	hnegumbo@yahoo.com
Dept Water Affairs, Windhoek	Antje Eggers	eggers@mawrd.gov.na
Development AID People to People	Berthold Schuct	
Directorate of Forestry	Miwiikinghi Jonas	jmiwiikinghi@yahoo.co.uk
ERP Craft Consultant	Charlie Paxton	shamvura@iway.na
Kavango Basin Wide Forum	Alfons Siyere	P.O. Box 1554, Rundu 081-2272482
Kavango Regional Council - GOVERNOR OF KAVANGO	Hon. J. H. Thighuru	Kavango Regional Council
Kavango Regional Council	Gaspar García Pérez	gaspernamibia@yahoo.es
Kavango Regional Council	M. H. Nauyoma	nauyoma@iway.na
Kavango Regional Council	Hon J. Sikongo	P.O. Box 1210
Kavango Regional Council - Kapako Constituency	Hon. Izabel Nongava	081-2991470 / 066-257118
Kavango Regional Council - Rundu Rural West	Hon Herbert Shihwameni	081 2053827
Kavango Regional Council - Rundu Urban	Hon. F M Kamwanga	runurban@iway.na
MAWF	Piet Liebenberg	pietlieb@iafrica.com.na
MET	Colgar Sikopo	csikopo@hotmail.com
Ministry of Fisheries	Alushe Hitula	alushe@iway.na
MRLGHRD	Johan de Kock	jdekock@mrlgh.gov.na
nKwazi Lodge	Wynand Peypers	nkwazi@iafrica.com.na
NNF/ERP	Gibson Kamuaruuma	gk@nnf.org.na
NNF/ERP	Dorothy Wamunyima	dw@nnf.org.na
Polytechnic of Namibia	Peter Cunningham	pcunningham@politechnic.edu.na
Vungu Vungu Farm	A Johan Craill	vungfarm@mweb.com.na
Namibia Nature Foundation	Marie Karaisl	mk@nnf.org.na
FAO	Jean Boroto	jboroto@wol.co.za
RAISON	John Mendelsohn	john@raison.com.na

APPENDIX 4.

People interviewed in Kavango

1. Hon. John Thiguru – Governor of Kavango
2. Hon. Murema – Councillor for Rundu Urban Constituency
3. Dorothy Wamunyima – Every River has its People Project
4. Gibson Kamuaruuma – Every River has its People Project
5. Loffie van Landsberg – Manager of Shadikongoro
6. Johan Craill – Manager of Vungu Vungu and Sarasungu Lodge
7. Tulio (Sacka) Perreira – Manager of Musese and Kavango River Lodge
8. Farad Nadimi – local businessman
9. Lucas Muhepa – local businessman and Town Clerk of Rundu
10. Harold Khaebeb – Ministry of Fisheries and Marine Resources
11. Franciso Kalimbwe - Chairman of Basin-wide Forum for Angola, Calai
12. Augusto Khuzo – Secretary, Calai Municipality
13. Jimmy Sebastio – Angolan businessman and official of the Angolan Consulate
14. Mr Galliano – Deputy Consul of Angola
15. Matao Nauyoma – Deputy Director of Planning and Development, Kavango Regional Council
16. Gabriel Sinimbo – Director of Planning and Development, Kavango Regional Council
17. S Kantema – Chief Executive Officer, Kavango Regional Council
18. Piet Horn – Ministry of Agriculture, Water and Forestry
19. Mrs Antinda – Chief Extension Officer, Ministry of Agriculture, Water and Forestry
20. Hardy Dedekind – Consultant engineer, Consulting Services Africa
21. Peter Sindimba – Ministry of Trade and Industries
22. Duppie du Plessis – local businessman and tourism developer in Angola
23. Elia Nambase – Meatco manager in Rundu
24. Wynand and Valerie Peypers – managers of Nkwazi lodge and local entrepreneurs

People interviewed in Windhoek

1. Mr Helmut Angula – Director General of the National Planning Commission
2. Mr K Kahure – Permanent Secretary of Ministry of Agriculture, Water and Forestry
3. Mr M Mallet, Mr D Cole and Mr P du Plessis – CRIAA-SADC
4. Mr L Hugo and Mr A Botes – Green Scheme
5. Mr J Hailwa, Director of Forestry, Ministry of Agriculture, Water and Forestry
6. Dr CJ Brown – Namibia Nature Foundation
7. D A Forbes and Ms A Hitula – Ministry of Fisheries and Marine Resources
8. Mr P Liebenberg - Ministry of Agriculture, Water and Forestry
9. Ms M Coetzee - Ministry of Agriculture, Water and Forestry
10. Mr P Heyns – Under Secretary of Ministry of Agriculture, Water and Forestry
11. Dr O Hubschle – Director of Veterinary Services, Ministry of Agriculture, Water & Forestry
12. Mr H Tilahun – United Africa Group
13. Mr J Diekmann – farmer
14. Mr J Buhrmann – farmer