



Outcomes of the EU Horizon 2020 DAFNE PROJECT

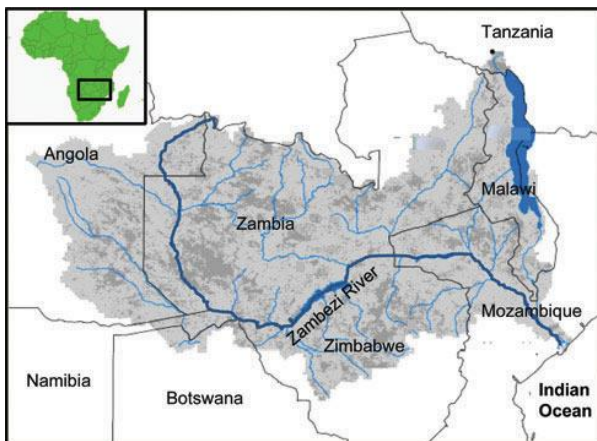
The Zambezi River Basin

Integrated Cooperation for a Vital Resource

KEY POLICY MESSAGES

- The integration of key legal and policy frameworks including international water law principles, the WEF Nexus and the Sustainable Development Goals could streamline existing efforts and further implementation.
- Benefit-sharing which extends beyond the energy sector could enhance regional integration and improve sustainable development within the basin.
- Harmonisation of laws, policies and commitments at national level could bring more benefits to all basin countries and enhance the exemplary ZRB governance structures within the basin
- Basin States which have not ratified the SADC Protocol and ZAMCOM agreement should be encouraged to do so, reaffirming commitment to water governance and improving uniformity across the basin.

THE ZAMBEZI RIVER BASIN



The Zambezi River Basin (ZRB) is the largest river basin in the Southern African Development Community (SADC), spanning eight countries of Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe. The countries all share different proportions of the basin and rely on it to different extents. Each of the basin countries have diverse natural and physical characteristics which create a number of governance challenges, but also opportunities, particularly for economic development through hydropower and irrigation. A fine balance must therefore be struck between the use of natural resources for economic growth, the implementation of

international and legal obligations and the pursuit of sustainable development.



This policy brief is derived from research conducted under €5.5M four-year EU Horizon 2020 and Swiss funded 'DAFNE' project which concerns the promotion of integrated and adaptive water resources management, explicitly addressing the WEF Nexus and aiming to promote a sustainable economy in regions where new infrastructure and expanding agriculture has to be balanced with social, economic and environmental needs. The project takes a multi- and interdisciplinary approach to the formation of a decision analytical framework (DAF) for participatory and integrated planning, to allow the evaluation of decisions based on social, economic and environmental needs, therefore reflective of sustainable development.

For further information on the project see <http://dafne-project.eu>



The population of the ZRB is estimated at around 32 million. The distribution of this population is uneven, with large areas uninhabited and others reserved for wildlife.

The basin has varied cultural and economic contexts, with economic activities including fishing, mining, agriculture, tourism and manufacturing. Each of the ZRB States depend on hydroelectricity from the ZRB. The basin is therefore a hugely important regional resource, the development of which has to be carefully managed.

DAFNE APPROACH

The legal/governance component of the DAFNE project conducted an extensive review of legal and policy frameworks at multiple levels: national, basin, regional and international.

- **International Water Law (IWL)**

It reviewed the extent to which the key principles of IWL (including equitable and reasonable use, no significant harm and the duty to cooperate) are used within the basin and provided information relating to how each principle could be used to enhance basin governance. It also looked at how these principles are presented within national policies and development plans.

- **The Water Energy Food Nexus (WEF)**

The principles of IWL were also linked to the WEF Nexus; illustrating how using key principles through the lens of multiple sectors can give greater 'substance' and clarity to legal provisions.

- **Sustainable Development Goals (SDGs)**

The research also linked to the sustainable development goals and the extent to which both of the aforementioned frameworks can help to contribute towards the achievement of the SDGs.

Overall, our analysis demonstrated that an integrated framework utilising each of these three frameworks, termed the Law, Nexus, Goals (LNG) approach would streamline existing efforts within the ZRB.



Images top to bottom: the majestic Victoria Falls, visited by approx. 1 million people annually (credit: Julie Gibson); an aerial view of Mazabuka sugar plantation (credit Fritz Kleinschroth/ATEC-3D); fishing boats on the Kafue River (credit: Fritz Kleinschroth).



HISTORY OF COOPERATION

The ZRB has a strong history of cooperation, extending to the 1987 Agreement between Zambia and Zimbabwe Concerning the Utilization of the Zambezi River which focuses on the management of the Kariba Dam and electricity sharing, and established the bi-national (Zambia and Zimbabwe) Zambezi River Authority. Today, an exemplary multi-level governance framework is in place.

Of the ZRB states, only Namibia has ratified the United Nations Watercourses Convention 1997 (UNWC); one of two key frameworks in place at an international level. However, it should be noted that Angola, Botswana, Malawi, Mozambique and Zambia all voted in favour of the adoption of the treaty (while Tanzania and Zimbabwe were absent from the voting process).

MULTI-LEVEL GOVERNANCE FRAMEWORK

INTERNATIONAL	1997 UN Watercourses Convention (UNWC) <i>Only ratified by Namibia</i>
REGIONAL	2000 SADC Revised Protocol on Shared Watercourses (SADC-PC) <i>Signed by all member states, Angola and Zimbabwe yet to ratify</i>
BASIN	2004 Agreement on the Zambezi Watercourse Commission (ZAMCOM) <i>Ratified by all ZRB States except Malawi who has only signed the agreement</i>

Despite few ratifications of the international level frameworks, the key principles of IWL are endorsed within both regional and basin level instruments. At regional level, the 2000 SADC Revised Protocol on Shared Watercourses largely replicates the key principles of the UNWC, with a couple of minor alterations. All ZRB States have ratified the agreement with the exception of Angola and Zimbabwe, who have only signed the agreement.

A number of additional policy documents, strategies and instruments for cooperation have also been produced by ZAMCOM, which can be accessed [here](#). This provision of further information can be seen as a demonstration of commitment to water governance within the

basin. Care must however be taken to ensure that the proliferation of frameworks and strategy documents does not limit capacity for implementation and monitoring of progress.

KEY FINDINGS

- The ZRB has a comprehensive governance framework in place which includes the majority of key principles established in IWL.
- Regional level frameworks through the SADC and basin agreements in place through ZAMCOM are robust.
- In many cases, laws are also backed up by policy frameworks and national development plans.
- However, there is a lack of consistent domestication of international legal principles.
- Environmental Impact Assessments and Transboundary Impact Assessments have the greatest variation across countries.
- Prevention of pollution is the most well-established principle across ZRB States.
- Uncertainty relating to the application of key principles may deter certain countries from incorporating them within national frameworks.
- It is essential to encourage greater stakeholder involvement in governance processes, demonstrating the relevance and use of governance principles.

BENEFIT SHARING

Benefit sharing is already taking place within the ZRB through power sharing agreements. This cooperation could be extended to other sectors such as irrigation, tourism and fisheries, catalysing the comparative advantage of each basin State and helping to negate the perception of downstream impact. As noted by Sadoff and Grey (2005), benefit sharing can take multiple forms:



Type	The Challenge	The Opportunity
Type 1 Increasing Benefits <i>To the River</i>	Degraded water quality, watersheds, wetlands, & biodiversity	Improved water quality, riverflow characteristics, soil conservation, biodiversity and overall sustainability
Type 2 Increasing Benefits <i>From the River</i>	Increasing demands for water, sub-optimal water resources management & development	Improved water resources management for hydropower & agricultural production, flood-drought management, navigation, environmental conservation, water quality & recreation
Type 3 Reducing Costs <i>Because of the River</i>	Tense regional relations & political economy impacts	Policy shift to cooperation & development, away from dispute/conflict; from food (& energy) self-sufficiency to food (& energy) security; reduced dispute/conflict risk & military expenditure
Type 4 Increasing Benefits <i>Beyond the River</i>	Regional fragmentation	Integration of regional infrastructure, markets & trade

While many of these forms of benefit sharing already take place within the ZRB, greater emphasis could be placed on using this framework to illustrate the strengths of increased cooperation.

KEY REFERENCES

Sadoff and Grey, 'Cooperation on International Rivers', *Water International* (2005) 30(4) 420-427

Yihdego and Gibson, 'Implementing International Watercourses Law through the WEF Nexus and SDGs: an Integrated Approach Illustrated in the Zambezi River Basin', *Brill Research Perspectives in International Water Law* (2020) 5(3) 3-90

Yihdego and Gibson, 'Models and Principles of Water Governance in the Omo-Turkana and Zambezi Basins' December 2018. Available [here](#).

KEY RECOMMENDATIONS

- There is significant opportunity to consolidate and improve the effectiveness of existing cooperative efforts.
- Promoting the integration of existing frameworks including IWL, the WEF Nexus and the SDGs (the LNG approach) could maximise capacity and streamline existing efforts.
- Achieving consistency with relation to understanding and implementation of key principles across all riparian States should be prioritised.
- Communication and stakeholder participation are key to ensure mutual understanding of existing rules in light of relevant scientific and policy frameworks.
- Benefit-sharing should be used beyond the energy sector to enhance regional integration and improve sustainable development within the basin
- The ratification of the SADC Protocol, ZAMCOM Agreement and international legal frameworks should be encouraged. Capacity building during transboundary water governance programmes should be targeted at illustrating the benefits which can be gained from doing so.

FURTHER INFORMATION

For further information and other disciplinary perspectives on the DAFNE project see

ACKNOWLEDGEMENTS

This Policy Brief was produced by Julie Gibson and Zeray Yihdego.

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