

OKACOM and CRIDF develop a ‘Climate Resilient Development Pathway’ to help SADC decision maker’s select optimal development trajectories

OKACOM embarks on its ‘options analysis’ phase

OKACOM and the Member States (Angola, Botswana and Namibia) are entering a new phase of growth, planning for and tooling up to translate the agreed Basin ‘Vision and Mission’ into investments that will ensure the fair development of the water resources of the basin, while considering the impacts on aquatic and related ecosystems. In order to operationalise the options analysis phase, OKACOM initiated a basin-wide Multi-Sector Investment Opportunities Analysis. This analysis identified individual and aggregate development opportunities in all three Member States, derived from sector plans and aligned with overall development objectives of each State. It assessed the water demands of these developments, evaluated the economic benefits and assessed the social and ecological impacts. Emphasis was placed on assessing the costs and benefits of cooperative and joint investments compared to unilateral development within the Okavango River Basin to meet the national and the basin level development objectives.

Three investment programmes fall out of the options analysis – a ‘Livelihoods investment programme’, a ‘large-scale productive infrastructure investment programme’ (with a focus on hydropower, water supply schemes and large scale irrigation) and a ‘tourism investment programme’ (with a focus on scaling up the Botswana tourism model to the region).



Figure 1 Okavango River - Poppa Falls

CRIDF and OKACOM develop the ‘Climate Resilient Development Pathway’ concept

In parallel to the options analysis, CRIDF developed the concept of a basin-wide ‘Climate Resilient Development Pathway’ as a diagnostic tool to help SADC Basin planners select between potential development trajectories. This approach developed and piloted with

OKACOM in the Okavango Basin, is a typical science-policy exercise that combines technical, science-based methods with participatory elements to achieve an optimised outcome.

Its science-based components were built on vulnerability assessment methods and resilience theory to analyse a set of scenario assemblies that combine hydrological infrastructure development options, developed through the options analysis, with alternative climate change projections associated with various carbon representative concentration pathways (RCPs). An expert-based, technical assessment was used to develop the evidence base for each scenario assembly, with a rating of social, economic and ecological impacts using a purpose-built rating tool on a seven-point scale. Results from the technical work were reviewed through a workshop-based participatory process on 8-9 March 2017, where stakeholders from the three OKACOM member states identified significant differences in risks and opportunities associated with the different development options.

The purpose of the stakeholder participation was to help understand the sensitivity of development options to climate change and to compare and rank them based on their impact profile. It also helped consider whether and how the lessons from this assessment could serve as a basis for hydrological infrastructure development strategies that are resilient to climate change – essentially a new development scenario.

Recommendations from the OKACOM trial; helping Basin planners select the optimum climate resilient development pathway

The CRDP project subjected selected hydrological infrastructure investment options to an integrated assessment of their sensitivity and vulnerability to climate change. Based on the outcomes of the process, a number of policy-relevant recommendations were made for relevant stakeholders, including the governments of Angola, Botswana and Namibia, the OKACOM Secretariat, the MSIOA team and perhaps most importantly the communities and people of the Okavango basin who most directly experience the positive and negative consequences of development and climate change in their daily lives:

Make it a requirement that considering climate change impacts is a requirement for infrastructure development planning.

Based on new evidence developed for the CRDP, the impacts on the social, economic and ecological system are significant, especially under the conditions of the lower probability (but more severe) climate change scenario. It is recommended that relevant authorities of the three countries should consider making it a formal requirement that any major future hydrological infrastructure development proposal to systematically consider the impacts of climate change.

Strengthen and make use of cooperative frameworks for climate change resilience building and adaptation

The importance of collaborative decision-making regarding matters that affect the region is well established. Given the increasing risks and potentially significant impacts because of climate change and potential new infrastructure development, the need for collaboration (and the associated institutions that can foster collaboration) will likely increase. The recommendation is that the members of OKACOM work towards strengthening the organization's capacity, make systematic use of its capacities in transboundary water resource planning, and strengthen its mandate to address climate change that is relevant at the basin-scale.

Advance infrastructure solutions that reduce vulnerability and help build resilience

The study revealed significant differences in the vulnerability profile of climate and development scenario assemblies depending on the type of hydrological infrastructure solutions they proposed. Given persistent poverty in the region, development is essential. But when advancing infrastructure development programs, nature based, ecosystem-friendly solutions such as locally controlled micro water-storage reservoirs that offer robust solutions across a wider range of climate futures at a reduced cost could be considered. Authorities involved in infrastructure planning are recommended to integrate resilient, nature-based infrastructure solutions into the mainstream of their development plans.

Smart climate finance can and should be pursued

The project showed that due to changes in flow rates, pieces of large scale hydrological infrastructure can become stranded, non-producing assets. Building climate risk proactively into strategic plans not only helps reduce the exposure to potential large financial liabilities in the future, but also can attract financing from donors and investors interested in climate finance (with favourable terms and conditions). It is recommended that water infrastructure developers should specifically and proactively target financing mechanisms such as the Global Climate Fund that are designed for projects designed to mitigate risk and build resilience across a range of possible climate futures.

'Socialization' of infrastructure planning

As shown by the results of the project, countries, industries and communities in the Okavango basin benefit from infrastructure development and exposed to the risks of climate change in different ways – they are everyone's business. They require the active, timely and meaningful inputs from experts and non-experts in understanding their exposure, envisioning and elaborating development plans with their location, technical design, financing, operation and impacts all covered. The recommendation is to ensure infrastructure planning processes actively and transparently engage stakeholders, including particularly local communities and the most vulnerable in society in early stages and throughout the process of infrastructure planning to understand and address risks and maximize benefits for all.

Sequencing development

In order to better manage uncertainty and the chance of significant adverse impact of developments, proposed developments should be carefully sequenced. Any development scenario with significant infrastructure components should be implemented in stages so that its impacts throughout the Basin can be evaluated and adjustments in future plans made and the future climate changes considered as they occur. ***Development of climate resilient development pathways***

The evaluation of the scenario assemblies building on the MSIOA scenarios and climate change projections showed significant differences in the risk profile and attractiveness of the different options. Based on the results of the project, it seems human needs cannot be adequately addressed at the present level of infrastructure development, however, infrastructure needs to be developed in a way that helps maintain water availability both in the Delta and Highlands at or close to historic levels, even under the conditions of climate change. As these conditions didn't fully align in any of the scenario assemblies, the project team recommends that the stakeholders of the region build on the results achieved so far, but take the opportunity to include new insights (gained through this project) and aim to move towards a scenario that is not yet formulated. This new scenario should meet not only their needs but also the needs of the children and grandchildren.



Figure 2 Makeshift bridge - upper Okavango Angola