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Southern African Drought Resilience Initiative (SADRI): and its tools for addressing droughts at various levels

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WORLD METEOROLOGICAL ORGANIZATION





SOUTHERN AFRICA Drought Resilience Initiative





Droughts are the most deadly and costly natural disaster in Southern Africa, with most of the 16 Member States of the Southern Africa Development Community (SADC) regularly experiencing recurrent and protracted droughts.

EXACERBATINGWATER SHORTAGES IN RAPIDLY URBANIZING AREAS



• By 2030, about 70 percent of the population of Southern Africa will live in cities. • The converging challenges of rapid urbanization, skyrocketing



Climate change projections within the region indicate that a large proportion of Southern Africa will become drier and hotter, with cycles of drought becoming more severe and intense.



• El Niño-related droughts, exacerbated by climate change, have affected the water flows of major rivers and reduced hydropower generation. • Extended periods of drought have caused prolonged and

Impacts of droughts are wide-ranging and felt across all economic sectors



- insecure in 2022.
- Domestic Product.

demand for water resources, and growing prevalence of drought lead to acute water shortages.

AFFECTING POWER AVAILABILITY AND RELIABILITY

widespread power outages with magnified short- and long-term economic impacts on businesses and households.

IMPACTING LIVELIHOODS AND LEADING TO FOOD INSECURITY

 Droughts lead to decreased yields and livestock losses and affect entire value chains. The resulting food shortages and price hikes intensify food insecurity.

55.7 million people in 12 SADC Member States were considered food

Impacts of drought on the agriculture sector, which employs a large segment of the population leads to a decline in countries' Gross



In 2020 with support from CIWA, the World Bank launched SADRI to advance an integrated, multi-sector and multi-level approach to regional drought resilience in 16 SADC Member States.

SADRI'S VISION:

A drought-resilient SADC region in which governments, institutions, and households develop proactive mechanisms to withstand climate change impacts and associated economic shocks.

SADRI ADVANCED ITS VISION THROUGH A TWO-PRONGED **APPROACH THAT INVOLVED:**



(i) Developing key analytics with a transboundary dimension to fill knowledge gaps and advise counterparts on drought risk management strategies and approaches.



(ii) Catalyzing behavior change in priority actors to engage, cooperate, take ownership of, and sustain a process of change.

SADRI'S FRAMEWORK FOR INTEGRATED DROUGHT RISK MANAGEMENT





ii) Drought vulnerability and risk assessment;



iii) Drought preparedness, mitigation & response



SADRI has supported countries, cities, and regional bodies in proactively adopting an integrated approach to drought risk management under three sectoral pillars focused on cities, energy systems, and live lihoods and food security along with a crosscutting pillar called the "umbrella" program.

A dedicated Monitoring, Evaluation and Learning (MEL) component is also integrated in the program.







KEY ANALYTICAL PRODUCTS

UMBRELLA PROGRAM

Drought Resilience Country Profiles for 16 SADC Members & a Regional Profile for SADC



Knowledge Hub on Drought Resilience

Drought Resilience Profiles | Mauritius

COUNTRY OVERVIEW

As a Small Island Developing State (SIDS), the Republic of Mauritius faces a range of hazards, including cyclones, storm and tidal surges, torrential rains, floods and flash floods, Indelides, torus well as technological hazards such as gas spills, port area hazards and boat accidents. While the country is not particularly prone to drought, it is classified as a water stressed country, and is challenged by seasonal water scarcity. Its last recorded drought was in 1998, when the country experienced a high deficit in rainfall, beginning in November 1998 and ending in January 1999, and affecting all sectors. As the worst drought since 1964, the country faced serious water shortages lasting up to six hours each day. During this time, around 12 million people had water supply for only one hour each day. During this time, around 12 million people had water supply for only one hour each day. The sugar industry experienced a loss of USD 160 million compared to revenues the previous season. More broadly, the country has experienced increasingly warmer seasons, erratic rainfall as well as dry spells that are typically followed by exceptionally heavy rains. These have had adverse effects on coastal erosion, landslides, dwindling numbers of animals and plants, and reduced yields in agriculture and fisheries.

> The Integrated Drought Risk Management Framework highlights a three-pillar approach centered around interconnected, multi-disciplinary, multi-institutional activities. These are 1) Vulnerability and impact assessment, 2) Monitoring and early warning systems, and 3) Mtigation, preparedness and response. This country Drought Resilience Profile contains drought information based on these three pillars.

This profile provides a background of Mauritius' drought resilience capacity under the three pillars framework.

Mauritius's vulnerability and impact assessment capacity to address drought can be regarded as medium as it foliows a decentralized operational structure, with local government tasked with incorporating climate risks in development plans, mobilizing resources for adaptation, adjusting building and land use regulations to consider climate risks and enhancing disaster preparedness, response and recovery. Given how densely populated it is, the undenstanding of hazard impacts and vulnerabilities needs to be disagregated to the greatest extent possible. In addition, given the country's vulnerability to roughly 40 different types of disasters, it is important that the country adopts a multi-hazard assessment approach in which drive is integrated.

Monitoring and early warning systems (EWS) for natural hazards as cyclones, tropical storms and other more prevalent disasters, is in Mauritus. The EWS can provide timely warnings to the end-user, making use of SMS messaging. It is also well-integrated into the regional and international monitoring systems. However, drought is less prioritized and not well-integrated into these systems within country, it is therefore categorized as medium.

Mauritius also has systems in place for mitigation, preparedness and response to climate change, and drought is embedded within this. Whils strong coordination and participation of all key stakeholder is in place for climate change mitigation, preparedness and response, the little focus on drought means water scarcity is often overlooked in mitigation strategies. Its capacity under this plair is categorized as low.

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Southern Alrica

MAURITIUS



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KEY ANALYTICAL PRODUCTS

SADRI PILLARS



LIVELIHOODS AND FOOD SECURITY PILLAR

Agri-food Value Chain Solutions for Drought Risks





Review of Strategic Food Reserves Policies

Water Production, Use and Governance in the Great Limpopo Transfrontier Conservation Area (TFCA)





FILLING DATA GAPS ON WATER PRODUCTION, USE AND GOVERNANCE

IDENTIFYING DROUGHT MITIGATION & INVESTMENTS OPTIONS IN GREAT LIMPOPO TRANSFRONTIER CONSERVATION AREA (TFCA)

- Determine the extend of water availability in aquifer, wetland and river systems
- Assess current water demand, especially among communities in the Pafuri-Sengwe Node
- Evaluate water management governance practices; and
- Identify, develop, and recommend near-term and medium-term investments for water management that lead to building community drought resilience





ANALYTICAL WORK TO FILL KNOWLEDGE GAPS IN WATER PRODUCTION, USE, AND GOVERNANCE IN THE GLTFCA

Key deliverables:

Demarcation of Wetlands that Require Specific Conservation Focus





Ranking	Rating
1	Very High
2	High
3	Medium
5	Low

Wetlands in Protected Areas
Wetlands within strategic water source areas
Wetlands for climate change resilience
Wetlands for rehabilitation aimed to improve
functioning and ecological integrity

Description

Wetlands within conservation and protected areas

Strategic water sources areas & climate resilience

Rehabilitated wetlands, PES & EIS Improvements

Other wetlands



ANALYTICAL WORK TO FILL KNOWLEDGE GAPS IN WATER PRODUCTION, USE, AND GOVERNANCE IN THE GLTFCA

Key deliverables: Groundwater Systems





Water Quality: Electrical Conductivity (Salinity)



 Image: Source of the second second

Transboundary Aquifers, showing Aquifer productivity

Pump Type



Water Quality: Nitrates



Water Quality: Fluoride



Borehole Status



GREAT LIMPOPO TFCA: IDENTIFYING INVESTMENTS TO MITIGATE DROUGHT IN TRANSFRONTIER CONSERVATION AREA (*sample of investments identified*)







MOZAMBIQUE

- Investigate feasibility for fish farming as diversified livelihood and food source
- improve regional integration of the water supply logistics chain, ensuring service management, technical assistance for the infrastructure and the availability of parts stocks
- Invest in repair of dispersed water sources (boreholes or wells) based on the recovery of operating costs.
- Improve food security through the protection and sustainable management of wetlands.

ZIMBABWE

- Develop inventory of dysfunctional/under functioning boreholes and irrigation systems. •
- Train Water Committees to manage and maintain the boreholes.
- Water supply systems, water harvesting and storage atlandscape, community and household level.
- Train women (in particular) who work in current irrigation schemes on climatesmart agriculture, Farming as a Business (FaaB), and financial management.

SOUTH AFRICA

- Continue wetland rehabilitation projects (providing technical and business skills, enhancement of biodiversity, • and poverty alleviation)
- Invest in ecological infrastructure in Strategic Groundwater & Surface Water Source Areas
- Invest in Market development of the water supply spare parts including investing in small business owners to be able to supply spare parts to the wider area, especially the Mozambican side.

TRANSBOUNDARY

- Develop Communitybased wetland management and designate community conservation areas
- Standardise wetland inventory data requirements & enforce basinwide data sharing protocol
- Set ecological control limits for groundwater
- Design a groundwater and surface water monitoring network building on existing monitoring activities under the GLTFCA



Thank you



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World Bank Water: www.worldbank.org/en/topic/water **CIWA**: www.ciwaprogram.org







