

Outcome of the SADC Multi-Stakeholder Water Dialogue on

Rising above the climate change threat towards Security



Southern Africa is widely acknowledged as being acutely vulnerable to the impacts of climate change and therefore needs to ensure that adaptation measures are put in place. The Water sector is the key sector for *adaptation* and an integrated approach (IWRM) that promotes cross-sectoral efficiency and cooperation at all levels is critical. The industrialised world is responding to climate change through attempts to reduce greenhouse gas emissions and through significant investments in adaptation funds intended to benefit the most vulnerable regions. The SADC region should have a strong and informed voice in the global climate change adaptation processes and developments, particularly in how funding mechanisms develop. Scale is achieved at a regional rather than national negotiating level: it will be much harder for the international community to ignore a voice representing the needs of 240 million of the world's most vulnerable people, as opposed to say 20 million from one country. SADC therefore needs to become the voice of the region thus enabling access to an equitable and significant portion of these funds. Improved water infrastructure is an example of a bankable climate change adaptation measure that is central to strengthening the region's resilience to climate change and to ensuring the economic empowerment it requires to cope with the additional challenges presented by climate change. The region must make decisions based on accurate information and protect future generations. Funding obtained on the basis of useful information should be used to develop an adaptive system that strengthens resilience and creates a buffer to climate change.

The SADC Multi-stakeholder Water Dialogue (2008 Dialogue) is an annual event organised by the SADC Water Division within the framework of the Danida funded Regional Water Sector Support Program and brings together water sector practitioners to dialogue with water using and water influencing sectors. The theme of the 2008 Dialogue was “*Watering development in SADC: Rising above the climate change threat towards security*”.

The main objective of the 2008 Dialogue was:

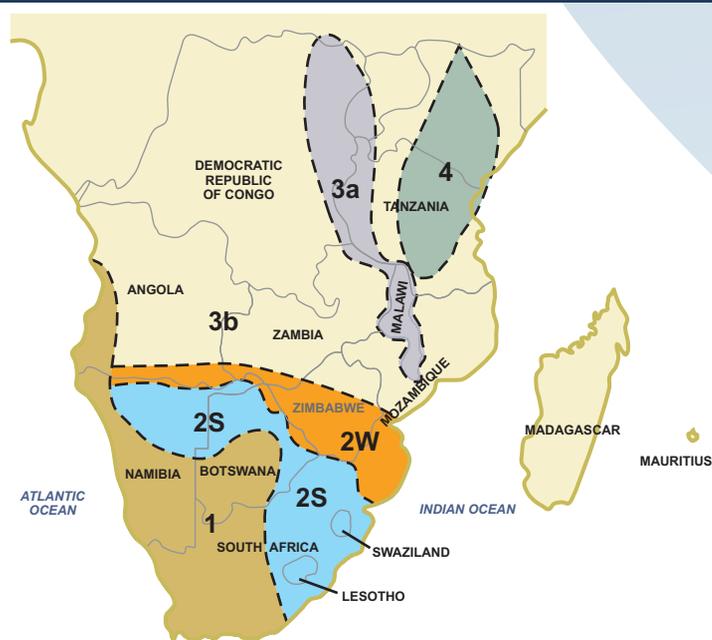
To promote sharing of IWRM strategies, experiences and best practices in climate change adaptation that address local, national and regional socio-economic development and poverty reduction (and the attainment of the MDGs)

It is evident that climate change and variability is no longer the story about the future but it is the story of today: There is little doubt that the SADC region will face some degree of climate change irrespective of global or local efforts to reduce greenhouse gas emissions, meaning that we are already in the climate change cycle.

The water sector is the key sector for adaptation and the energy sector for mitigation, although adaptation and mitigation cannot be separated. In this regard, it was therefore important to convene all sectors using and influencing water resources (especially energy, agriculture and health) in the SADC region at the 2008 Dialogue, and improve the understanding of what adaptation entails, and how stakeholders can collectively respond to the climate change threats.

As a technical introduction to inform discussions at the SADC Dialogue on potential climate change impacts in southern Africa, research findings of the Regional Climate Change Programme (funded by DFID and developed by OneWorld Sustainable Investments), were presented among other presentations. When determining the most vulnerable (“hot spot”) areas in relation to climate change impacts, it can be useful to consider the SADC region on a sub regional basis. The Regional Climate Change Programme (RCCP) has conceptualised the map in figure 1 below and continues to refine this process. The sub regions reflected in figure 1 are determined using a range of parameters: current climatic conditions, climate projections, socio-economic conditions, natural resource dependencies and institutional strengths and weaknesses.

Figure 1: RCCP sub-regional map



Region 1:

400mm; climate change: Significant warming reduction in winter rainfall. Heavy ground water dependence; sparsely populated

Region 2:

400-1000mm; climate change: moderate temperature increase; winter drying; small decrease in rain, large decrease in run-off - impact on subsistence and dryland agriculture. 2W: heavy dependence on subsistence agriculture; civil wars & economic turmoil-weak institutions; limited access to healthcare; malaria

Region 3a&b:

High rainfall; climate change increase in extremes. Cyclones; sea level rise (Moz); moderate temperature increase; Decrease winter rainfall, increase summer (moderate); malaria endemic; population pressure – refugees

Region 4: lower, bi-modal rainfall; links with East Africa & Malawi; increase summer rainfall, moderate temperature increase

S: stronger institutional base

W: weaker institutional base

a: population pressure

b: weak economies and poor infrastructure

Note: The sub-regional map is a work in progress. The analysis to date has been on mainland SADC only; therefore the key does not reflect Madagascar and Mauritius.

SADC stakeholders acknowledged the following climate change impacts, issues, challenges and opportunities

- ▶ Climate change has now become an additional threat (population and economic growth are also some of the drivers) putting pressure on already stressed hydrological systems and water resources, including water quantity and quality. Climate change is anticipated to have far reaching effects on the sustainable development of developing countries including their ability to attain the United Nations Millennium Development Goals, since water is central to achieving many of the MDGs, including food security, health and energy as some examples. Africa and SADC in particular, is being significantly affected by climate change given the extent of the change and the vulnerability of the region.
- ▶ The economies of countries in the SADC region are largely dependent on climate-sensitive sectors such as agriculture, hydro-power dependent industry, fisheries, forestry, wildlife and tourism all of which heavily depend on water resources. The poor in the region depend extensively on natural resource utilisation and dry-land agriculture as key livelihood strategies, making them particularly vulnerable to climate change.
- ▶ The region has relatively poor disaster management mechanisms and strategies, increasing the risk exposure of the region's already vulnerable economies, resources and sectors to climate change.
- ▶ The climate change threat has huge impacts on water and this in turn has an adverse effect in terms of food security, energy security, water security and health. Key impacts are drying (droughts) – both across and within seasons - flooding and rising sea levels. These impacts manifest in different ways in water quality and quantity deterioration in the region.
- ▶ In terms of energy security - change in quantities in water flows due to low and high rainfall have an impact on hydropower generation. Investment decisions to improve existing and/or develop new hydropower systems will need to be 'climate proofed' if energy security is to be a continuing strategic imperative for the region. Water availability affects the energy sector in other ways too, such as water required for cooling in generation of energy and to grow stockfeed for biofuels. The emerging focus on biofuels as alternatives to conventional hydro-carbon energy sources is driving expansion of irrigated agriculture in the SADC region introducing new challenges in terms of water availability (quality and quantity), food security and biodiversity.
- ▶ In terms of food security - Variations in water availability in terms of quality and quantity have a significant impact on the farming methods used at different scales. For example, climate change impacts could be in the form of prolonged

droughts, which leads to a reduction in yields on rain-fed lands. In the SADC region about 70% of the region's economies and/or livelihoods are dependent on agriculture and only 2% of this production is irrigated, meaning that most of the region's agricultural production is rain fed. This dependency on dry-land agriculture undermines long-term food security. Significant potential exists in developing irrigation in the region to mitigate this risk.

- ▶ The health sector is also climate sensitive, considering the prevalence of water-borne diseases and malaria in the region. Climate events such as droughts have serious health impacts. When fresh water runs out, people use contaminated sources resulting in diarrhoeal diseases. Many people suffer from malnutrition during droughts, and this often results in diseases and lowered immune responses increasing infection rates. During the 2000 floods in Mozambique and Zimbabwe cases of cholera were recorded showing a clear impact of high waters on health security.

- ▶ SADC region should not focus only on the challenges of the effects of climate change, but should view the opportunities that are available due to climate change and its effects. For example, securing funding for development of water resources remains a challenge today. However, if improvements to water development infrastructure in the region and water storage facilities are demonstrable climate adaptation responses, then the increasing availability of international adaptation funds become an obvious financing mechanism for the region's water infrastructure development.

- ▶ To support climate change adaptation in the SADC region, the real challenge lies in the quality of the institutions, sound governance and excellent leadership, backed up with management and technical capability.

SADC stakeholders recommended the following urgent responses

- ▶ Climate change adaptation is a multi dimensional challenge. Awareness and conviction that climate change is a reality is vital and needed at all levels. In relation to scale and actors, climate change adaptation is a multi-stakeholder challenge that needs to incorporate efforts from public, private and civil society – across sectors and boundaries. With scale, there is need to involve all stakeholders from community, national, regional and global levels.

- ▶ Bearing in mind that the impacts of hydrologic changes due to the climate change threat are felt in other sectors, it is important to mainstream water into the political economy, dealing with cross-sectional management issues and focusing on demand management.

- ▶ Integrated Water Resources Management promotes cross-sectoral efficiency and cooperation at all levels on sustainable water resources development and management, including sector specific interventions. In relation to climate change adaptation, an IWRM approach should be followed. The SADC region should position itself and map out linkages of climate change with water resources and the impact on key sectors such as energy, agriculture and health.

- ▶ At national level, countries need to acknowledge the existence of climate change and review their legislation and policies and find ways to incorporate climate change and variability issues. Countries should engage in advanced and cross-sectoral planning instead of reacting to effects brought about by climate change. The planning processes should inform financial policies as well as all tiers of government. In this regard, current and future national IWRM planning processes and plans are potential vehicles to address this.

- ▶ The region needs to develop its capacities to effectively participate in global climate negotiations (through for example the Kyoto Protocol and related COP processes) by strengthening its regional voice. It is essential that the southern African region, through structures such as SADC, develops and promotes a common vision, position and a clear voice regarding climate adaptation. This would also enable better access to available funding for adaptation measures.

- ▶ The first step towards this would be to facilitate a dialogue preparing for the COP meeting in Copenhagen as well as the post - Kyoto talks as a region and to engage in global discussions not as individual states but as a region. This would present opportunity for the region to negotiate as a collective, in particular with respect to 'adaptation strategies' and how funding is disseminated. The region also needs to be better positioned to take advantage of funding and technology transfer opportunities through the CDM so that the region may enjoy improved development through diversification of energy, technology and related economies. The SADC region should also work through Africa wide initiatives to ensure that an Africa wide voice is heard on the global platform.

- ▶ The region noted that Africa has inadequate water infrastructure to cope with the temporal variation in rainfall and in particular for extreme water related events like droughts and floods. It is important therefore to consider hard and soft solutions in order to improve resilience and adapt to climate change.

- ▶ In developing infrastructure to improve resilience (an example of a hard solution), it is also important to ensure that a balanced approach is used in the development of water resources. The approach should balance social, environmental and economic issues. It is also necessary to recognise that water resource infrastructure extends beyond large dams (which should be multi-purpose) to include smaller systems. The concept of appropriate infrastructure is critical.

- ▶ On the other hand soft solutions are equally important and these include measures such as water demand management, pricing and reuse, efficiency and watershed management.

- ▶ Understanding better the water-energy nexus: To ensure resource security, it is important to ensure water security and energy security and these should therefore be tackled in an integrated manner. Energy sector developments must consider water security issues as well as water impacts on other sectors such as agriculture and health.

- ▶ To ensure food security: technologies and interventions for water management (including a reassessment of water infrastructure and irrigation) need to be developed and information on these widely disseminated. At national level there is a need to enhance collaboration efforts between climate scientists, water managers and agriculture sector when formulating policies.

- ▶ For better health and equity in the region - storage facilities for drought management and flood mitigation should be in place to minimise adverse health impacts caused by extreme weather events. An integrated approach is needed to ensure that infrastructure is developed in a balanced manner. Differential adaptation is critical and issues of gender should be taken into consideration when targeting adaptive measures to the most vulnerable groups. These measures should include information dissemination, awareness creation and capacity building.

- ▶ Gender mainstreaming and recognising the particular vulnerabilities of women (for example, drought often result in women having to go much further afield in search of firewood and water) should be part and parcel of any climate change policy formulation.

- ▶ Understanding climate change impacts relies heavily on climate science, accurate and reliable data and information. Regarding data and scale, to deal with uncertainty aspects, the value of historical records in hydrological data must be considered and assessments and atmospheric models downscaled from global to local circumstances. The SADC region needs reliable, localised data, information and models to determine how best to deal with the impacts of climate change.

- ▶ Responding to climate change is however about economic empowerment, strengthened institutional arrangements and strengthening resilience. As seen in the sub-regional map in figure 1, sub-regions with weaker institutions are more vulnerable to shocks, including climate change and variability.

- ▶ Capacity development should go beyond the people in the institution to strengthening the institutional capacity and building up systems for planning and management in the context of adaptation to climate change. Additional capacity on accessing and deploying development finance for IWRM should be developed - there is a need for water management institutions to talk the language of financiers. Economic and pricing instruments are important elements of IWRM and further development in this regard is required in the region (recognising that much work is currently underway across much of the region in incorporating these instruments into policies and strategies).
- ▶ Communities in the SADC region need to understand the importance that water has on the economic development of their individual countries and of the region as a whole. There is a need to strengthen communication channels between end-users and all tiers of governance; improved science-government dialogue is a critical success factor.
- ▶ In addition the region should invest in developing water resources accounts and valuation accounts in order to guide mitigation and adaptation decisions.
- ▶ There is need for the water sector and its influencing sectors to contribute significantly to the ongoing development of National Adaptation Programmes of Action in applicable countries and 2nd National Communications to the UNFCCC in others.

Immediate way forward

The Southern African region has been identified as a region that will be hugely impacted by climate change in the IPCC report. It is therefore important for the region to ensure that it plans long term for adaptation and influences global processes. As a matter of urgency, the SADC region needs to actively engage in the climate change international processes (like the COP meetings in Poland 2008 and Copenhagen 2009) in order to ensure adaptation issues are brought to the forefront. The region should also play a critical role in determining how the adaptation funds should be used by ensuring that the region has identified and prioritised strategies to curb the climate change threat.

The SADC region should also participate in global water meetings to raise issues of adaptation to climate change starting off with the World Water Week (in Stockholm) 2008 and carrying forward the dialogue to the 5th World Water Forum in Istanbul in 2009.

The SADC region is a potential example for other regions, not least in Africa, on how to be pro-active and address the adaptation challenge. Hence the region has the potential to act as a "champion" for other vulnerable regions in the developing world.

List of abbreviations

CDM:	Clean Development Mechanism
COP:	Conference of the Parties
DFID:	Department for International Development
IPCC:	Intergovernmental Panel on Climate Change
IWRM:	Integrated Water Resources Management
MDGs:	Millennium Development Goals
RCCP:	Regional Climate Change Programme
SADC:	Southern African Development Community
UNFCCC:	United Nations Framework Convention on Climate Change



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