



Institutionalizing the Water-Energy-Food (WEF) Nexus approach: experience from the SADC Region

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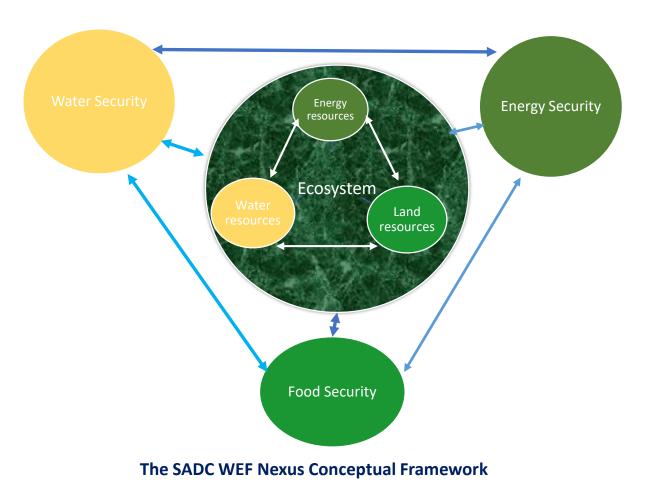
Presentation for the Water, Energy and Food for Thought: Interregional exchange on WEF Nexus Institutionalisation Organized by the Global Nexus Secretariat (GiZ)

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1. Understanding what is WEF Nexus approach and what does it do for the SADC Region?



How to achieve both objectives?

- ✓ WEF Nexus Governance: SADC Regional WEF Nexus Framework
- ✓ Investment: SADC WEF Nexus Investment Project Screening Tool

The Natural System: Water, land and energy resources are interlinked in the natural system

Natural Resource Use Efficiency

- resource use efficiency \checkmark
- climate resilient and green development
- **Ecosystems integrity**

The Human System:

Water, energy, food security are interlinked in the system

Simultaneous WEF Security:

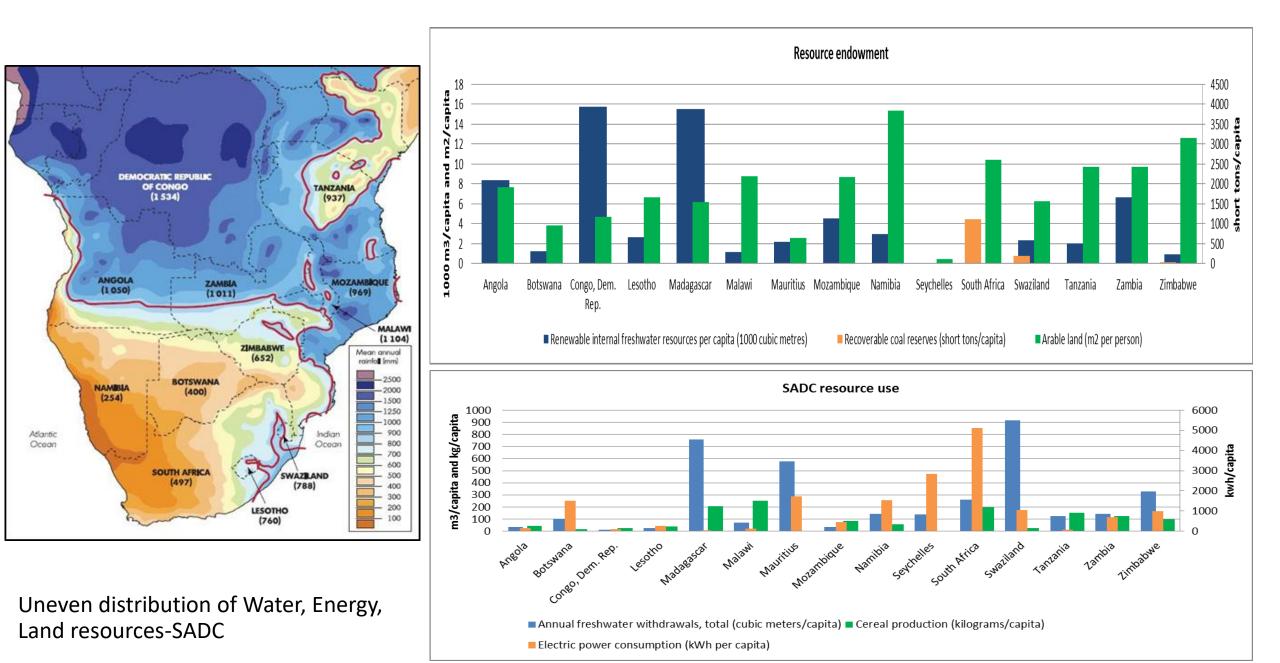
- coherent/aligned policies \checkmark
- coordinated sectors \checkmark
- joint decisions \checkmark
- integrated plans, programs, projects \checkmark



The Nexus approach for WEF security in the SADC Region

| Food Security | Energy Security | Water Security |
|---|--|--|
| About 90% rain-fed agriculturevulnerable to climate change impacts Only 7% irrigation potential developed. Water security is the main challenge as the sector is highly vulnerable to the impacts of climate change | Access to electricity is about 48% (75% urban and 32% rural) 62% of electricity is from coal, 21% from hydropower The region has vast energy resources (hydropower, coal, biomass and solar). The hydropower potential is estimated at ~ 1080 TWh/year. The current utilized capacity is ~31 TWh/year | Water resources potential is estimated at 2 300 km3/year of the renewable freshwater resources. Total water storage is only 14% of the available annual renewable water resources The distribution of the resources in a major concern- (~300 mm/year in Namibia to 1530 mm/year in D.R. Congo). Access to drinking water is 60% and to sanitation is about 40% (2012) |

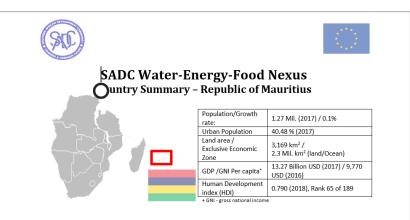
The WEF Nexus approach for regional cooperation, development, integration



The WEF Nexus approach for coherent policies

| Coherence analysis for WEF | WEF Security | | WEL Resource Use Efficiency | | | | Overall | | |
|---|--------------|--------|-----------------------------|----------------------|-------------------|--------------------------------|---------|-------------|---|
| 3 (High), 2 (Partial), 1(Limited) & 0 (No) coherence | Water | Energy | Food | WEF mean score | Climate change | Biodiversit y Ecosystems | Land | WEL | score wean score wEF and WEL |
| Regional Water Policy (SADC, 2005) | - | 3 | 3 | 3 | 1 | 2 | 1 | 1,33 | /2.12 |
| Regional Water Strategy (SADC, 2006) | - | 3 | 3 | 3 | 3 | 2 | 1 | 2 | 2.37 |
| Guidelines for Strengthening RBOs (SADC, 2010a) | - | 1 | 1 | 1 | 1 | 3 | 1 | 1,67 | 1.75 |
| Climate Change Adaptation in SADC, Strategy for the Water Sector (2011) | - | 2 | 2 | 2 | - | 1 | 1 | 1 | 1.71 |
| Regional Strategic Action Plan. Integrated Water Resources Development and Management, 2016-2020 (SADC, 2016a) | - | 3 | 3 | 3 | 3 | 3 | 2 | 2,67 | 2.85 |
| Regional Infrastructure Development Master Plan, Energy Sector (2012) | 3 | - | 1 | 2 | 3 | 1 | 1 | 1,67 | 1.5 |
| Renewable Energy and Energy Efficiency Strategy and Action Plan, 2016-2030 (SADC, 2016b) | 2 | - | 2 | 2 | 3 | 1 | 1 | 1,67 | 2 |
| Regional Energy Access Strategy and Action Plan (SADC, 2010b) | 1 | - | 1 | | 0 | 0 | 1 | 0,33 | 0.77 |
| Regional Agricultural Policy (SADC, 2014) | 3 | 3 | - | 3 | 3 | 1 | 3 | 2,33 | 2.25 |
| Regional Food and Nutrition Security Strategy (SADC, 2015a) | 2 | 0 | - | | 3 | 0 | 2 | 1,67 | 1.37 |
| Regional Indicative Strategy Development Plan, 2015-2020 (2015b) | 3 | 2 | 3 | 2.66 | 3 | 2 | 2 | 2,33 | 2.44 |
| Regional Biodiversity Strategy (2008) | 1 | 1 | 2 | 1.33 | 2 | - | 3 | 1,67 | 1.75 |
| Subject mean coherence | (2.14 | 2 | 2.1 | - | (2.27) | (1.45 | 1.58 | - (| - |

WEF Nexus opportunities for SADC Member States: Nexus Perspective Papers



Current Economic Pillars: agriculture, manufacturing, finance, services, global offshore businesses, freeport activities, information technology, communication and tourism.

Economic Growth Areas: real estate, smart cities, medical tourism, tertiary educational sector and, coastal and ocean resources.

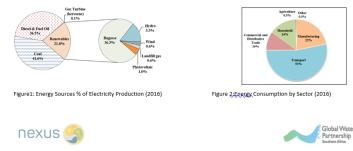
Challenges: Increasing global fuel and food prices, climate change impacts, sea level rise, decreasing foreign investments, limited natural resources, population growth and water intensive development. In addition, the island imports more the 75% of its food products and around 85% of its energy fuel requirements.

Water Summary

In 2016, the island received 3,536 m³ of precipitation (10% contributing to groundwater recharge, 30% as evapotranspiration and 60% as surface runoff). Water utilisation was estimated at 961 m³, with the agricultural sector accounting for 37%, the domestic, industrial and tourism sector accounting for 28% and the remaining 35% for hydropower generation. Approximately 85% of total water use was met by <u>surface</u>, <u>water</u>, and the remaining 15% by groundwater. Low investments in the water infrastructures over the last 25 years, has resulted in the island currently being only able to harness a maximum of 35% of its total annual rainfall.

The sector is being heavily impacted by climate change through reduced annual rainfall and an increased prevalence of more intense precipitation events increasing surface runoff reducing groundwater recharge. Water demand is increasing with population growth, improvement in living standards and greater economic development.

Energy Summary

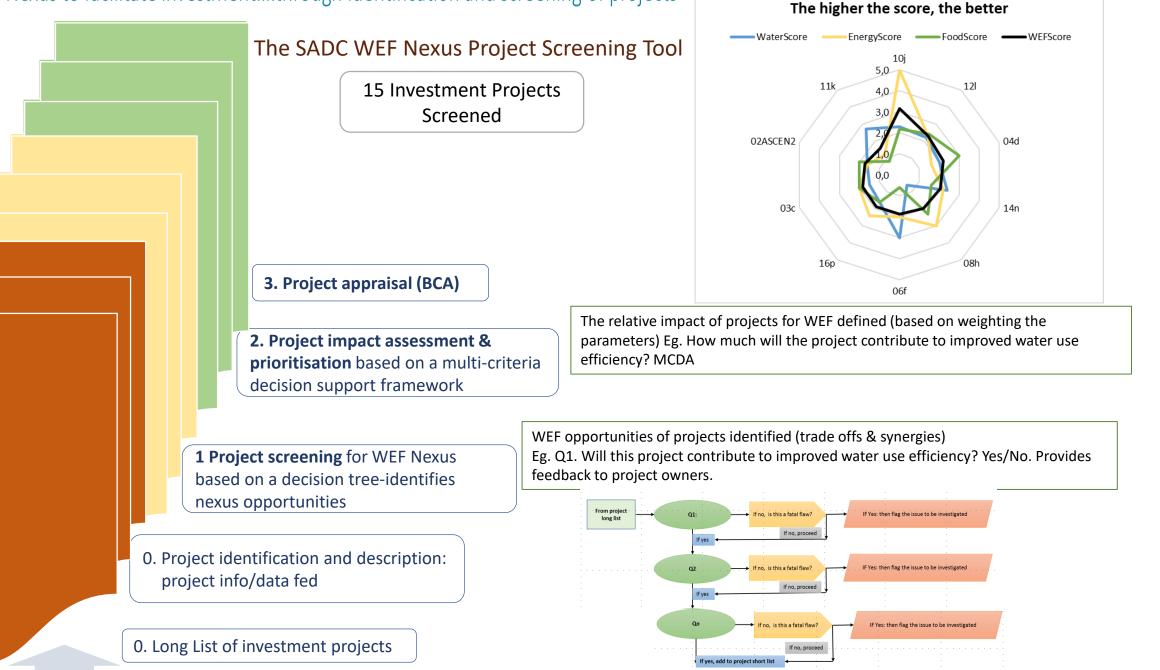




WEF Nexus opportunities in the SADC Member States

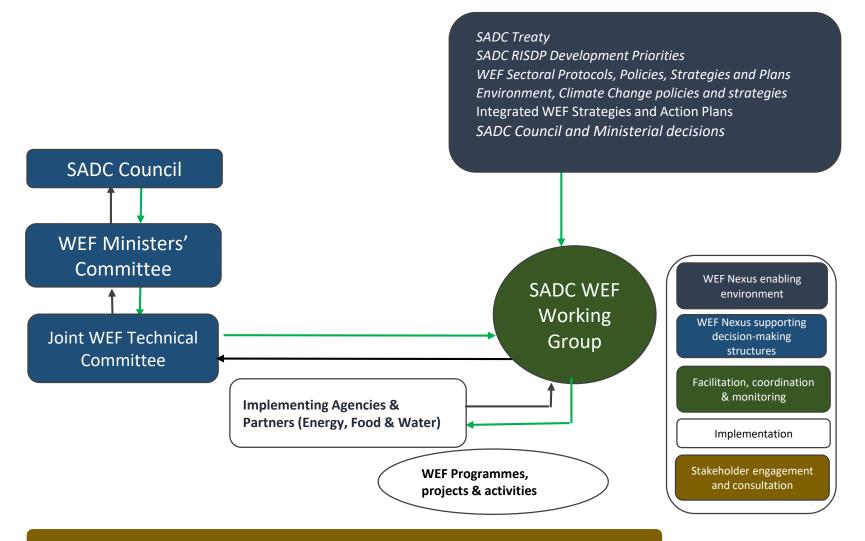
- National Development Plans (NDPs)/SDGs:
 - NDP (Zambia, Namibia, South Africa;
 - SDGs (Botswana, Mozambique, Seychelles, Lesotho & South Africa)
- Climate Change Response: South Africa in the NAP process
- Efficiency and sustainability in Priority Sectors:
 - ✓ Agriculture/Livestock: Botswana, Lesotho, eswatini
 - Energy-Mauritius, Mozambique
 - ✓ Environment-Angola, Lesotho
 - ✓ Water-Botswana, Namibia, South Africa
 - ✓ Industry-Tanzania, DRC, South Africa
- Multi-purpose dam projects (eg. Angola, Malawi, Zimbabwe, Tanzania, Madagascar, Lesotho)
- Others-circular economy-Namibia

The WEF Nexus to facilitate investment....through identification and screening of projects



Results: Overall WEF score

The SADC Regional WEF Nexus Framework



SADC Regional WEF Nexus Multi-Stakeholder Forum

The process of developing the SADC WEF Nexus Framework and investment projects

| Inception | Technical Inputs | Dialogue Process | Outputs | Validation | Adoption |
|---|--|--|---|--|--|
| Stakeholder analysis Preliminary Regional level WEF analysis | Regional Nexus Assessment National Nexus Assessment Discussion Papers: on WEF Nexus Governance and on Investment Projects Preliminary list of investment projects | • | e ✓ SADC Joint En Ministers - Ma | ergy & Water y 2019 Jinisters, June 2019 | • Nexus Framework Document Adopted |
| 7 th SADC s RBOs 1 | 8 th SADC Multi- stakeholder Dialogue & 1 st WEF Nexus Technical Dialogue | 2 nd WEF Nexus Technical Dialogue | WEF Nexus Workshop & 9 th SADC WEF Nexus Dialogue | SADC WE Nexus validation workshop | SADC Joint Energy and Water Ministers – Oct 2020 <i>Approved the</i> <i>Regional Framework</i> |
| Jan – May 2017 | Nov. 2017 | Nov 2018 | March 2019 | Sept 2019 | A Oct 5050 Regional Framework |

parallel process to identify and screen investment projects

Key Lessons from the SADC Region

Adopting a WEF Nexus approach is a long process that requires:

- 1. A High level political support and ownership. SADC took the WEF nexus discussions at higher levels—SADC Council of Ministers, SADC Ministers for Water, Energy and Agriculture
- 2. A continuous multi-stakeholder/sectoral dialogue/engagement: The SADC process built on the existing regional dialogues...from water to WEF dialogue platform
- **3.** Build on existing structures rather than creating new ones. SADC regional framework is building on the existing SADC structures
- 4. Capacity for analysis to support decisions. Research to generate knowledge and information for decision
- 5. Define the scope and objectives of the Nexus approach. SADC defined the conceptual understanding and objectives of the Nexus approach for regional development