

EXECUTIVE SUMMARY

STRATEGIC PLAN FOR THE Zambezi Watercourse 2018-2040



ZAMBEZI WATERCOURSE COMMISSION



win-win cooperation / cooperacao, ganhas tu, ganho eu

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April 2019

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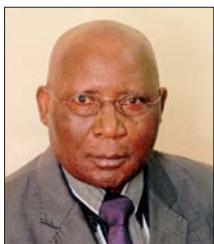
ZAMCOM definition of the “Zambezi Watercourse”

To align the terminology in the Strategic Plan with the 2004 ZAMCOM Agreement, the term “Zambezi Watercourse” is defined as: the system of surface and ground waters of the Zambezi constituting by virtue of their physical relationship a unitary whole flowing normally into a common terminus, the Indian Ocean. The “Zambezi Watercourse” is perceived broadly to also include the topography of the landscape and associated lands of the Zambezi River.

Abbreviations

CIWA	Cooperation in International Waters in Africa
CRIDF	Climate Resilient Infrastructure Development Facility
Danida	Danish International Development Assistance
DFID	UK Department for International Development
ECRAI	Enhancing the Climate Resilience of Africa’s Infrastructure
GDP	Gross domestic product
CIWA	Cooperation in International Waters in Africa
CRIDF	Climate Resilient Infrastructure Development Facility
Danida	Danish International Development Assistance
DFID	UK Department for International Development
GIZ	German Gesellschaft für Internationale Zusammenarbeit
JPSC	Joint Project Steering Committee
NASC	National Stakeholders’ Coordination Committee
SADC	Southern African Development Community
Sida	Swedish International Development Cooperation Agency
ZAMCOM	Zambezi Watercourse Commission
ZAMSEC	ZAMCOM Secretariat
ZAMTEC	ZAMCOM Technical Committee
ZAMWIS	Zambezi Water Resources Information System
ZSP	Strategic Plan for the Zambezi Watercourse

Foreword



On behalf of the Council of Ministers of the Zambezi Watercourse Commission (ZAMCOM), I wish to commend the Strategic Plan for the Zambezi Watercourse to the peoples of the Zambezi Watercourse. We all are

aware that the Zambezi Watercourse is one of Africa's largest and possesses the most valuable natural water assets. Being endowed with such assets, places upon us a responsibility to protect and develop them for the benefit of all our citizens including future generations.

The ZAMCOM Agreement, negotiated under the umbrella of the Revised Southern African Development Community (SADC) Protocol on Shared Watercourses of 2000, was signed in 2004 and came into force in 2011. The Agreement makes provision, in Article 8.1.(j), for the preparation of a Strategic Development Plan for the sustainable development and efficient management of the Zambezi Watercourse. I and my colleagues in the ZAMCOM Council of Ministers are proud to present this Plan in the spirit of the Agreement.

The Strategic Plan for the Zambezi Watercourse builds upon a significant body of previous studies and analysis undertaken in recent years to guide the equitable development and protection of the resources of the Zambezi Watercourse. These include the Integrated Water Resources Management Strategy and Implementation Plan for the Zambezi River Basin (2008); The Zambezi River Basin: A Multi-Sector Investment Opportunity Analysis, undertaken by the World Bank in 2010; the Dam Synchronization and Flood Release in the Zambezi River Basin Study (2011); the Zambezi River Basin Atlas of the Changing Environment (2012); and the Zambezi Environment Outlook (2015).

The Strategic Plan has been developed over the past two years using a stakeholder consultative process with regular input from the National Stakeholder Coordination Committees from each of the Member States; guidance from a Steering Committee with representation from each of the Member States called the Joint Project Steering Committee.

Input was also sought from the Basin-wide Stakeholders' Coordination Committee and the Zambezi Basin Stakeholders' Forum.

Consultations were also made with the ZAMCOM Technical Committee, the technical arm of the organisation whose functions include implementation of ZAMCOM Council decisions through the ZAMCOM Secretariat.

Input has also been sought from the ZAMCOM Council of Ministers during their annual sessions.

The Strategic Plan provides guidance and vision for the years to come and has four main components:

- The investment in and development of infrastructure to enhance water, food and energy security;
- The support of livelihoods in the Watercourse to reduce rural poverty and poverty driven degradation of land and water resources;
- The management and protection of the environment, particularly given the threat of climate variability and change; and
- The integrated management and protection of water resources

It is imperative now that the Strategic Plan is implemented through the engagement and co-operation of all parties at national and regional levels. We invite our international development partners to join us in building a prosperous and secure future for the Zambezi Watercourse.

This Strategic Plan for the Zambezi Watercourse will now provide guidance, under the leadership of the ZAMCOM Council of Ministers, for the development of the water and related resources of the Zambezi Watercourse. As provided for in Article 14.9 of the Agreement, which states that: *"Member States shall conduct their management and development plans, projects and programmes relating to the resources of the Zambezi Watercourse in accordance with the Strategic Plan"*.

ZAMCOM Council Chair
Hon. Dr. Dennis M. Wanchinga, MP
Minister of Water Development, Sanitation and Environmental Protection

April 2019

Preface



The Zambezi Watercourse is an expansive ecosystem whose potential for co-operation among the eight countries; Angola; Botswana; Malawi; Mozambique; Namibia; Tanzania; Zambia; and Zimbabwe

is primarily anchored in the prospective communal socio-economic development and environmental management.

It is in light of the afore mentioned potential that the 2004 Zambezi Watercourse Commission (ZAMCOM) Agreement, which came into force on 19 June 2011, provides for the preparation of the Strategic Plan for the Zambezi Watercourse (ZSP). In essence, the Agreement defines the ZSP as “a master development plan comprising a general planning tool and process for the identification, categorization and prioritization of projects and programmes for the efficient management and sustainable development of the Zambezi Watercourse”.

The ZSP acknowledges the limitations to development impinged by significantly limited and underdeveloped infrastructure in the Watercourse, notwithstanding the main strategic challenge of achieving balance between socio-economic growth that ensures environmental sustainability while minimising risks posed by climate extremes predominantly related to floods and droughts. The ZSP further admits the concern that the risks are further exacerbated by climate variability and change that pose the threat of poverty induced watercourse degradation.

Through the ZSP approach, it is imperative, that the Zambezi Watercourse Member States engaged a development pathway based that would enable maximization of economic benefits of water development in the Zambezi Watercourse whilst ensuring consistent maintenance of moderate environmental flows and providing for flood and low flows safeguard.

More importantly, the ZSP provides a platform for promoting a realization of benefits to Watercourse communities through investments at the national level on interventions that are of transboundary nature. Such investments have high potential to enhance regional dialogue on various issues that foster transboundary cooperation and integration among the Member States.

The preparation of the ZSP, through an elaborate consultative process, demonstrates the value of cooperation not only among the Member States but also with supportive international cooperating partners, particularly Danida and the World Bank.

The ZAMCOM Council of Ministers at its annual meeting on the 28 February, 2019 in Dar-es-Salaam, Tanzania impressed on ZAMCOM to promote delivery of benefits to the Watercourse communities. Above all, effective cooperation among the Member States and with various partnerships remains the mainstay of ZAMCOM's intent to facilitate the delivery of the much-anticipated benefits to Watercourse communities, through active implementation of the ZSP.



Michael Mutale
Executive Secretary
Zambezi Watercourse Commission (ZAMCOM)
April, 2019

Acknowledgements

The completion of the development of the Strategic Plan for the Zambezi Watercourse (ZSP) is a significant milestone for the Zambezi Watercourse Commission (ZAMCOM). The approval of the ZSP, by the ZAMCOM Council of Ministers at their meeting on 28 February 2019, henceforth provides guidance, at the highest level, towards development and management of water resources of the Zambezi Watercourse. The ZSP is geared to also promote all-inclusive cooperation not only among the Member States, per se, but largely in the whole lot of the Southern African Development Community (SADC). In essence, the ZSP will significantly contribute towards the realisation of the ZAMCOM objective of *“promoting the equitable and reasonable utilisation of the water resources of the Zambezi Watercourse as well as the efficient management and sustainable development thereof”*.

The development of the ZSP would not have been possible without the involvement of a cross-section of stakeholders that included: National Stakeholders’ Coordination Committees (NASCs) at national levels; ZAMCOM Technical Committee (ZAMTEC); International Cooperating Partners; and the ZAMCOM Council of Ministers. An elaborate consultative process was engaged in the development of the ZSP.

ZAMCOM, therefore, wishes to acknowledge and thank all stakeholders that actively took part in shaping the ZSP. Without the input from the Member States through NASCs, the ZSP would have lacked ownership and buy-in from the potential implementers of the Plan. NASCs are specially commended for the unwavering support and guidance during country consultations. The Member States prioritised the needs of the consultation process and allowed NASC dialogue meetings to take place despite other pressing national priorities.

Another group of stakeholders to whom ZAMCOM is grateful for their valuable input into the ZSP development process are members of the Basin-wide Stakeholders’ Coordination Committee which included representatives from partner organisations and NASC focal persons.

ZAMCOM is also indebted to the Joint Project Steering Committee (JPSC) for the cardinal role it played in

the review of the various ZSP outputs ranging from the Inception, the Situation Analysis and Strategic Directions, Basin Development and Infrastructure Inventory, Basin Development Scenarios, Basin Investment Scenarios, Draft Strategic Plan, Final Strategic Plan reports and the Online Monitoring and Implementation Tool. Furthermore, the JPSC facilitated multi-stakeholder consultation and information-sharing within the ZAMCOM Member States on the progress and implementation of the ZSP consultancy.

The ZAMTEC was instrumental in the approval process of the various outputs. The critical review and input of ZAMTEC contributed to the timely completion of the development of the ZSP. ZAMTEC reviewed and recommended the document for approval by ZAMCOM Council of Ministers – the final ZSP.

ZAMCOM wishes to thank the International Cooperating Partners especially Danida and World Bank (through Cooperation in International Waters for Africa (CIWA)) – for the generous financial contribution to the development of the ZSP, over the two years, besides other operational costs. ZAMCOM wishes to assure the International Cooperating Partners that the ZSP will remain a living document that will further revolutionise the development and management of water resources in the Watercourse.

ZAMCOM Council of Ministers is highly commended for their support of the ZSP and its development process which led to them authenticating it.

ZAMCOM hopes that the implementation of the ZSP will cherish the same support rendered during its development. Our trust is that the Member States will take the lead in the implementation of the Plan and as Secretariat we will provide the requisite support, accordingly.



Eng. Kenneth Nyundu
ZAMTEC Chair
April, 2019

EXECUTIVE SUMMARY

INTRODUCTION

Zambezi near Livingstone, Zambia / Len Abrams

The Zambezi Watercourse Commission (ZAMCOM) Agreement, which came into force on 19 June 2011, provides for the preparation of a strategic development plan, including a general planning tool for the identification, categorisation and prioritisation of projects and programmes for the sustainable development and efficient management of the Zambezi Watercourse.

ZAMCOM has accordingly prepared the Strategic Plan for the Zambezi Watercourse under which all activities of ZAMCOM and the ZAMCOM Secretariat (ZAMSEC) fall and which incorporates all other programmes and activities of the Commission.

The preparation of the Strategic Plan has been undertaken by ZAMCOM with the technical support of international expertise and the financial support of the World Bank and the Danish International Development Assistance (Danida), through a process including national consultations within the Member States of the Zambezi Watercourse. The preparation of the Strategic Plan has been built upon and incorporates work previously undertaken by ZAMCOM and takes into account the national and sectoral plans of the Member States.

THE ZAMBEZI WATERCOURSE

The Zambezi Watercourse is shared by eight Member States – Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe. The total population of the eight Member States is estimated at just over 173 million, of which an estimated 28% (47 million) live within the Zambezi Watercourse. The economies of the Member States are growing and are varied, depending primarily on rain-fed agriculture and extractive industries.

THE STATE OF THE ZAMBEZI WATERCOURSE

The Zambezi Watercourse is largely undeveloped with limited major infrastructure, the most recent of which was built 40 years ago. Currently total water withdrawals amount to 15% of the total average flow.

The main strategic issue faced in the Watercourse is achieving the balance between economic growth (inclusive of ensuring environmental sustainability) and the risk of droughts and floods posed by a historically highly variable climate, a risk which is predicted to be further exacerbated by climate change.

Poverty and poverty-induced degradation of the Watercourse are jointly the largest threats to the people, the ecosystems and future development of the Watercourse. This degradation is likely to intensify unless a concerted effort is made to improve the livelihoods of the poorest sectors of the population, who make up more than two thirds of the people living in the Watercourse and are mostly engaged in smallholder rain-fed agriculture, accounting for 96% of agricultural activity.

Poverty-induced degradation has resulted in 51% of land in the Zambezi Watercourse becoming moderately degraded and 14% highly degraded, with growing negative impacts on the population and on water resources.

FUTURE DEVELOPMENT

There are sufficient water resources in the Zambezi to support the implementation of the current investment plans of the Member States, **assuming future climate conditions remain consistent with historical mean climate conditions observed in the Watercourse.**

This is an important finding from previous phases of the preparation of the Strategic Plan, which included extensive hydro-economic modelling. This modelling explored the existing and future planned development of the Watercourse under different scenarios of environmental protection and disaster management in the context of both historic climate conditions and potential future climate change conditions. Given the current relatively under-utilized water resources of the Watercourse, the planned level of development will increase the total withdrawals to 31% of the historical mean flow, which is generally regarded as still falling below the threshold of water scarcity. **However, there are indications that under dry future climate scenarios, there will be water scarcity in some reaches of the Watercourse.**

Based on these results, a future preferred development pathway was decided on, upon which the Strategic Plan has been based:-

Maximise the economic benefits of water development in the Zambezi Watercourse, subject to the constraints of ensuring the maintenance of moderate environmental flows and provision of flood protection.

The impact of environmental protection is a function of watercourse-wide management. The environmental protection objective will be achieved with minimal impact on irrigation and power production only if there is operational coordination and co-operation between Member States and specific infrastructure assets (dam synchronisation etc.). If there is no co-operation, achieving these desired environmental and flood protection objectives may result in significant negative impacts on energy and food production objectives.

Climate change is a major threat to investment performance assuming full development in the Watercourse. However ZAMCOM-led collaboration and synchronization of operational activities across the Watercourse have the potential to reduce climate change impacts. Long-term development planning will need to be adapted as actual changes to the climate become apparent.

THE DEVELOPMENT OBJECTIVES OF THE STRATEGIC PLAN

The Development Objectives of the Strategic Plan for the Zambezi Watercourse are:

To promote and facilitate:

- | | |
|----------|---|
| A | Regional co-operation and good neighbourliness; |
| B | Development and utilisation of the resources of the Zambezi Watercourse for equitable economic growth and prosperity; |
| C | Sustainable and ecologically sound development and utilisation of the resources of the Zambezi Watercourse; |
| D | Climate resilient infrastructure and development, and to manage and reduce risk to investments and to society at large; |
| E | Public access to sufficient and safe water supplies, and related essential services, for basic needs and livelihoods; and |
| F | Capital mobilisation and investment finance. |

CORE COMPONENTS OF THE STRATEGIC PLAN

The Strategic Plan has four Core Components through which these different Development Objectives will be achieved. The Core Components are described in Box 1.

BOX 1: CORE COMPONENTS OF THE STRATEGIC PLAN		
1	<p>Infrastructure Investment</p> 	<p>Investment in water related infrastructure is required throughout the Watercourse in order to underpin economic and social development and contribute towards achieving the national development goals and aspirations of the Member States. Investment plans included in the Strategic Plan are based on the priorities and national plans determined by Member States within the parameters of the agreed investment scenario. The investment plan is distributed over two planning horizons: Short term – 2018-2027 and Medium term – 2028-2040.</p> <p>In line with the increasingly widely used Nexus Approach to development, the Infrastructure Investment Component has 4 Programmes:</p> <ul style="list-style-type: none"> • Hydropower; • Agricultural Water; • Water Supply Services; and • Catchment & Natural Asset Management.
2	<p>Livelihoods Support</p> 	<p>Poverty and its impact on the Zambezi Watercourse are the most pervasive problems facing the inhabitants of the Watercourse. Increasing the availability of water for smallholder farmers and improving rain-fed agriculture practices, together with catchment management and conservation investments, will both improve rural livelihoods and reduce environmental degradation. Livelihood support will be conducted in such a way as to support wider gender mainstreaming efforts in marginalized communities. Livelihood support will enhance the resilience of the region as a whole, whilst reducing the negative impacts of degradation of the Watercourse (e.g. high sediment loads, rapid siltation of reservoirs etc.).</p>
3	<p>Environmental Resources Protection and Utilization</p> 	<p>In keeping with the stated Development Objectives and the ZAMCOM Agreement, development and management of the Watercourse will ensure the sustainable protection and conservation of natural riverine and aquatic ecosystems and resources. Instream flow targets will to be set and monitored, together with the monitoring of specific systems such as wetlands and the delta.</p>
4	<p>Water Resources Management</p> 	<p>The Zambezi Watercourse is large and complex, with its water resources requiring collaborative management across the relevant Member States. Many of the required systems and networks needed to undertake these tasks have already been established by ZAMCOM, such as the Zambezi Water Resources Information System (ZAMWIS) and the Decision Support System.</p>
<p>Institutional Foundation</p> 		<p>This includes governance and management, harmonisation of policy and legislation in the Member States, together with the activities required to strengthen co-operation, communications, capacity development and gender mainstreaming.</p>



THE ROLE OF ZAMCOM

The role of ZAMCOM is to promote and support the sustainable development and efficient management of the Zambezi Watercourse for the equitable benefit of all the inhabitants, in terms of the ZAMCOM

Agreement. This includes the promotion of regional integration and co-operation between Member States. The principal instrument of ZAMCOM by which it will perform this role, in terms of the Agreement, is through the Strategic Plan.

The role of ZAMCOM will be as follows:

- To ensure that the principles of developing trans-boundary waters, as enshrined in the ZAMCOM Agreement, are observed, that is:
 - The principle of equitable and reasonable utilisation of shared water resources;
 - The duty to prevent significant transboundary harm; and
 - The general duty to cooperate.
- To provide an agreed platform and process for notification and resolution of notification-related issues and disputes, if these should arise;
- To promote transboundary integration and dialogue on infrastructure-related issues, together with regional bodies such as the Southern Africa Power Pool, Southern African Development Community (SADC), etc;
- To support Member States in transboundary water economics analysis, project preparation, project financing, and transaction management etc.;
- To promote investments in the Watercourse on the international stage and to attract investors, working in close collaboration with Member States and development partners; and
- To ensure that the design and implementation of investments meet the environmental and disaster risk management criteria agreed to in this Strategic Plan and subsequent amendments, including making provision for their ongoing monitoring;

- To monitor changes in climate over time and advise Member States on the implications of changes in climate, including adaptations needed to plans and project design;
- To promote and oversee the joint and cooperative operation of infrastructure on the Watercourse, including such activities as dam synchronisation; and
- To provide watercourse-wide oversight of the long-term planning of infrastructure development using the Decision Support System tools developed by ZAMCOM for this purpose.

FUNCTIONS AND ACTIVITIES OF ZAMCOM

ZAMCOM is not an infrastructure implementing agency – infrastructure development projects will be implemented either individually at the national level or, in the case of joint projects, together with two or more Member States. In order to support the implementation of the Strategic Plan, the ZAMSEC will be strengthened to provide a range of specialised support to Member States for national, joint and watercourse-wide projects, especially in the infrastructure development and livelihoods components of the Plan.

The support functions and activities which will need to be undertaken by ZAMCOM are indicated in Box 2.

BOX 2: ZAMCOM SUPPORT FUNCTIONS AND ACTIVITIES		
1	<p>Infrastructure Investment</p> 	<ul style="list-style-type: none"> ● Infrastructure development support unit <ul style="list-style-type: none"> • Economics of transboundary water • Support project design and preparation • Support project financing and packaging • Transaction management support
2	<p>Livelihoods Support</p> 	<ul style="list-style-type: none"> ● Livelihood programme support unit <ul style="list-style-type: none"> • Poverty 'hot-spot' identification • Livelihood research and analysis • Livelihood project support
3	<p>Environmental Resources Protection and Utilization</p> 	<ul style="list-style-type: none"> ● Environmental health monitoring <ul style="list-style-type: none"> • Watercourse-wide monitoring • Sensitive areas (wetlands, delta, head-waters etc.) • Degradation hot-spots ● Managing environmental impacts of investments <ul style="list-style-type: none"> • Establishing environmental impact guidelines • Engagement in project design and implementation • Monitoring of in-stream flow requirements • Support to operational co-operation and communication
4	<p>Water Resources Management</p> 	<ul style="list-style-type: none"> ● Water resources management <ul style="list-style-type: none"> • Water data capture, and management including ZAMWIS • Decision Support Systems • Knowledge management ● Notification coordination and support ● System operational oversight to promote coordinated energy production ● Policy and legislation support & harmonisation ● Disaster risk management ● Climate change monitoring, including – <ul style="list-style-type: none"> • 'Climate Watch' function • Climate change knowledge function
	<p>Institutional Foundation</p> 	<ul style="list-style-type: none"> ● Governance, co-operation and regional integration ● Communications ● Gender mainstreaming ● Capacity development

FINANCING

There are three principal areas of financing required for the implementation of the Strategic Plan for the Zambezi Watercourse. These are:-

- The financing of infrastructure projects included in Component 1: Infrastructure Investment and Component 2: Livelihoods Support portions of the Plan. Infrastructure projects will be financed and implemented at Member State level with the support of ZAMCOM through the proposed Infrastructure Development Support Unit;
- Financing of non-infrastructure activities and functions under Component 3: Environmental Resources Protection and Utilization and Component 4: Water Resources Management portions of the Plan. Finance will be sought jointly by Member States and by ZAMCOM; and
- Funding functions and activities of ZAMCOM and its organs.

ZAMCOM will provide support to Member States to prepare projects to international standards, framed in such a way as to be attractive to foreign investment, and to identify and package finance and investment resources from all possible sources, both private and public.

ZAMCOM will work in close collaboration with a variety of other organisations and institutions to achieve the Development Objectives of the ZAMCOM Agreement through the Strategic Plan. Such institutions include multi-lateral development agencies such as the World Bank

and the African Development Bank; bi-lateral agencies such as Danida, the UK Department for International Development (DFID), the Swedish International Development Cooperation Agency (Sida), the German Gesellschaft für Internationale Zusammenarbeit (GIZ) etc; regional development programmes such as Climate Resilient Infrastructure Development Facility (CRIDF) and the SADC Water Fund, and such initiatives as the African Water Facility, and Cooperation in International Waters in Africa (CIWA) (World Bank), etc.

Some basins in the region are faced with similar issues to those experienced by the Zambezi Watercourse. ZAMCOM will therefore seek close working relationships with river basin organisations such as OKACOM (the Permanent Okavango River Basin Water Commission), ORASECOM (the Orange-Senqu River Commission) and LIMCOM (Limpopo Watercourse Commission) with the possibility of developing shared capacity between the key basin organisations of the Southern African region.

STRUCTURE OF THE STRATEGIC PLAN

The Strategic Plan is comprised of two parts:

- Executive Summary
- Strategic Plan for the Zambezi Watercourse (this document)

Accompanying this Strategic Plan are the following background reports and tools:

- Situation Analysis and Strategic Directions Report;
- Basin Development Scenarios Report;
- Basin Investment Scenarios Report; and
- Online Monitoring and Implementation Tool.

Funded by



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