



### RECOMMENDATIONS

- OKACOM must incorporate a cross-sectoral approach in the management of the Cubango-Okavango River Basin, integrating land-use planning and other national sectors (eg, mining) and engaging with all relevant stakeholders at a local, national and regional level.
- OKACOM should consider a 'Payment for Ecosystem Service' and/or a financial benefit-sharing mechanism to offer incentives to upstream countries to refrain from implementing potentially destructive developments. This could include a regional tourism and wildlife plan for the basin.
- EWA mechanisms should also be implemented to account for the abstractions, costs and benefits of water use in the basin and to ensure that abstractions do not compromise the hydrological and biological functioning of the system.
- OKACOM should align its basin management policies with international conventions and criteria, eg, the RAMSAR Convention on Wetlands.
- With the increase in water variability forecast by climate change scenarios, OKACOM should strive to integrate climate adaptation policies into its basin-wide strategy to ensure that hydrological balance of the river basin is not disturbed.

# Water Governance and International Co-operation: Lessons from the Cubango-Okavango River System

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### EXECUTIVE SUMMARY

International co-operation on trans-boundary water systems has become an increasingly important norm in natural resource management, especially as climate change and population growth place growing pressure on the global water sector. The Permanent Okavango River Basin Water Commission (OKACOM), a joint river basin management authority governing and co-ordinating the national interests of riparian member states Angola, Namibia and Botswana, provides important lessons for co-operation on trans-boundary watercourses. OKACOM's success can be attributed to, among others, a strong institutional framework supported by both regional and international water governance frameworks, and high levels of political will and trust among the riparian countries, founded upon historical political alliances. However, in light of the growing challenges posed by climate change and the need to further member countries' national economic development, OKACOM must pursue governance strategies that benefit all relevant stakeholders, and consider the use of innovative models to distribute economic gains more effectively and to better manage joint water allocation and abstraction.

### INTRODUCTION

It is estimated that about 1.8 billion people worldwide will be living in regions facing absolute water scarcity by 2025, with water withdrawals expected to increase by 50% in developing countries and 18% in developed countries.<sup>2</sup> As a result, there is increased global emphasis on international co-operation over shared watercourses,

especially as effective joint water management is essential to reach a number of Africa's poverty alleviation and development goals (eg, Agenda 2063 and the Millennium Development Goals). However, international co-operation over trans-boundary watercourses remains an elusive goal, as only 55 joint management treaties exist for the 261 water basins that are shared worldwide.<sup>3</sup> Traditionally, co-operation has been contentious, as countries have to balance their national interests with often-conflicting international obligations. In order to deepen co-operation on shared watercourses, it is important to understand the drivers and challenges of shared resource governance. This policy briefing examines the example of OKACOM and its 20 years of co-operation in the Okavango River Basin, highlighting the drivers of successful collaboration in order to inform policy recommendations that enhance and sustain future co-operation in the basin. This may assist other trans-boundary natural resource governance schemes.

#### IMPORTANCE OF REGIONAL CO-OPERATION

Considered one of the last near-pristine aquatic ecosystems in Africa, the Cubango-Okavango River Basin is an inland system that covers approximately 700 000m<sup>2</sup>. Originating in the Angolan highlands, the Cuito and Cubango rivers meet on the border between Namibia and Angola to form the Okavango River, which flows through the Kalahari Desert and then spills out into the Okavango Delta in north-western Botswana. With its rich biodiversity, the Cubango-Okavango River System is a globally significant and ecologically important river system. In addition, the river basin provides rural communities on the periphery of the river system with numerous ecosystem services to support their livelihoods. These include water, land for small-scale agriculture, fish, vegetation for grazing, reeds for thatching and important medicinal plants. The Okavango Delta also generates a significant amount of income from tourism – about \$866 million a year.<sup>4</sup>

The Cubango-Okavango River Basin contributes to the socio-economic development of all three riparian countries. Estimates show that the total amount of water abstracted from the river basin annually amounts to 31.4 cubic megametres (Mm<sup>3</sup>).<sup>5</sup> Since

Angola's civil war ended in 2002, the country has become increasingly dependent on water abstraction from the Cubango-Okavango River System as a means to boost economic growth and enhance the livelihoods of its population. At 53.1%,<sup>6</sup> Angola has the highest overall level of water abstraction of the three riparian states. Livestock and agricultural developments, particularly in the form of irrigation schemes, constitute the bulk of its water abstractions from the river basin. As stated in its National Action Plan for the Sustainable Management of the Cubango-Okavango River Basin in 2011, Angola is interested in developing two mini-hydropower stations by 2016, in addition to the existing hydropower plant situated on the Cubango River.<sup>7</sup>

Namibia, which is far more arid, follows closely behind Angola and abstracts 42.5%<sup>8</sup> of the system's total water. The Cubango-Okavango River System is the only exploitable perennial river flowing through Namibia and is thus of prime importance for agricultural irrigation, which constitutes the majority of water abstractions for the country. There are also plans to revive a scheme to transfer Cubango-Okavango surface water to Namibia's main centres of demand.

Botswana, in contrast, is responsible for a mere 4.4% of the total annual riparian abstractions, with the majority of these going to livestock and domestic use.<sup>9</sup> The new Boseto copper mine in Ngamiland, in the Kalahari copper belt in north-western Botswana, began operations in 2012 and is expected to have an annual groundwater use of 1.3 Mm<sup>3</sup>, which would, in conjunction with other projected increases in water abstraction for livestock and domestic use, effectively increase Botswana's total water demand from 12.65 Mm<sup>3</sup> to 14 Mm<sup>3</sup>.<sup>10</sup>

It is clear that the Cubango-Okavango River Basin and its associated ecosystems are highly beneficial for all three riparian countries. To ensure that the basin's ecological benefits are preserved, joint management and effective harmonisation and co-ordination of the national water policies of Angola, Namibia and Botswana are essential, especially in light of the increased water abstraction projections and the challenges posed by climate change and population growth.

In an attempt to foster regional co-operation and manage the national interests of each riparian state, OKACOM was established in 1994 as a co-operation,

co-ordination and information-sharing platform, aimed at encouraging an integrated response to the management of the basin's water resources and reducing the unsustainable national activities of Angola, Namibia and Botswana. Continued and deepened co-operation is essential to ensure that system thresholds<sup>11</sup> are established and respected, and prevent national development activities from exceeding the capacity constraints of the system.

To provide a factual basis for these management decisions, OKACOM employs several scientific tools for basin-wide planning, including the Transboundary Diagnostic Analysis (TDA), its associated Integrated Flow Assessment (IFA) and the Environmental Protection and Sustainable Management of the Okavango River Basin (EPSMO) project. The TDA, IFA and EPSMO projects are essential to OKACOM's Strategic Actions Programme (SAP), which is a joint strategy that lays down the principles and strategic direction for the development of the river basin for the next 20 years. It seeks to avoid the loss of ecosystem services and wetland functioning by curbing unregulated upstream development and managing unsustainable changes in land and water use. The SAP is essential for informing the individual national action plans of Botswana, Angola and Namibia, which define the specific time-bound interventions of each riparian country in response to the SAP's priorities. Reviewed every five years, these tools and policies help OKACOM to assess the environmental and socio-economic threats to the basin; focusing on the relationship between current and future water use and hydrological flow, and identifying thresholds and the scope of 'acceptable development space'.

OKACOM's 20 years of co-operation can be attributed to its strong legal and institutional framework, built on political will and trust and established through historically formed political alliances, which encourages the three riparian states to co-ordinate their national water policies to preserve the ecological integrity and socio-economic benefits of the river basin. In addition, OKACOM has been supported by the Southern African Development Community's Protocol for Shared Watercourses; the African Union's African Convention on the Conservation of Nature and Natural Resources and its Convention on Cross-Border Cooperation; and the UN Convention on Water.

## CHALLENGES TO CO-OPERATION IN THE CUBANGO-OKAVANGO BASIN

While its co-operation on the Cubango-Okavango River Basin provides a good model for trans-boundary resource management, OKACOM still faces significant challenges in sustainable co-operation, including increased pressure from population growth in the basin (expected to increase from the current 921 890 to more than 1.28 million by 2025); long-term variability and climate change impacts (including temperature increases of between 2°C and 4°C and changes in rainfall); land-use changes; and high poverty levels in all three basin countries. In order to ensure that climate change and population growth do not have an adverse impact on the management of the basin, it is crucial that OKACOM successfully integrates climate change adaptation into its basin management strategy.

In addition, all three riparian countries are becoming increasingly geared towards expanding their economies, with resultant increases in water abstractions. The projected increase in water demand is over 400 Mm<sup>3</sup> – and up to 4 000 Mm<sup>3</sup> in certain future scenarios. This raises two important questions: firstly, how does this demand relate to the size of the 'development space' in terms of the optimal allocation of water for withdrawal and use by the system; and secondly, how can these benefits be shared equitably among all basin member states?

A further challenge is the asymmetrical distribution of benefits from the Cubango-Okavango River Basin among the three river basin countries. For example, in 2008 the total gross national income of the entire Cubango-Okavango Basin amounted to \$234 085 700.<sup>12</sup> Of this, Botswana generated \$177 317 500, predominantly from the booming tourism industry in the Delta, while Angola and Namibia earned \$13 563 700 and \$43 204 500 respectively.<sup>13</sup> It is important to ensure that these discrepancies do not cause upstream riparian countries to unilaterally implement development schemes in and around the river basin that could damage its sustainability.

To ensure that these asymmetrical benefits do not undermine co-operation on the river basin, it is important that OKACOM establishes an economic water accounting (EWA) mechanism to measure the

usage, value, costs and benefits of the river basin, thereby ensuring that the demands on the basin do not undermine its biological and hydrological functioning, causing further environmental degradation and subsequent socio-economic losses. While Namibia and Botswana have already established national water accounting systems, an EWA for the entire basin system is yet to be fully implemented. In addition, OKACOM is considering a benefit-sharing mechanism aimed at more effectively distributing the asymmetrical gains of the river basin. OKACOM should also consider an integrated tourism plan to ensure that the benefits of tourism are distributed among all three riparian countries. This could include an information-sharing platform for basin-wide tourism and wildlife experiences across all three riparian states, making use of joint marketing plans and encouraging partnerships with the private sector and community trusts.

## CONCLUSION

The international discourse on trans-boundary water co-operation is becoming increasingly pertinent given the growing global demand for water resources, exacerbated by climate change. The Cubango-Okavango River Basin provides an example of international co-operation on trans-boundary water systems where the harmonisation of national water policies ensures that the ecological integrity and ecosystem services necessary for socio-economic development are preserved. OKACOM provides an instructive model for the management of trans-boundary watercourses, as it uses various instruments to balance the national development needs of Angola, Namibia and Botswana to ensure that the biological capacity of the river basin is not compromised. OKACOM's success over the past two decades seems to hinge on a strong legal and institutional framework informed by scientific analysis, which fosters political trust and the will to sustain the harmonisation of national water policies. Looking ahead, OKACOM is focusing on developing a mechanism to distribute the benefits of the river basin equally among the riparian countries, and on becoming less reliant on external

donor funding through the use of innovative payment systems for ecosystem services. OKACOM should continue to pursue joint management strategies that include all local, national and regional stakeholders; remain resilient to the increasing pressure from climate change; and pre-empt potential conflicts that could arise from competing national interests. Despite facing pressing challenges, the lessons learnt from the 20 years of co-operation among Angola, Namibia and Botswana over the Cubango-Okavango River Basin are significant and offer an effective model for future co-operation, both regionally and internationally.

## ENDNOTES

- 1 Megan Bybee is studying towards her MA in International Relations at the University of Cape Town under the SAIIA/Konrad Adenauer Stiftung internship programme.
- 2 UN Water, World Water Development Report, 2014.
- 3 OKACOM (Permanent Okavango River Basin Commission), 'Fact Sheet for the Cubango-Okavango', <http://www.okacom.org/okavango-fact-sheet>, accessed 14 September 2014.
- 4 Murphey MJ, 'Botswana's Future Depends on the Protection of its Wildlife', Mmegi online, <http://www.mmegi.bw/index.php?sid=2&dir=2013/March/Thursday7#sthash.Y3mSRA.Ue5BzVKi.dpuf>.
- 5 OKACOM & FAO (Food and Agriculture Organization of the UN), *Cubango-Okavango River Basin Water Audit (CORBWA) Project Synthesis Report*. Rome: FAO, 2014, p. 32, <http://www.fao.org/docrep/019/i3743e/i3743e.pdf>.
- 6 *Ibid.*, p. 32.
- 7 OKACOM, 'National Action Plan (NAP) for the Sustainable Management of the Cubango-Okavango River Basin', March 2011.
- 8 *Ibid.*, p. 34.
- 9 *Ibid.*, p. 35.
- 10 *Ibid.*, p. 37.
- 11 Thresholds refer to the upper limits of sustainable extraction.
- 12 OKACOM & FAO, *op. cit.*, p. 62.
- 13 CORBWA Project Synthesis Report, *op. cit.*

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