

# THE ZAMBEZI

Volume 7 no 3

## **Action on climate change to advance sustainable development in the Zambezi Basin**

by Tigere Chagutah

The climate change challenge, while serious and urgent, also brings with it enormous opportunities for Zambezi Basin states to advance efforts towards sustainable development.

Although no focused studies on the severity of climate change impacts in the basin have yet been concluded, experts say the recent spate of floods and droughts and increased unpredictability of rainfall leaves little room for delay in implementing mitigation and adaptation strategies.

Climate variability has been observed from season to season throughout the Zambezi River Basin.

A report on "The impact of climate change on the Mosi-oa-Tunya World Heritage Site" prepared by the National Heritage Conservation Commission and the Provincial Meteorological Office in Livingstone, Zambia, says average annual rainfall for Livingstone Meteorological Station has fallen gradually from 1960 to date.

A similar trend has been observed for monthly and daily data while the level of water in the Zambezi River has also decreased over the same period.

The onset of the rain season has become unpredictable while the frequency of long dry spells within the rainfall season has increased across the basin.

This trend has become more pronounced beginning in the 1980s to date according to data collected at the Livingstone Meteorological Station.

A changing climate will affect all aspects of life in the basin in which the majority of farmers depend on rain-fed agriculture for their livelihoods.

continued on page 4



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# EDITORIAL

Climate change is one of the most important and complex challenges facing the Zambezi River Basin, much as in the rest of the world. Projected changes in the earth's climate present more than just an environmental concern but also serious social and economic implications.

While the riparian states of the Zambezi River Basin bear little responsibility for the build-up of carbon dioxide and other global warming gases in the earth's atmosphere, they stand to bear the brunt of the environmental, social and economic consequences of a warming climate.

Southern Africa – in which the Zambezi Basin wholly lies – has been identified as one of the regions around the world most susceptible to the impacts of climate change.

Global warming could seriously impair ability of the riparian states to reach the Millennium Development Goals (MDGs), the set of eight internationally agreed goals for improving social and economic indicators by 2015.

Impacts such as flooding, drought and desertification could lead to loss of agricultural land, degradation of water sources and destruction of social and economic infrastructure.

Climate change and variability continue to pose a threat to the delicate balance in food security through erratic rainfall patterns and decreasing crop yields.

Furthermore, adverse climate change impacts on natural systems and resources, infrastructure and labour productivity may lead to reduced economic growth, exacerbating poverty.

A warmer climate is also predicted to promote the spread of livestock and human diseases. Approaches used to address climate change will have profound implications for human development in the basin.

The Intergovernmental Panel on Climate Change warns in its Fourth Assessment Report that, "With current climate change mitigation policies and related sustainable development practices, global greenhouse gas emissions will continue to grow over the next few decades."

Climate change requires a long-term global response, in line with the latest scientific findings, and compatible with economic and social development.

In defining mitigation and adaptation measures, the riparian states have a window of opportunity to ensure that the impacts of climate change in the basin do not ultimately prove to be as destructive as is predicted.

However, this window of opportunity is relatively brief and emphasis should be on appropriate and early action.

There is a need for the Zambezi Basin riparian states to implement an integrated and balanced response to climate change by adopting technologies that would not only reduce greenhouse gas emissions but also add to long-established efforts towards sustainable development.

Reversing deforestation, adopting more efficient and cleaner energy producing technologies and expanding the use of bio-fuels in the transport sector would bring about benefits, not only in terms of reducing climate change risks, but also in terms of reducing other environmental problems. Such measures would also address economic goals, including reduced dependence on imported petroleum products and creating employment.

Increased use of small-scale rainwater harvesting technologies would help to improve crop productivity and lead to improvements in water management and poverty reduction as well as reduced vulnerability to climate change in all sectors.

The success of past and current sustainable development initiatives in the Basin bodes well for riparian countries as they rise to meet the climate challenge as most, if not all, such interventions support attempts to stem the unrelenting impact of climate change.

## Highlights...

Coping with climate change – Harnessing floodwater in the lower Shire valley	3
Basin states incorporate gender concerns in energy solutions	5
CITES recognises elephant conservation efforts in the Basin	6



# Coping with climate change – Harnessing floodwater in the lower Shire valley

by Hastings Chikoko

**A**s the climate change phenomenon slowly sets in, Kefasi Banda (not real name) of Dzimphutsi in the lower Shire valley does not understand the increasingly contradicting realities in his village. During the rain season the area receives lots of water through the frequent flash floods from the nearby Mkuzi stream. Because of the flatness of the area, the floodwater spreads into villages and gardens damaging crops and property. Banda always flees the sea of “problem waters” for safer ground hoping to use the floodwater when it recedes. However, upon his return during the dry season, he finds Dzimphutsi with very little water and he has to cope with high extremes of drought.

The Dzimphutsi case is one among many examples of water scarcity amidst plenty, and is perhaps a sobering glimpse into future climate change impacts in the Zambezi basin.

Several areas in the basin have experienced repeated flooding in the recent past but despite the potential of floodwater to bolster agricultural production and improve food security little has been done to harness these “problem waters.”

The majority of farmers in the basin rely solely on rain-fed agriculture, a potentially disastrous situation given that rainfall patterns have become highly unpredictable in the last few years.

For instance, the shift in the onset of the rain season and long dry spells that were experienced during the 2004/2005 rain season resulted in a food deficit in Zambia as production fell from 1.2 million metric tonnes in 2004 to 866,000 tonnes in 2005.

During the same 2004/2005 rain season, Malawi saw rains failing during the critical period from late January to end of February when the maize crop was pollinating and forming cobs leading to a fall in maize production from 1.7 million tonnes in 2004 to 1.3 million tonnes in 2005.

This was only 38 percent of the 3.4 million tonnes of maize required to feed Malawi's population of 11.9 million people.

Zimbabwe recorded a deficit of 1.3 million tonnes after registering total staple cereal production of 618,000 tonnes for the 2004/2005 season.

According to the Intergovernmental Panel on Climate Change (IPCC) agricultural production in many African countries and regions is projected to be severely compromised by climate variability and change.

The IPCC warns that in some countries, yields from rain-fed agriculture could be reduced by up to 50 percent by 2020.

Meanwhile, the World Water Council has predicted that “by 2025, half the world's population will be living in areas that are at risk from storms and other weather extremes,” and has called for countries to develop coping strategies to mitigate the impacts of floods and other climate change related problems.

In a timely move the Government of Malawi and the Southern African Development Community (SADC) Regional Water Sector Programme have signed an agreement towards harnessing floodwater to improve people's livelihood in the Dzimphutsi area.

The agreement aims to facilitate activities such as irrigation, fish farming, livestock production and flood control.

The initiative will, through the Ministry of Irrigation and Water Development (MIWD), carry out a feasibility study on the use of floodwater for dry-land agricultural production and increased food security.

Through support from the Danish International Development Agency (DANIDA), the SADC Water Division has initiated five projects to demonstrate that water – including “problem water” – can be managed and developed in a manner that maximises people's economic and social welfare without compromising the environment.

Four of these demonstration projects are in the Zambezi basin with one each in Malawi, Mozambique, Namibia and Zambia.

“The Dzimphutsi project -, which is benefiting a population of approximately 6,000 people -, primarily focuses on improving people's livelihoods through the integrated use of floodwater for crop production, animal husbandry, domestic use and environmental protection,” says Sidney Mainala, the Director of Water Resources in the MIWD.

According to Mainala, the project recognises that Dzimphutsi is ideal for farming due to the presence of alluvial soils of the Shire valley.

The area has a diverse agricultural base which includes livestock and such crops as rain-fed maize, groundnuts, fruits and irrigated vegetables.

Some communities had established fish ponds but they had to discontinue due to a lack of reliable water supply.

Developments envisaged for Dzimphutsi include a small-scale dam for harvesting floodwater, an irrigation system, fish ponds, animal watering systems, domestic water supply; reforestation programmes managed by communities and an active management structure at local level.

“But these will be confirmed during the feasibility phase,” emphasised Mainala.

SADC/DANIDA Regional Advisor, Ole Houmøller pointed out that dam projects are usually huge and demand a lot of resources.

“While large dams are useful, this project seeks to challenge developing countries and demonstrate that using appropriate water management approaches, even small dams can go a long way in uplifting people's well-being,” he said. r

## Inter-Agency Field Library for Disaster Reduction reaches Southern Africa

**I**n an effort to enhance public awareness and wider access to information on hazards, vulnerability and risks, the United Nations International Strategy for Disaster Reduction (UN/ISDR) is setting up “Disaster Reduction Libraries” within recognised regional institutions.

The Southern African Research and Documentation Centre (SARDC) is one such institution that has benefited from The Inter-agency Field Library for Disaster Reduction.

This project targets hazard-prone countries of Asia, Africa, the Pacific, Latin America and the Caribbean.

Southern Africa has become prone to disasters particularly floods and droughts, and this collection of 100 titles on disaster reduction and management will assist in empowering the target audience of policy makers, researchers, local leaders and communities.

SARDC's Virtual Library for Southern Africa will advance the project's objective - by providing bibliographic access to the collection in a searchable format.

The database is available through the Virtual Library for Southern Africa at the SARDC website: [www.sardc.net](http://www.sardc.net) Knowledge for Development.

Also available online is the Disaster Management Directory for Southern Africa produced by SARDC with support from the WorldBank ProVention Consortium.

SARDC offers free access to information that is useful to governments and policy makers, non-governmental organisations, the private sector, regional and international organisations, development agencies, students, parliaments and the media. r



# Zambezi River Authority champions development in the Zambezi valley

by Leonissah Munjoma

The Zambezi River Authority (ZARA) is committing almost US\$10,000 a month towards the setting up of irrigation schemes in the Zambezi valley as part of the Authority's contribution to the development of the area.

The Authority is set to provide pumps, building materials and electric fencing to enable the schemes to draw water from the Zambezi River and Lake Kariba for crop and livestock production.

Among other benefits, the projects will increase the communities' resilience to climate-induced food shortages which have become common in recent seasons.

Work has already started on some of the seven irrigation schemes in Zambia and Zimbabwe with the first two to be handed over before the end of the year 2007.

To ensure sustainability, the Authority will employ a project coordinator who will oversee the operations of the irrigation schemes and capacity building.

"The project coordinator will be dedicated to the irrigation schemes and will train the members and monitor them to ensure sustainability."

"The coordinator will also play the role of facilitating linkages and learning from each other among the schemes. This person will also assist the members with marketing their produce," said Mike Tumbare, ZARA Chief Executive.

In 1997 ZARA facilitated the establishment of the Zambezi Valley Development Fund (ZVDF) with the aim of giving back to communities on the banks of the Zambezi River in Zambia and Zimbabwe who were displaced by the construction of Kariba Dam in the late 1950s.

The dam, from which Zambia and Zimbabwe derive major economic benefits such as electricity supplies, tourism inflows and fisheries, displaced 57,000 people when it was built between 1955 and 1959.

Many of those who were displaced still do not have access to electricity or running water up to today. They are also unable to produce enough food as they were resettled on less fertile soils.

The affected districts are Kalomo, Gwembe, Sinazongwe and Siavonga in Zambia and Binga, Hurungwe and Nyaminyami in Zimbabwe.

These districts are set to benefit from small-scale irrigation schemes which are at various stages of development.

These irrigation schemes will reduce the communities' dependence on rain-fed agriculture which in recent seasons has become less productive due to unreliable rains and increased climate variability.

The irrigation schemes include Lusitu in Siavonga, Nkandabwe in Sinazongwe, and Nkolongozya in Gwembe, all in Zambia, while in Zimbabwe there is Gatche Gatche in Nyaminyami, Mlimbizi in Binga and Chitenge in Hurungwe.

Meanwhile ZARA has built a US\$15,200 basic school at Kasaya in Kazungula district in Zambia as part of a strategy to address the effects of floods.

Following the 2006 floods that left hundreds of villagers homeless in the area, ZARA carried out an assessment and concluded that the villages were built on low ground. The school has been built on high ground in an area selected by the beneficiaries.

"This is intended to encourage people to move to higher ground. The hope is that people will move nearer the school so that children will not have a long distance to travel. That way, they will also be moving away from the flood areas," Tumbare said. r

## Action on climate change to advance sustainable development in the Zambezi Basin

continued from page 1

Rainfall is the primary source of freshwater in the Basin and most rural communities, who make up the majority, also depend directly on water in rivers, wetlands and lakes for their domestic water supply and income-generating activities.

The report warns that reduced flow in the Zambezi would have serious implications on power generation along the river.

About 75 percent of the total hydropower installed capacity in the Zambezi Basin is on the river itself.

A study of the potential impact of climate change on the proposed Batoka Gorge hydro project by experts from the University of Edinburgh found that a reduction in flow levels over the Victoria Falls of 35 percent would cut annual power production by 21 percent and dry season production by 32 percent.

Diversifying from over dependence on hydropower would require emphasis on small-scale and decentralised supply.

The United Nations Development Programme (UNDP) emphasises a "focus on energy options that are easy to implement, involving local capacity and low operational costs."

These technologies, which include biomass, improved cooking stoves and mini-hydro stations, among others, are more sustainable and easy to deploy widely across the basin.

Besides hydropower generation and irrigation, less reliable water resources will threaten wetlands biodiversity and wildlife among many other economic, social and environmental concerns.

Reduced flow over the Victoria Falls would affect plant and wildlife, but also diminish the visual appeal of the world heritage site impacting negatively on the site's vibrant tourism activities.

While dealing with the adverse economic, social and environment effects of changing weather patterns will require concerted long-term

efforts by Basin States, experts agree that there is need to focus more clearly on the multi-sectoral benefits of early action.

A report, "Confronting Climate Change: Avoiding the Unmanageable and managing the unavoidable", by the Scientific Expert Group on Climate Change and Sustainable Development says the solutions to climate change bring many "win-win" solutions for addressing sustainable development concerns.

Major measures to mitigate climate change include reversing deforestation, reducing greenhouse gas emissions and expanding the use of bio-fuels in the transport sector.

These measures bring benefits, not only in terms of reducing climate change risks, but also in reducing other environmental problems and addressing economic goals, including reduced dependence on imported oil products.

Addressing the UN Commission on Sustainable Development held early May in New York, UN Secretary-General, Ban Ki-moon stressed that turning to renewable energy has many economic, social and environmental benefits.

"We must do more to use and develop renewable energy sources. Greater energy efficiency is also vital. So are cleaner energy technologies, including advanced fossil fuel and renewable energy technologies, which can create jobs, boost industrial development, reduce air pollution and help to mitigate greenhouse gas emissions," said Ban.

Adopting strategies that move the Basin towards sustainable development goals would lead to improvements in water management and poverty reduction as well as reduced vulnerability to climate change in all sectors.

Measures such as small-scale rainwater harvesting technologies, affordable drip irrigation and treadle pumps would help improve crop productivity at a lower cost than building large dams. r



## Basin states incorporate gender concerns in energy solutions

by Eglina Tauya

Zambezi Basin states have placed gender-related concerns at the top of their agenda as they move towards sustainable solutions to energy generation in the region.

Six Basin states, Botswana, Malawi, Namibia, Tanzania, Zambia and Zimbabwe, recently established national gender and energy networks with support from ENERGIA, an international energy and gender network.

Through the network the basin states are promoting the use of mini-hydropower, solar cookers and lanterns, improved wood efficiency stoves and the use of biogas and gel stoves among the rural population, the majority of whom are women.

Improved efficiency stoves, which directly benefit women, girls and children, through reduced wood fuel use and therefore reduced time and distance for firewood collection, are now being widely disseminated in the basin.

In Namibia, women dominate in training and operations of the stove production centre in the Biomass Energy Savings Project (NAMBESP).

Both men and women make suggestions for improvements in the stoves.

For instance while men were interested in having a grill on top of the stove for roasting meat, women's interests were in making the stove more portable and more stable for stirring the staple millet porridge.

The Programme for Biomass Energy Conservation in Southern Africa (ProBec) also reports that women registered a preference for larger stove sizes for brewing beer, an important income-generating activity.

The stoves save households from daily exposure to noxious firewood smoke, which claims nearly a million children's lives in the



Alternative energy sources such as sun and wind can provide light for evening activities.

world each year as reported at the 15th session of the Commission on Sustainable Development (CSD 15) held in May 2007.

Meanwhile, organisations such as Practical Action Southern Africa are supporting rural-based, mini-hydropower schemes in Mozambique, Zambia and Zimbabwe.

Examples include the Rusitu and the Nyamarimbira mini-hydropower schemes in the Eastern Highlands of Zimbabwe, which were constructed with labour provided by local people.

The rural mini-hydropower system uses water from a river, thereby avoiding damage to the environment and social effects that large hydro-electric schemes cause.

Besides providing power for practical needs the mini-hydro schemes are being used for income-generating activities such as grain milling.

Other rural-based energy initiatives being implemented include the use of solar power for cooking, heating and lighting.

Respondents to a survey carried out by Practical Action say that through the use of solar technology their working day is more productive and women are able to do some of their chores at night.

"Since the solar panel came I have been getting four hours of lighting using the solar lantern. I have also managed to put light where I operate the poultry business," says a female respondent from Tanzania.

The Botswana government is promoting solar photovoltaic systems for rural electrification in areas where grid connection is not deemed to be cost effective. The programme aims to reach out to at least 88 villages by end of 2007.

Mozambique's Energy Fund (FUNAE) plans to install 2,500 solar powered systems by the end of June 2007 in Inhambane and Sofala provinces.

Meanwhile, the Namibian government has launched a five-year Renewable Energies Programme, which aims to provide solar water heating systems and panels for use by more than 27,000 rural households not yet connected to the national power grid.

The United Republic of Tanzania has established a Rural Energy Fund (REF) to be used to finance rural electricity projects.

The Ministry of Energy and Power Development in Zimbabwe is also spearheading a project to promote use of solar energy and biogas in resettled farming areas.

So far, 400 biogas digesters have been set up for demonstration purposes throughout Zimbabwe while thousands of solar panels have been distributed.

Efforts to raise gender concerns in the energy sector have gained support from the recent launch of the book, *Where Energy Is Women's Business*, during the CSD 15 forum.

The book, compiled by ENERGIA, expresses the view that gender-related concerns associated with energy sourcing and consumption should form the basis for energy-related interventions.

The move comes after the realisation that large-scale energy initiatives have little benefits to the marginalised, the majority of whom are women in the rural areas.

The view also gains support from the implementation of the Kyoto Protocol's Clean Development Mechanism (CDM) where women in rural areas are being targeted for a range of low emission technologies related to household energy, water pumping, food processing and agriculture.

International cooperating partners expressed their support for mainstreaming gender in the energy initiatives during CSD 15. r



# CITES recognises elephant conservation efforts in the Basin

by Admire Ndhlovu

Elephant range countries in the Zambezi Basin will continue to trade in elephant products following recognition of their conservation efforts by other African range states at a recent CITES meeting.

The 14<sup>th</sup> Conference of Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, commonly known as CITES, held at The Hague early June, ended with a decision to allow Botswana, Namibia and Zimbabwe further one-off sales of their ivory stockpiles.

The decision which followed intense negotiations among African range states paved the way for Botswana to dispose of 70,000kg of their ivory stocks while Namibia is allowed to sell 50,000 kg and Zimbabwe 15,000 kg of their raw ivory stocks registered by 31 January 2007.

Outside the Basin, South Africa was allowed a one-off sale of 40,000 kg of its ivory stocks.

The agreement also stipulates that once this sale has been completed no new proposals for further sales from these four countries are to be considered by CITES during a "resting period" of nine years.

The long-running global debate over the African elephant focused on the benefits that income from ivory sales may bring to conservation and to local communities living side by side with elephants. The debate also focused on concerns that such ivory sales may encourage poaching.

Going to the conference Zambezi River Basin states faced stiff opposition from some other African range states on their proposal to be allowed controlled trade in ivory and other elephant products.

The opposition led by Kenya and Mali called for a 20 year ban on all forms of trade in elephant products. The two countries were arguing that despite the successful conservation efforts by the Basin states any trade in ivory would boost elephant poaching.

However, following discussions on the sidelines of the conference a compromise deal was reached.

"This African solution to an African problem marks a great step forward for wildlife conservation," said CITES Secretary-General Willem Wijnstekers.

"It is good news for the elephant, good news for the people who live alongside them and good news for regional cooperation in Africa," said Wijnstekers.

In 1989 CITES banned trade of ivory as the international demand for ivory promoted poaching and threatened the survival of some elephant populations.

In the Zambezi basin, however, sound management has seen an increase in the elephant populations.

Most countries in the basin now have elephant populations higher than the range can support.

According to the African Elephant Status Report 2007, produced by the African Elephant Specialist Group of the IUCN Species Survival Commission, southern Africa has the largest number of elephants in Africa at nearly 321,000.

This is double that for eastern Africa which boasts about 166,500 elephants, mostly in Tanzania.

Zimbabwe has more than 100,000 elephants yet its carrying capacity is about 40,000.

Botswana has an elephant population of 106,000 which is more than double the country's carrying capacity of 50,000.



Elephants are part of the spectacular large mammal species that grace the Zambezi basin

Tanzania has greater carrying capacity but also has a high population of elephants, which has increased from 55,000 in 1989 to 141,000 in 2006.

It is estimated that by the year 2020, there will be 400,000 elephants in southern Africa alone, a potentially calamitous situation given the inability of the natural environment to support existing numbers.

Of particular concern is the combined effect of large elephant populations, uncontrolled bush fires and climate change impacts on biodiversity in the Zambezi Basin.

The major effects of the increase in elephant population include soil erosion, vegetation damage and the loss of biodiversity.

The loss of tree cover causes soil erosion, resulting in siltation of water points.

With concerns that climate change will cause unreliable rainfall in the basin this will put more pressure on existing freshwater sources as competition for water increases especially between the larger mammals as well as between communities and wildlife.  $\pi$

## Zambezi Has Its People

The Kalahari Conservation Society plans to implement the project, Zambezi Has Its People (ZHIP), along the lines of the Every River Has Its People project.

The project is intended to facilitate broader community participation and promote sustainable management of natural resources in the Zambezi River Basin for the benefit of basin residents and states.

The Every River Has Its People project aims to promote the sustainable management of the natural resources of the Okavango River Basin shared by Angola, Botswana and Namibia, for the benefit of basin residents and states, through promoting and facilitating the effective participation of basin stakeholders in natural resource decision-making and management.

A workshop aimed to share information regarding preparatory work carried out so far was held recently in Kasane, Botswana.

The planned project is a response to issues arising from stakeholder conferences under the Zambezi Action Plan Project 6 Phase II (ZACPRO 6.2) Project.

Increased stakeholder participation in the development and management of the water resources of the Zambezi river basin at all levels is one of ZACPRO 6.2's objectives.

The planning phase of the proposed project was supported by the Swedish International Development Cooperation Agency (Sida).  $\pi$



## Zimbabwe chairs the UN Commission on Sustainable Development

Zimbabwe's Minister of Environment and Tourism, Francis Nhema, was elected chairperson of the 16th session of the UN Commission on Sustainable Development (CSD) at the commission's 15th Ordinary Session at the UN headquarters in New York in May.

The 15th session of the Commission ended in a stalemate with no agreed outcome document and exposed sharp differences among countries on the nature, scope and general direction of the sustainable development agenda, particularly on issues to do with energy and climate change.

Thematic issues that the commission will focus on during Zimbabwe's tenure will include agriculture, rural development, land, drought, desertification and Africa.

These are important issues for countries in the Zambezi Basin, most of whose



Francis D. Nhema



Francis D. Nhema (second from left), Minister of Environment and Tourism of Zimbabwe speaks to correspondents following his election as chairman of the 16th session of the Commission on Sustainable Development (CSD), at UN Headquarters in New York.

economies depend on the exploitation of natural resources.

Addressing the Commission, the UN Secretary General, Ban Ki-moon, urged delegates to find solutions for provision of energy to the "many people around the

world who lack access to modern energy services."

Ban called for an integrated and balanced response to climate change in light of the role played by human activity in global warming.

He noted that in trying to ensure they are energy self-sufficient, countries must not overlook the impact of their actions on air pollution and climate change.

The Commission on Sustainable Development was established by the UN General Assembly in December 1992 to ensure effective follow-up of commitments contained in Agenda 21, a programme of action on sustainable development adopted in June of that year at the UN Conference on Environment and Development. r



16<sup>th</sup> session of UN CSD to focus on rural development.

## Training Workshop for ZACPRO 6.2 Seconded Staff

A training workshop for technical staff from Zambezi River Basin states was held recently in Zambia, hosted by the Zambezi Action Plan Project 6 Phase II (ZACPRO 6.2) as part of the strategy formulation process for Integrated Water Resources Management in the basin.

The workshop brought together 16 water professionals seconded to ZACPRO 6.2 from Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe. The participants will be part of a group that will inform the IWRM strategy formulation process.

The overall objective of the workshop was to build confidence and mutual trust amongst the riparian states as it is recognised within the ZACPRO 6.2 Project that doubts about facts can frustrate collaboration in the management of shared water resources in the basin.

It is therefore critical to involve the seconded staff in the IWRM strategy formu-

lation process to legitimise the data collected and get a buy-in from riparian countries. The specific objectives of the training workshop were to:

- Provide practical training on the Zambezi Water Information System (ZAMWIS);
- Discuss "main issues and hotspots" from the Basin as input into the Rapid Assessment Study; and
- Discuss practical steps, in particular the national focal persons for ZAMWIS and facilitation support to the National Steering Committees (NSCs).

The objective of the IWRM Strategy is to define medium and long-term measures in support of integrated water resources management and protection against floods, droughts, pollution and environmental degradation in the river basin.

This is to be supported by the development of a shared water information system for the basin, a rapid assessment report high-



IWRM training for strategy formulation

lighting current status of water resources availability and demand, and a process of consultation with stakeholders at national and regional levels.

It is hoped stakeholder consultation will help to build support and confidence, as well as strengthen the capacity of those directly involved in the preparation of the IWRM strategy. r



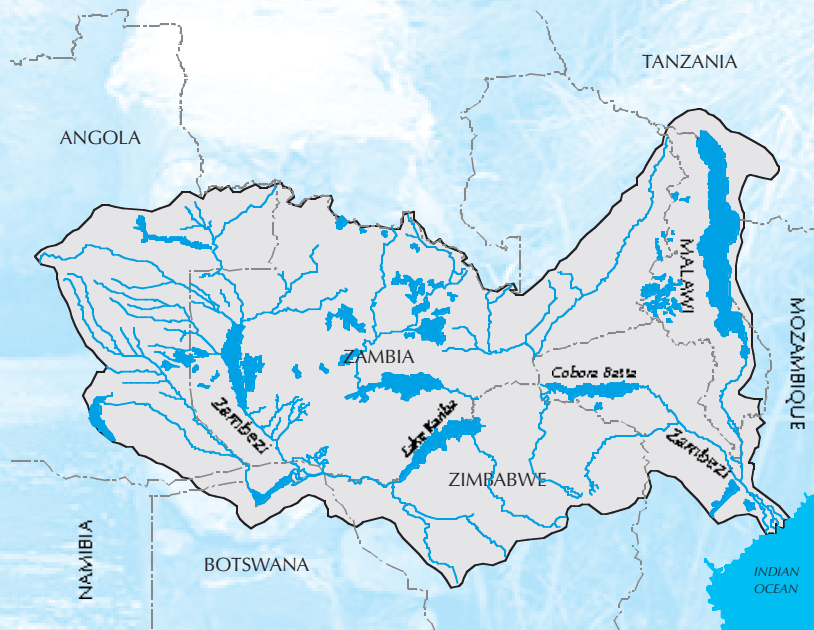
# THE ZAMBEZI AT A GLANCE

## The Zambezi River

- 1 rises on the Central African Plateau in the Kalene Hills in northwestern Zambia and flows through eight countries to its delta in Mozambique and the Indian Ocean.
- 1 drains an area of almost 1.4 million sq km, stretching across Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe.
- 1 supports the Victoria Falls, popularly identified as one of the seven natural wonders of the world, as well as Kariba and Cahora Bassa hydroelectric dams and their lakes.

## The Zambezi Basin

- F is the most shared in southern Africa and third largest in Africa after the Congo and the Nile.
- F covers about 25 percent of the total geographic area of the eight riparian countries estimated at 5.6 million sq km.
- F is home to almost 40 million of SADC's estimated population of more than 200 million people.
- F hosts urban areas such as Luena in Angola, Kasane in Botswana, Tete in Mozambique, Katima Mulilo in Namibia and Mbeya in Tanzania, almost all urban centres in Zambia including the capital city of Lusaka, all urban centres in Malawi and most in Zimbabwe, including Harare.
- F contains Lake Malawi/Nyasa/Niassa covering 28,000 kq km, Africa's third largest freshwater lake after Lakes Victoria and Tanganyika and third deepest in the world.



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