



CLIMATE CHANGE ADAPTATION SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC)

Adaptation Scenarios Factsheet Series, Factsheet 1 of 7

THE LONG-TERM ADAPTATION SCENARIOS FLAGSHIP RESEARCH PROGRAMME (LTAS) FOR SOUTH AFRICA

The LTAS (April 2012 – June 2014) aims to respond to the South African National Climate Change Response White Paper (2011) by undertaking climate change adaptation research and scenario planning for South Africa and the Southern African sub-region.

The **Adaptation Scenarios Factsheet Series** has been developed to communicate key messages emerging from LTAS Phase 2 (June 2013 – June 2014) to policy- and decision-makers, researchers, practitioners and civil society. The Factsheet Series complements the LTAS Phase 2 technical reports. For further details on this factsheet, see the LTAS Phase 2 full technical report entitled *Climate Change Adaptation: Perspectives for the Southern African Development Community (SADC)*.

1. Introduction

South Africa is linked to the Southern African Development Community (SADC) countries in a number of ways. These include through the trade of goods such as agricultural produce or services; through shared trans-boundary water resources; and through the migration of people. Climate change impacts and adaptation responses in the SADC countries may directly (both positively and negatively) affect South Africa and vice versa, with potential socio-economic and environmental implications. Therefore, as South Africa becomes increasingly integrated across sectors, it has a very real interest in a climate resilient SADC. This is especially the case in a drying future with respect to food and water security, and in a wetting future with respect to extreme event responses and infrastructure. SADC countries which are not climate resilient, because of differing economic development, resource availability and infrastructure capacity levels, may pose a risk to South Africa and the region. There is a resultant need to understand the current nature of how risks can be shared, for example, through trade, technology transfer and information sharing among SADC countries, and how climate change will exacerbate these risks.



Figure 1: Countries of SADC (Source: SADC-HYCOS).

2. Current climate variability and climate hazards in SADC

The climate across the SADC region is highly diverse and driven by a range of distinct climatic systems. Evidence shows that the SADC region has already experienced an increasing frequency of hot days and decreasing frequency of extremely cold days. Rainfall trends are variable but evidence points to an increased inter-annual variability to date, with extremely wet periods and more intense droughts in different countries.

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Cyclones in the eastern side of SADC have resulted in extensive flooding, causing economic losses and damage to infrastructure, crops and livelihoods. Drought in a number of SADC countries has changed the length and timing of the growing season and lead to a drop in agricultural productivity due to lower crop yields. These impacts are increasing and becoming persistent, leading to an increase in food insecurity and a rise in food prices. Energy generation has been affected at both the smallholder (fuel wood availability) and national scale (loss of hydropower potential). Additionally, climate-related diseases triggered by heat waves and floods, such malaria, malnutrition and diarrheal disease, have become more prevalent..

These current climate-driven impacts mean that people in the SADC region are already at risk, even before the anticipated adverse impacts of future climate change are felt.

3. Climate change in SADC

BOX 1: POTENTIAL PROJECTED CLIMATE CHANGES FOR THE SADC REGION

- An overall annual warming, with a greater increase in temperatures in central regions relative to coastal regions.
- An increase in the number of very hot days (> 35°C).
- A general decrease in annual rainfall over the south-western Cape of South Africa, and parts of Zimbabwe, Mozambique and Zambia.
- An increase in annual rainfall over East Africa and south-east South Africa, including large increases in rainfall for East Africa during summer.

Potential projected climate changes for the SADC region are summarised in Box 1. The predicted impact of climate change on precipitation, temperature and the increased frequency and intensity of droughts and floods are likely to negatively affect water resources and the agricultural sector. The impacts are likely to be significant for subsistence farmers. Substantial decreases in the productivity of crop-suitable land because of climate change are projected in Namibia, Botswana, South Africa and Zimbabwe, as well as in parts of Angola, Malawi, Mozambique, Zambia and Madagascar. However, there are also potentially a number of opportunities afforded by climate change, and substantial increases in crop productivity are projected for Angola, Democratic Republic of Congo, Madagascar, Tanzania and Zambia. An increase in the spread of disease is likely to affect livestock farmers throughout the region.

Trading, migration and ecological functioning are all likely to be affected by the impacts of climate change. Crop growing areas and market requirements will change, providing both risks and opportunities for the import and export of crops within SADC. Environmentally induced (as a result of crop failures) migration patterns are likely to be exacerbated, with subsequent impacts on resource allocation, settlements and health. While there are substantial uncertainties regarding vegetation projections in SADC, biomes are predicted to shift considerably under future climate. As biomes shift, ecosystem functioning may not be able to support traditional rural livelihood strategies and dependent populations.

BOX 2: EXISTING INTER-RELATED STRATEGIES IN THE SADC REGION

The individual adaptation capacity of surrounding countries within SADC is of importance to South Africa and the wider SADC region as a whole, with regard to stability in the region under an uncertain climate. All countries have been involved in the development of national statements on climate change, notably National Adaptation Plans of Action (NAPAs) and National Adaptation Plans (NAPs). However, although inter-regional opportunities may exist, these plans are not well aligned with those of neighbouring countries. The NAP process in particular has potential to be integrated across the region in a systematic manner through capacity development and knowledge sharing. This, however, is not currently happening.

At a regional level number of relevant policies and strategies exist. These include the SADC Policy Paper on Climate Change, the SADC Water Sector Climate Change Adaptation Strategy and the Regional Climate Change Programme. There are also a number of existing sector-specific strategies which support the adaptive capacity of the SADC region, yet are not necessarily built purposefully for climate change adaptation. These include those focused on shared water, migration and health, fisheries, biodiversity and regional economic integration. Regarding the latter, despite policies promoting integration, the policy environment has generally become more unfavourable to increased regional trade over the past decade.



4. Opportunities for regionally integrated adaptation

To adapt to the risks associated with the predicted impacts of climate change, an appropriate response would be for SADC to integrate. Integration requires adequate infrastructure, not only in terms of transport, but also energy to facilitate economic development in all of the SADC countries. Integration is necessary for the continued growth and development of the SADC region, regardless of climate change. However, it is especially pertinent in a drier future.

Countries need to carry out adaptation measures independently. Although integration is required regionally, SADC as an institution is incapable of implementing adaptation measures. It is only with the support of individual nations, implementing a range of changes, that the adaptive capacity of a region can be improved. However, there are risks and complexities associated with increased integration. Migration between countries which have different development profiles is more difficult to control and manage when countries are increasingly integrated, yet are not adapting to climate or economic shocks in an appropriate manner.

For the SADC region as a whole, it is important to take away disincentives for adaptation to climate change and regional integration. Increased integration should be on condition that SADC as a whole is stronger and more prepared for climate impacts. Opportunities should be catalysed so that the region may

develop beyond a point where entire economies are paralysed by drought or flood year after year. What is especially pertinent is that a resilient country, without a resilient SADC region around it, is in fact not resilient at all. To facilitate this development, capacity is required in all sectors to allow regional integration to take place.

Countries in the region differ not only economically, but politically, climatically, through capacity, infrastructure, and development too – the asymmetries in SADC are numerous. Therefore climate is not the only major consideration in the region. In some sectors, SADC is competent in the development of regional plans. However, in other sectors, the implementation of these plans has not been adequate. The challenge for SADC, therefore, is to move beyond planning and into implementation at a regional level. This is made complex due to the asymmetries already mentioned. Countries are not legally bound, or often do not have the ability to implement. Therefore, the national sectors within SADC countries should ensure adequate support for climate change to get taken into account. Alternatively, a regional hub may support capacity development in order to support implementation.

Aside from the development of capacity, the funding of initiatives and projects in SADC should be re-thought. Because of the high growth rates of a number of the SADC countries, there is an opportunity for this to occur. However, without adequate funding to implement, and without integrated planning, there runs the risk that some initiatives or infrastructure investments could be maladaptive.



5. Policy and research recommendations

A number of policies should be implemented to enhance the integration of climate change adaptation into development and ensure cross communication. These are listed below.

- **Health:** SADC should ensure that disease surveillance at the regional, national and local levels are adequate to minimise the spread of relevant diseases.
- **Agriculture and trade:** at both national and regional levels, policies and strategies should be put in place to aid the growth of the agricultural sector, and to foster regional and international trade.
- **Biodiversity and ecosystem function:** policy considerations should support a regional protection, restoration and management approach to biodiversity and ecosystem function that includes the sharing of technology or skills, joint data sharing and planning, as well as the potential establishment of new trans-frontier protected areas.
- **Migration:** appropriate policy options should be identified/developed to govern environmentally induced migration patterns, which are expected to be exacerbated by the impacts of climate change.
- **Integration:** for integration to take place under minimal risks there needs to be political stability, economic integration and regionalisation

as well as adequate equity and livelihoods. Particular policies which are aimed at furthering integration within the region should consider technology transfer, information sharing and data gathering which will be important for building regional resilience to climate change. Support through early warning systems and monitoring of climate changes are important in this regard.

Additional research is required into the following:

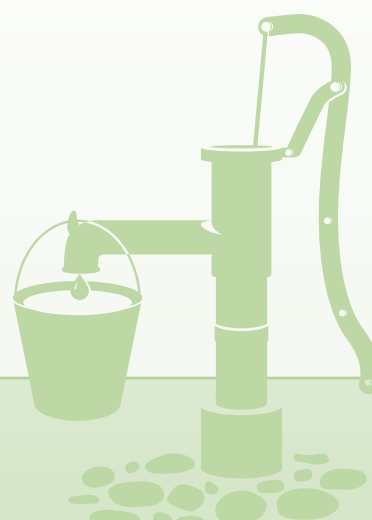
- Vulnerabilities and the impacts of climate change on rural, urban and coastal settlements and infrastructure within the SADC region.
- How best to support sound adaptation planning and implementation of NAPAs and NAPs in the SADC region.
- Vulnerability of the agriculture sector and appropriate adaptation strategies.
- National and regional infrastructure and transportation requirements and vulnerabilities across the SADC region.
- Linkages between climate change and health including the dynamics of disease transmission.
- Economic impacts of climate change and sea-level rise on coastal settlements across the SADC region.

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SANBI, DEA and GIZ in consultations with relevant sector stakeholders

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