



ZAMBEZI

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Towards climate-smart investments in the Zambezi Watercourse

Egline Tauya

AN INNOVATIVE climate-smart framework is being developed to guide sustainable investments that address the impacts of climate change on livelihoods and development in the Zambezi Watercourse.

The investment framework is intended to support the development of strong communities that are resilient to climatic and economic shocks, through promoting inclusive, transformative investments, job creation, and ecosystem-based solutions.

A collaboration between the Zambezi Watercourse Commission (ZAMCOM), the African Development Bank (AfDB) and Strategic Partner Organisations – the Global Mechanism for the United Nations Convention on Climate and Desertification (UNCCD) and Climate Resilient Infrastructure Development Facility of the United Kingdom Government (CRIDF) – is developing the ZAMCOM investment framework known as the Programme for Integrated Development and Adaptation to Climate Change in the Zambezi Watercourse (PIDACC).

The specific objectives of the PIDACC Zambezi are to:

- increase feasible climate-resilient infrastructure that supports livelihoods;
- strengthen and build capacity of the communities to avoid, reduce and reverse land degradation and effectively manage water resources sustainably;
- develop and improve livelihoods by strengthening agribusiness through investments in water, energy, and food security sectors; and,
- enhance institutional development and adaptive capacity to reduce vulnerabilities.

With PIDACC Zambezi being developed as a multi-sectoral investment framework, it is envisaged to contribute to enhancement of sustainable management of such resources as land and water as well as strengthening of the capacities of communities and institutions to respond to natural and climate shocks. Incomes are expected to improve with livelihood diversification and enhanced multi-sectoral approaches.

The objectives of PIDACC Zambezi will be achieved by implementing investment projects at national and regional (Watercourse) levels, in the context of support, coordination, and institutional development.

In addition, cross-sectoral linkages and synergies in defining the baskets of potential investment activities, projects, or interventions will be considered.

The framework focuses on vulnerable communities in the Zambezi Watercourse including women, men, youth, children, and people living with disabilities. It targets multi-sectoral institutions and organisations in sectors such as water, land, agriculture, mining, tourism, energy, among others.

“PIDACC Zambezi is a game changer for the Zambezi Watercourse as it is envisaged to make positive impact among the resident communities and beyond. It is expected to be inclusive, to create jobs and to ensure environmental sustainability,” said Eng. Evans Kaseke, ZAMCOM’s Programme Manager for Strategic Planning.

The PIDACC Zambezi seeks to address the key challenges identified in the Strategic Plan for the Zambezi Watercourse (ZSP) which

are infrastructure deficit, persistent poverty, competing uses, disaster risk, and environmental degradation. The investment framework is anchored on the four pillars of the ZSP that are infrastructure investment, livelihoods support, environmental resources protection and utilisation, and water resources management.

The first component of the PIDACC Zambezi which is on strengthening integrated landscape management, seeks to optimise the placement and effective execution of conservation, sustainable land management and rehabilitation and restoration initiatives. This category will focus on sensitive areas including wetlands, the delta, and the Victoria Falls, which are important in terms of ecosystem services, and strategic water source areas, such as the Angolan Highlands.

Further, the component is aimed at ensuring that a robust, scientific evidence-based platform exists for multi-sectoral management information and practice. This component will ultimately contribute to refining and achieving land degradation neutrality targets set by the individual countries, and restoring ecosystem services at catchment level.

The second component of the framework contributes to the livelihoods support by increasing the availability of water for farmers, increasing their usage of climate-smart techniques in agriculture and agro-forestry, as well as building local capacity in sustainable land and water management.

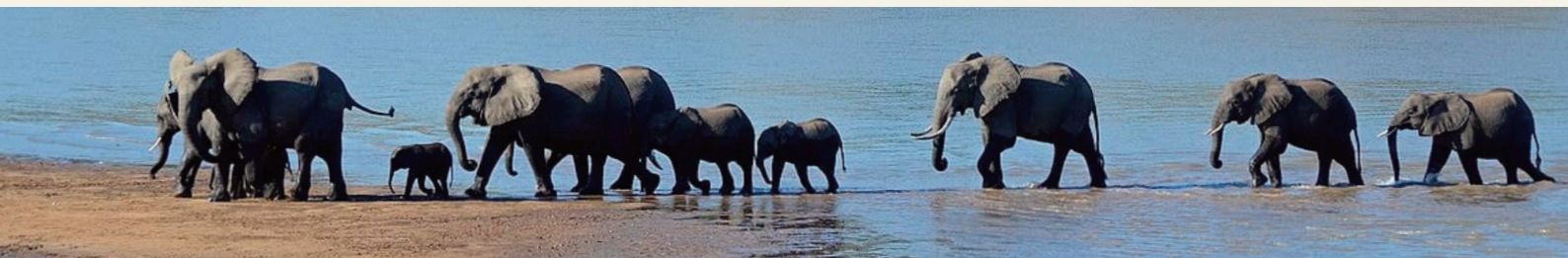
This ultimately promotes inclusive growth and resilience through job creation, livelihoods diversification, and industrialisation, while reducing or reversing land degradation.

This component also seeks to promote inclusive livelihoods support and diversification, through enhanced agribusiness development, thus promoting investments in water, soil, energy, and food security, while taking into consideration the fragility of the ecosystem.

The third component will focus on building capacities of institutions and key stakeholders to mainstream and monitor climate change and developing adaptive capacity and strengthening climate risk management to reduce vulnerabilities.

The component will contribute to ensuring good governance and management, harmonisation of policy and legislation, strengthening co-operation, communications, and guaranteeing social inclusiveness through gender transformative approaches.

The fourth component supports the execution of the programme and will subsequently devise a sub-component on monitoring, evaluation, learning, and knowledge-sharing to inform decisions. □





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EDITORIAL

Equitable and sustainable utilisation and management of transboundary water resources depends on an enabling environment that includes a sound legal framework and a clear and robust strategic and implementation plan.

The Zambezi Watercourse Commission (ZAMCOM) is setting the right pace to provide the necessary structures, frameworks, strategies, and tools that facilitate sustainable utilisation and management of water resources.

Following the coming into force of the 2004 ZAMCOM Agreement in 2011 and the establishment of a permanent Secretariat in 2014, the Commission has since been operationalising some of the key provisions of the Agreement.

One of these key provisions is on the development of the Strategic Plan for the Zambezi Watercourse (ZSP) 2018-2040, that forms the basis for watercourse-wide cooperation in the management and development of shared water resources as well as being the programmatic planning and operational framework for ZAMCOM. The climate-proofed and multi-sectoral Strategic Plan provides guidance in infrastructure investments, livelihoods support, environmental protection and utilisation, and integrated water resources management.

As part of efforts to start implementation of some aspects of the ZSP a Programme for Integrated Development and Adaptation to Climate Change in the Zambezi Watercourse (PIDACC Zambezi) is being developed through a ZAMCOM-AfDB-CRIDEF-UNCCD partnership.

The overarching objective of the PIDACC Zambezi is to “build strong communities that are resilient to climatic and economic shocks in the Zambezi Watercourse, through promoting inclusive transformative investments, job creation and ecosystem-based solutions.”

PIDACC Zambezi’s objectives are aligned to the ZSP’s four pillars so as to promote the realisation of the desired social and economic benefits to the Zambezi Watercourse communities.

The Zambezi Watercourse Commission is such an inter-governmental organisation in Southern Africa to establish a multi sectoral climate smart investments initiative that is responsive to climate change, learning from the PIDACC Niger.

Among the tools that facilitate cooperation, is the Zambezi Water Resources Information System (ZAMWIS) which is a repository for diverse data and information types whose key functions are to support planning and operational activities of the Commission as well as assisting informed decision-making processes.

ZAMCOM further developed a ZAMWIS Decision Support System (DSS) which is a special tool that aids in understanding river systems behaviour and evaluating alternative management options. The ZAMWIS-DSS assists with simulation of water balances, water allocation, river flows and support watercourse-wide scenario analysis and multi-criteria decision analysis to improve planning.

To improve sharing of information ZAMCOM ensured instruments of cooperation are in place. These include development of the Rules and Procedures for the Sharing of Data and Information related to the management and development of the Zambezi Watercourse; and Procedures for Notification of Planned Measures.

ZAMCOM also put in place provisions of platforms for multi-sectoral stakeholder engagement which is critical to guarantee ownership and credibility of outputs, products and outcomes.

These were formed at the riparian state and watercourse levels as National Multi-Sectoral Stakeholders Coordination Committees (NAMSCs) and Watercourse-wide Multi-Sectoral Stakeholders Coordination Committee (WAMSC). The NAMSCs serve as platforms for national consultations that facilitate input into watercourse-wide plans and processes, coordination and fostering ownership and legitimacy of results. The NAMSCs facilitate building of trust and confidence in ZAMCOM processes for dissemination of information.

The WAMSC coordinates NAMSCs’ inputs into basin-wide processes, plan and organise annual forums.

With these achievements and as the most shared transboundary natural feature in Southern Africa, the Zambezi Watercourse provides an indicator for meeting one of the objectives of the SADC Treaty: Article 5 on sustainable resource utilization and equitable management. ■



Climate-smart adaptation strategies for the Zambezi Watercourse

by Neto Nengomasha

THE RAVAGES of climate extremes in the Zambezi Watercourse require urgent action to adopt climate-smart adaptation strategies, as in other parts of Southern Africa, to avert a disaster.

Although the Watercourse has a well-documented cycle of floods and droughts, the region has been more severely impacted in recent years by floods, droughts, and tropical cyclones of higher magnitudes.

Climate projections already indicate a significant increase in temperature across the Zambezi Watercourse, with changes in seasonal rainfall patterns, including delayed onsets and shorter, more intense rainfall events. The Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) of 2021 confirms that the Zambezi Watercourse is the most vulnerable to climate change impacts and variability among 11 major African Watercourses.

Using the period 1961-1990 as a baseline, the Watercourse is expected to be hotter and drier by 2050. The major features of this phenomenon include a temperature increase per decade of 0.3 to 0.6°C, with an increase of 0.8°C in the summer months, a 10-25% increase in evaporation, a 10-15% reduction in rainfall, and a 20-40% reduction in runoff by 2050.

The more frequent droughts in the Watercourse have led to food insecurity, particularly in rural areas where most of the local population does not have resources to rebuild after such events.

In the 2015/16 agricultural season, the Zambezi Watercourse and the rest of Southern Africa experienced a severe drought which was described as the worst in 35 years, leaving an estimated 40 million people food insecure, according to the SADC Vulnerability Assessment Report of June 2016.

The tropical cyclones developing in the south Indian Ocean that directly impact the Zambezi Watercourse are projected in the IPCC reports to become more intense, with higher peak wind speeds and heavy precipitation associated with increases in the tropical sea surface temperatures.

In 2019, parts of the Zambezi Watercourse were devastated by Tropical Cyclone Idai which left a trail of destruction in Malawi, Mozambique, and Zimbabwe.

Over 800,000 hectares of cropland and crops and seed stocks were destroyed by the cyclone, while about 3.3 million people were left in need of immediate humanitarian assistance such as food, shelter, clothing, potable water, sanitation, and medical support.

In January 2021, large areas of cropland were flooded by Tropical Cyclone Eloise in Mozambique, which also had a lesser impact



on Zimbabwe and other countries in the region. Mozambique's central and southern provinces were hit by Tropical Cyclone Guame at the beginning of February 2021, while Tropical Storm Chalane had caused some flooding in Mozambique in late December 2020.

During the 2021/22 rain season, the Zambezi Watercourse was affected by several storms and cyclones including Tropical Storm Anna and Cyclone Gombe. Tropical storm Anna left a trail of destruction in Malawi and Mozambique with heavy rainfall experienced in some parts of Zimbabwe.

Given this situation, the Zambezi Watercourse embraces strategic climate resilience investments initiatives to reduce anticipated impacts by incorporating predicted climate changes and variabilities during planning, designing, and implementing projects and programmes.

One such initiative is the Programme for Integrated Development and Adaptation to Climate Change in the Zambezi Watercourse (PIDACC Zambezi) which seeks to "build strong communities that are resilient to climatic and economic shocks in the Zambezi Watercourse, through promoting inclusive transformative investments, job-creation and ecosystem-based solutions."

ZAMCOM has teamed up with the African Development Bank (AfDB) and two of its Strategic Partner Organisations (SPOs) -- the Global Mechanism for the United Nations Convention to Combat Desertification (GM-UNCCD) and the Climate Resilient Infrastructure Development Facility (CRIDF)

-- in the development of the PIDACC Zambezi.

The PIDACC Zambezi will be achieved through the implementation of investment projects at both the national and regional levels, within the context of support, coordination, and institutional development.

The programme incorporates inclusive transformative investments to support the implementation of the Strategic Plan for the Zambezi Watercourse (ZSP).

To build community resilience, PIDACC Zambezi will prioritise climate resilient, small-to-medium scale infrastructure development and inclusive livelihoods support. These priority areas are critical in the Zambezi Watercourse and will help to increase the availability of water for farmers by increasing their usage of climate-smart techniques for agriculture and agro-forestry, as well as building local capacity in sustainable land and water management.

As such, the investments into small-to-medium projects will assist local communities to be more resilient and build their capacities to respond to the various threats such as climate change and pandemics.

Through incorporating the nexus approach, the climate smart investments will result in improved and resilient livelihoods with improved food security and access to energy in the Zambezi Watercourse. ▢

Interview with the new ZAMCOM Executive Secretary, Mr. Felix M. Ngamlagosi

THE ZAMBEZI Watercourse Commission has a new Executive Secretary (ES). His appointment follows the passing on of Mr. Michael Mutale who was ES from December 2018 to June 2021. *Zambezi Today* sat with the new ES, Mr. Ngamlagosi and had the following exchange:

Congratulations on your appointment as the new Executive Secretary of ZAMCOM. May you briefly tell us who Felix Ngamlagosi is and your journey in transboundary water resources management in southern Africa?

Thank you.

I am an economist with over 30 years of professional experience in the energy, water and sanitation sectors. I come to ZAMCOM after having held various positions including that of Senior Economist in ministries responsible for water and energy in the United Republic of Tanzania where I guided policy formulation and reviews, sector development programme design, strategic planning and public expenditure reviews.

I am also a certified regulation specialist who has worked in the energy and water sectors at national, regional and continental levels. I have facilitated sector and institutional restructuring and reforms; development of regulatory frameworks; preparation of corporate strategic planning for government ministries, public institutions and the private sector.

It is an honour and a privilege to me to be offered an opportunity to work in this noble regional organ which has a role to promote and support the sustainable development and efficient management of the Zambezi Watercourse for the equitable benefit of all the inhabitants.

What are some of the major issues you consider urgent that you want to tackle in your first few months as ZAMCOM Executive Secretary?

In 2019, the Council of Ministers approved the Strategic Plan for the Zambezi Watercourse (ZSP). This was after a two-year consultative process of its development. The ZSP, as you may know, has a list of prioritised interven-



tions which the Riparian States listed during consultations. However, the ZSP does not have an implementation plan. Therefore, preparation of a ZSP implementation plan is one of my main priorities. This will be followed with actual implementation of the ZSP.

As you may be aware, ZAMCOM is in the process of developing an investment programme called the Programme for Integrated Development and Adaptation to Climate Change in the Zambezi Watercourse (PIDACC Zambezi). My role is to ensure that the forged partnership around PIDACC Zambezi, between the African Development Bank, ZAMCOM's Strategic Partner Organisations – Climate Resilient Infrastructure Development Facility (CRIDF), Global Mechanism of the United Nations Convention to Combat Desertification (UNCCD) -- and other strategic Partners is strengthened and that PIDACC Zambezi is implemented.

Another area of priority is resource mobilisation for the organisation. As you may know, from the year 2020, ZAMCOM has mainly been funded by financial contributions from Riparian States. This contribution mainly covers operations of the ZAMCOM Secretariat and a few activities. It is not adequate to cover major activities. It is my intention to strengthen the partnership between ZAMCOM and the International Cooperating Partners (ICPs) through the Zambezi ICPs Partnership, established in 2011 during the interim phase of the ZAMCOM Secretariat. This entails convening a round table of ICPs operating in the Zambezi Watercourse and beyond to mobilise financial resources to compliment what has been negotiated under the AfDB, CRIDF and UNCCD partnership.

The Strategic Plan for the Zambezi Watercourse (ZSP) is ZAMCOM's flagship. Could you tell us how you intend to ensure that this Strategic Plan remains alive and delivers ZAMCOM's objectives?



The ZSP, as you have correctly stated, is the flagship of ZAMCOM. The ZSP, will not know the comfort of a shelf as it will remain alive. All ZAMCOM activities are aligned to its four pillars, namely:

- **Infrastructure Investment** which focuses on hydropower generation, agricultural water, water supply services, and catchment and natural asset management;
- **Livelihoods Support** which aims to improve livelihoods through addressing socio-economic, environmental, political and climatic challenges affecting the ability of communities to adapt or respond to shocks;
- **Environmental Resources Protection and Utilization** which aims to address degradation hotspots caused poor land use methods, deforestation, erosion, loss of soil fertility, overgrazing, etc.; and,
- **Water Resources Management** meant to ensure sound water resources management and development.

To ensure it remains alive and delivers on expectations, my job is to ensure that our annual work plans are aligned to the ZSP pillars. I will also ensure that any partnerships we forge and activities agreed on, be it with ICPs or Strategic Partner Organisations (SPOs) are aligned to the ZSP.

My ambition is to drive a high-performance culture, remaining true to our values while remaining focused to our vision: a future characterised by equitable and sustainable utilisation of water for social and environmental justice, regional integration and economic benefit for present and future generations.

Do you foresee any challenges in implementing the ZSP?

Challenges will always be there in any big initiative such as the ZSP. There is a lot of interest in the ZSP and its implementation. ZAMCOM has many partners and will need them as we implement the ZSP. I believe that with a strong team and cooperation of all key internal and external stakeholders and preparedness to challenge ourselves, we can realize the vision of the Zambezi Watercourse Commission. It is up to us, as a team, to ensure we manage these interests well and remain focussed and aligned to the Strategic Plan's objectives and outlined pillars.

How do you intend to work with other River Basin Organisations (RBOs) as well as development partners, civil society and youth groups?

ZAMCOM cannot work in a vacuum. The Zambezi Watercourse is too diverse to do that. ZAMCOM already has Memoranda of Understanding (MOUs) with a number of its partners and is discussing more with other partners. This is meant to ensure that the Zambezi Watercourse is recognised as one of the champions of co-operation in developing and managing transboundary water resources.

Already, ZAMCOM works in partnership with the Southern African Development Community (SADC) and other River Basin Organisations (RBOs) in convening the bi-annual RBOs workshops. Let me point out that ZAMCOM actually hosted the last workshop held in September 2021.

ZAMCOM has in place stakeholder groups including the Watercourse-wide Stakeholders Coordination Forum, the National Stakeholders Coordination Committees which incorporate the National Multi-Sectoral Stakeholders Coordination Committees. These groups are instrumental in ensuring that ZAMCOM's principle of stakeholder engagement and consultation is kept alive.

What do you see as the role of the ZAMCOM Secretariat in promoting regional integration and sustainable utilisation and management of transboundary water resources in the region?

ZAMCOM should continue working with SADC, other RBOs and partners to champion cooperation in the sustainable utilisation and management of transboundary water resources in southern Africa.

ZAMCOM will continue to promote cooperation in the area of data and information sharing. Am sure you know that we have a very well designed Zambezi Water Information System (ZAMWIS) and a Decision Support System (DSS). The ZAMWIS-DSS is a powerful tool that facilitates real time data sharing to enable Riparian States take decisions around floods and droughts.

ZAMCOM will also continue exploring the creation of synergies in the application of tools and implementing lessons learnt from other RBOs. ▢

ZAMCOM and its strategic partners collaborate to implement climate resilience initiatives

by Neto Nengomasha

THE BENEFITS of cooperation are being realised as strategic partners collaborate on initiatives to promote climate resilience in the Zambezi Watercourse.

The Programme for Integrated Development and Adaptation to Climate Change for the Zambezi Watercourse (PIDACC Zambezi) involves the Zambezi Watercourse Commission (ZAMCOM) as the key facilitator, with Strategic Partner Organisations (SPOs) who are providing the necessary technical and financial support.

Among the key SPOs supporting the development and implementation of PIDACC Zambezi are the Global Mechanism of the United Nations Convention to Combat Desertification (GM-UNCCD), the Climate Resilient Infrastructure Development Facility (CRIDF) and the African Development Bank (AfDB).

Both CRIDF and UNCCD provided financial support for the Pre-feasibility study while the African Development Bank (AfDB) is expected to provide financial support in the form of grants and loans to the Riparian States for national projects and the ZAMCOM Secretariat for regional activities.

The UNCCD and CRIDF are also expected to financially support the Environmental and Social Management Framework, an exercise expected to be conducted at national level in the participating Riparian States as part of preparation for PIDACC Zambezi. CRIDF partnered with ZAMCOM to develop the Strategic Plan for the Zambezi Watercourse (ZSP) particularly in the formulation of the Livelihoods Support pillar and identification of hotspots as well as the formulation of the PIDACC Zambezi.

“By carefully weighing people’s needs our approach prioritises areas for livelihoods interventions to overcome poverty and sustainable use of our water and natural resources” says Dr Charles Reeves, the CRIDF’s Team leader. In the ZSP, CRIDF also supported the integration of climate resilience into the planning and development of water infrastructure, focusing on all the Zambezi Riparian States.

The implementation of these initiatives aims to promote water and food security for the rural areas and, in so doing, reduce vulnerability to climate change and variability.

Apart from PIDACC Zambezi, CRIDF supports a number of infrastructure projects across the Zambezi Watercourse system.

One illustrative case is the Ruhuhu Irrigation and the Kikonge Dam where CRIDF is implementing irrigation projects in the Ruhuhu River Basin that is located in southern Tanzania and drains into Lake Nyasa/Niassa/Malawi.

The projects aim to promote climate resilience, transboundary water management and socio-economic development through climate change risk assessment.

The Kikonge Dam on the Ruhuhu River is earmarked for hydropower generation and water storage. The dam is expected to store six billion cubic metres of water for agricultural use and hydropower generation. Implementation of the project will also contribute to flood control and improved water supply for local communities.

Another developmental project is the Mashili Small Dam Resilience Project in Zambia where CRIDF is strengthening the climate resilience of communities around Mashili Dam in Shibuyunji, Lusaka Province, by providing water for livestock, fish farming and vegetable gardens.

The Mashili Dam provides water for more than 50 households farming over 10 hectares of land, and is used to water more than 6,000 head of livestock.

ZAMCOM is collaborating with Malawi and the United Republic of Tanzania where the Riparian States are working together to develop dams and associated power stations, irrigation schemes and social development initiatives on the Songwe River.

Through the AfDB, the two governments invested nearly £5 million on a detailed design project and requested CRIDF support to develop a financial strategy and provide an expert panel on dam safety, enabling both countries to explore the potential for comprehensive public-private partnerships.

Further, ZAMCOM and the Kavango-Zambezi Trans Frontier Conservation Area (KAZA) Secretariat signed a memorandum of understanding for collaboration in a study on sustainable groundwater management in the KAZA part of the Zambezi Watercourse, covering the riparian states of Angola, Botswana, Namibia, Zambia, and Zimbabwe. Other partners are SADC Groundwater Management Institute and International Water Management Institute.

ZAMCOM is collaborating with the World-Wide Fund for Nature in strengthening and enhancing cooperation among the Republics of Angola, Botswana, Namibia and Zambia in the governance of transboundary Cuando River Basin. Lessons from this pilot project will be up-scaled to the regional Watercourse level.

ZAMCOM is also collaborating with WaterNet, a regional network and the Southern African Development Community’s (SADC) subsidiary institution for capacity building in Integrated Water Resources Management (IWRM). Its major aims are to build institutional and human capacity in IWRM through training, education, research, and outreach.

The WaterNet Programme has been instrumental in providing technical capacity to ZAMCOM Riparian States.

At the core of all activities that ZAMCOM is implementing through partnerships are strong multi sectoral stakeholder processes that ensure ownership of projects and outputs by the Commission. □





Plans underway to increase energy investments in the Zambezi Watercourse

by Neto Nengomasha

THE ZAMBEZI Watercourse Commission (ZAMCOM) is planning to increase investments in energy infrastructure and explore other sustainable sources to improve both national and regional energy security.

The Riparian States continue to experience a power supply deficit due to growing demand against limited expansion in generation capacity.

Frequent droughts have caused low water levels in most major reservoirs, affecting energy generation.

Memorable severe droughts to occur in the Zambezi Watercourse were recorded in 1991-1992, 1994-1995, 2015/16 with the most recent being in 2019. All were due to extremely poor rainfall seasons whose adverse impacts included among others poor runoff and very low river flows, depleted reservoir levels as in the Kariba Reservoir, resulting in reduced hydropower generation. Critical adverse impacts of these severe droughts were poor water supply and sanitation services, reduced irrigated agricultural and industrial production, and tourism.

During the 2015/16 drought period, the Zambezi River Authority reported that water levels in Kariba Dam between Zambia and Zimbabwe dropped to only 12 per cent of capacity in February 2016 compared to 53 per cent recorded at the same time in 2015. As a result, potential annual power generation was reduced by more than 50 per cent.

The *Zambezi Environment Outlook 2015* warned that power demand in the Zambezi Watercourse and the rest of the Southern African Development Community (SADC) had expanded at an estimated rate of three per cent per annum.

In October 2015, the United Republic of Tanzania was forced to switch off its hydropower plants due to low water levels in the country's dams. As a result of low water levels, hydroelectricity generation had fallen to 20 per cent of capacity, making it difficult for dams to operate.

The incessant energy deficit challenges being experienced across the Zambezi Watercourse remain a limiting factor to accelerated regional socio-economic and environmental development.

The necessity for increased investments to address the substantial infrastructure deficit across the whole of the Zambezi Watercourse is one of the critical issues that emerged during the consultative process for the Situational Analysis and Strategic Directions Report that informed the development of the Strategic Plan for the Zambezi Watercourse.

ZAMCOM will be looking at enhancing its sustainable energy portfolio that includes solar, hydro, biomass, wind and geothermal, among other sources.

A key regional initiative with the potential to transform the energy security situation is the implementation of the Programme for Integrated Development and Adaptation to Climate Change (PIDACC Zambezi) which, among other things, is aimed at supporting climate-resilient infrastructure development and community livelihood infrastructure in the Zambezi Watercourse.

The ZAMCOM's endeavour to improve on regional energy security through climate smart investments will be strongly informed by among other pillars of organisational cooperation that of the AfDB to "Light up and power Africa".

Under the PIDACC Zambezi component on building the resilience of communities, the Zambezi Watercourse plans to invest in community-level infrastructure to establish alternative energy supply through micro-hydro power schemes or solar power generation to increase energy access.

The PIDACC Zambezi is a collaboration between ZAMCOM, the African Development Bank, the Global Mechanism of the United Nations Convention to Combat Desertification (GM-UNCCD) and the Climate Resilient Infrastructure Development Facility (CRIDF). The two Strategic Partners, UNCCD and CRIDF have both financially supported preparatory activities for PIDACC Zambezi. The AfDB will be supporting Riparian States and ZAMCOM through loans and grants at national and regional levels to implement the Programme.

Research has shown that most countries in the Zambezi Watercourse and the rest of the SADC region receive more than 2,500 hours of sunshine per year, making investments in solar viable.

The knowledge about solar energy is now widespread in the Zambezi Watercourse, especially on its efficient results and low operating costs.

However, its use is largely limited to small-scale cooking and water-heating technologies and pumping water for agriculture, except for Victoria Falls and Harare in Zimbabwe, where it is gaining traction as a source of power generation.

To fully exploit the existing potential for solar in the Zambezi Watercourse, studies show that its expansion and widespread use will depend on innovative measures to reduce the initial cost, while improving the performance of solar electric technologies.

Further, as demand for renewable energy sources gains momentum, some SADC Member States are slowly turning to wind power to boost production and meet the ever-growing demand for electricity.

Wind is regarded as a reliable and clean form of power generation that does not pollute the environment, although some environmental impacts are beginning to emerge from studies conducted on large-scale wind farms.

Wind power on a large grid can contribute substantially to annual electricity production without special storage, backup, and load management arrangements.

In Mozambique there are already plans to develop a wind farm in the Matutuine district, north of Maputo, with capacity to produce more than 20MW of power. Tanzania plans to build a 50MW wind farm in the country's central region.

Natural gas is becoming a significant energy source in the region, especially in Mozambique, Namibia, and Tanzania, where investments are being made in developing the gas fields.

The SADC Energy Investment Yearbook report of 2017 indicates that new natural gas discoveries by international oil companies in Mozambique and Tanzania in the past decade have ignited investor interest, as has more recent exploration in Namibia. □





Analytical tools and data can improve implementation

by Hastings Chibuye and Egline Tauya

A DATA and Information management system that enables the generation and sharing of evidence-based knowledge has been developed to improve the implementation of planned measures in the Zambezi Watercourse.

To facilitate this work, the Zambezi Watercourse Commission (ZAMCOM) Council of Ministers adopted the rules and procedures for sharing data and information related to management and development.

The specific objectives of these rules and procedures are to specify:

- ❖ the type of data and information to be shared as well as sources, frequency, format, standards, quality assurance, and the method of transfer;
- ❖ roles and responsibilities of involved institutions;
- ❖ timeframes for supplying the agreed data and information, and
- ❖ ownership and access rights to shared data and information.

As a first step towards reaching these objectives, ZAMCOM developed the Zambezi Water Resources Information System (ZAMWIS), which is essential in supporting informed decision-making and planning processes in the Zambezi Watercourse.

ZAMWIS is an interactive, web-based data and information system using contemporary and historical spatial data, hydrological time series, earth observation information, knowledge products, and other related information.

This will serve as a data and information depository for planning, sustainable utilization, and efficient and equitable use of the water resources of the Zambezi Watercourse, providing a platform for storage, visualization and presentation of Geographical Information System and earth observation data.

The system is operational and enables the Riparian States to routinely share data and information in the spirit of basin-wide cooperation.

In each Riparian state, a Windows version of ZAMWIS software was installed to facilitate the processing, storage and exchange of data and information among the Zambezi Riparian States.

One of the functions of ZAMCOM is to “collect, evaluate and disseminate all data and information on the Zambezi Watercourse as may be necessary for the implementation of the Agreement.”

Therefore, this water resources information system is an essential tool for the ZAMCOM Secretariat to be able to carry out this function.

In addition, Analytical Tools/basin-wide Decision Support System (ZAMWIS-DSS) has been developed with CIWA administered by the World Bank.

The primary purpose of the ZAMWIS-DSS is to effectively support information generation and decision support (integrated basin models) systems for the Zambezi River Basin and to support water resources planning, management and development, and to address issues such as water allocation and the impacts of proposed interventions in the Watercourse. □

Kwando/Cuando River Basin Health Report Card and the State of the Basin Report launched

ZAMCOM IN partnership with the World-Wide Fund for Nature (WWF) Zambia, Kavango-Zambezi Transfrontier Conservation Area (KAZA) and the Kwando/Cuando River Basin Riparian States launched two reports – The Kwando/Cuando State of the Basin Report and the Kwando/Cuando River Basin Health Report Card. The launch took place in Livingstone, Zambia on 3 June, 2022.

The Zambia’s Acting Permanent Secretary in the Ministry of Water Development and Sanitation Mr. Lewis Mwansa officially launched the reports.

In his launching remarks, the Acting PS noted that the Kwando/Cuando is a critical headwater basin for both the KAZA and the entire Zambezi Watercourse.

“The resultant key message to all the eight Zambezi Watercourse Riparian States is that ‘Coming together is a beginning; keeping together is progress; and working together is success,’” he said, quoting Henry Ford the founder of Ford Motor Company.

“A key lesson for all Zambezi Watercourse stakeholders is that partnerships are an imperative to successful delivery of quality results as they bring together, among others, much needed skills, resources and requisite information which also inform quality decision making.

The two reports are a result of a project titled “Transboundary Governance of the Kwando/Cuando River Basin: Protecting the Heart of Southern Africa” implemented by the partnership from 2019.

The specific objective of the Kwando/Cuando River Basin Project was to strengthen the transboundary dialogue, cooperation, planning, management, and governance of water resources in the Kwando/Cuando River Basin in Southern Africa to reduce any potential for conflict among the Riparian States.

The Kwando/Cuando River Basin is shared by four Southern African countries. These are: The Republics of Angola, Namibia, Botswana and Zambia – all Zambezi Watercourse Riparian States.

In his welcome remarks during the launch, the ZAMCOM Executive Secretary, Mr. Felix Ngamlagosi congratulated WWF, KAZA and the four Riparian States for the demonstrated transboundary cooperation that culminated in the successful completion of the project despite the challenges presented by the COVID-19 lockdowns.

“The successful implementation of the Kwando/Cuando River Basin Project clearly demonstrates the multi-sectoral stakeholder spirit that enhances transboundary dialogue and cooperation on programmes and projects that ultimately contribute to the upliftment of the socio-economic welfare of Zambezi Watercourse inhabitants, in general, and its river basins, in particular, while protecting the integrity of the environment is paramount,” Mr. Ngamlagosi said.

The Executive Secretary said lessons and experiences and outputs from this project will be up-scaled to the regional stakeholder driven efforts for the implementation of the Strategic Plan for the Zambezi Watercourse. This will be done through the Programme for Integrated Development and Adaptation to Climate Change in the Zambezi Watercourse, an investment programme which ZAMCOM is developing with its Strategic Partner Organisations.

These include the Global Mechanism for the United Nations Convention to Combat Desertification, the Climate Resilient Infrastructure Development Facility and the African Development Bank. □

