

# A regional approach to implementing the WEF nexus: a case study of the Southern African Development Community

**Patrice Kandolo Kabeya<sup>1</sup>, Dumisani Mndzebele<sup>1</sup>, Moses Ntlamelle<sup>1</sup>,  
Duncan Samikwa<sup>1</sup>, Alex Simalabwi<sup>2</sup>, Andrew Takawira<sup>2</sup>, Kidane Jembere<sup>2</sup>  
and Shamiso Kumbirai<sup>2</sup>**

<sup>1</sup>*Southern African Development Community Secretariat, Gaborone, Botswana;* <sup>2</sup>*Global Water Partnership Southern Africa, Pretoria, South Africa*

## 1. Introduction

Nhamo et al. (2018) explain that water, energy, and food are vital for human well-being, poverty reduction, and sustainable development. The SADC Regional WEF Nexus Framework report (2019) highlights that the Southern African region represents a wide range of resource and climate contexts with varied supplies of water, food, and energy. About 60% of the population of the Southern African Development Community (SADC) live in rural areas relying on rain-fed agriculture, lacking basic services of energy, water, and sanitation, yet the region is endowed with vast natural resources. Ensuring water, energy, and food security has dominated the development agenda of Southern African countries, centered on improving livelihoods and building resilience and regional integration (Nhamo et al., 2018).

Increasing demands for water, land, and energy resources due to population growth, increasing urbanization, and increasing economic growth are the major challenges in the region. These challenges are further exacerbated by climate change making this particularly concerning for the SADC region due to dependence on climate-sensitive sectors of agriculture and energy, which heavily depend on water resources (Kusangaya et al., 2014).

Mabhaudhi et al. (2016) state the water–energy–food (WEF) nexus approach has potential application in the region for ensuring security of water, energy, and food and for bringing resource use efficiency. It provides opportunity to stabilize competing demands and promote regional integration, particularly in the SADC where resources are mostly transboundary. The WEF nexus

approach can help to ensure that development of one of the sectors has minimum impacts on the other. Sectoral collaboration is particularly relevant in SADC, as watercourses and electricity grids are shared among countries ([Southern African Development Community, 2019](#)).

### 1.1 Status on water, energy, and food security in the SADC region

Water resources availability in the region is generally good, estimated at 2300 km<sup>3</sup>/year of the renewable freshwater resources against an extractive demand of 2% of the available resources ([SADC, 2012](#)). However, its distribution in the region is a major concern with mean annual rainfall ranging from as low as approximately 300 mm/year (Namibia) to 1530 mm/year (D.R. Congo) ([Southern Africa Development Community, 2016](#)). Total regional water storage is only 14% of the available annual renewable water resources. Efficacy in the harnessing and utilization of the region's water resources is important in attaining climate-resilient economic development in the region. Access to drinking water and sanitation in the region is still very low, estimated at 60% for water and 40% for sanitation ([Southern Africa Development Community, 2016](#)).

Energy is a critical input for the implementation of the SADC Industrialisation Agenda. The region is endowed with vast energy resources, namely hydropower, coal, biomass, and solar although availability across the region varies from country to country. However, the SADC Centre for Renewable Energy and Energy Efficiency (SACREEE) reports that only 48% (75% urban and 32% rural) of the total population in the region have access to electricity ([SADC Centre for Renewable Energy Efficiency, 2018](#)). It is worth noting that 62% of electricity generation is from coal followed by hydropower resources with 21% and the remainder is from medium-scale renewable (solar and wind) energy technologies and gas-fired power plants as well as one nuclear power plant. The overall hydropower potential of the SADC region is estimated at approximately 1080 terawatt hours per year (TWh/year), yet the current utilized capacity is less than 31 TWh/year ([Southern African Development Community, 2018](#)).

More than 90% of agricultural activities in the SADC region depend on rain-fed farming although there is an abundance of water. In the region, 77% of freshwater resources are available for agricultural activities; however, only about 7% of the region's irrigation potential has been developed ([Southern Africa Development Community, 2016](#)). Water security for the agriculture sector is the main challenge of the region in attaining food security since the agriculture sector is highly vulnerable to the impacts of climate change (drought and flood). Energy is less utilized in the agricultural sector especially in the small-holder setup.

### **1.1.1 Need for integrated effort to deliver on the regional development agenda**

Harnessing the interdependency, interconnection, and complementarity among the water, energy, and agriculture sectors is key to enhancing efficiency in the utilization of the regions' limited resources, needed to uplift lives of SADC citizens. The demand for a more integrated approach to resolving the regional challenges has been noticeably rising over the years. Increasingly, each sector has realized that the developmental challenges they are facing are intertwined and go beyond their sectoral space. Therefore, there is a need for collective responsibility for joint management and utilization of resources to achieve the regional development agenda.

Noting this challenge, SADC leadership has in the recent past started to hold cross-sectoral dialogues to deal with shared developmental challenges. The first event was the Joint Energy and Water Ministerial Workshop in Gaborone, Botswana, in 2016. The workshop focused on finding solutions to respond to the 2015/16 drought, which had regional impacts on food security, water availability, and hydropower generation.

The second event was a Joint Investment Conference for Energy and Water Infrastructure held in 2017 in Ezulwini, Eswatini. The Conference facilitated the exchange of ideas with potential funders and forged practical solutions to the water and energy challenges confronting the region. The Joint Energy and Water Ministerial Meetings have been held since 2016. However, the agriculture sector as the largest user of the region's abstracted water resources (77%) and needing energy is yet to participate in these joint sessions ([Southern Africa Development Community, 2016](#)).

The SADC multisector dialogues have been instrumental in sensitizing stakeholders from various sectors and promoting integrated approaches. Regional experience has also shown that when infrastructure investment projects of a multisectoral nature are promoted by all involved sectors, they stand a better chance of securing funding than when promoted by only one sector. For example, better traction was realized when the Regional Infrastructure Development Master Plan (RIDMP) projects such as the Inga Dams, Batoka Gorge Hydroelectric Power Station, and Lesotho Highlands Water Project were jointly promoted by the energy and water sectors. The potential socioeconomic benefits and beneficiaries are broadened in such joint efforts.

## **2. Fostering water, energy, and food security nexus dialogue and multi-sector investment in the SADC region project**

The SADC Nexus Dialogue Project on "Fostering Water, Energy and Food Security Nexus Dialogue and Multi-Sector Investment in the SADC Region" is a

project supported by the European Commission as part of the global “Nexus Dialogues Programme.”

The overall objective of the project is to support the transformation required to meet increasing water, energy, and food security demand in a context of climate change in the SADC region through the development of a truly integrated nexus approach. The specific objective of the project is to create an enabling environment that will drive cross-sectoral engagement and implementation of nexus investment projects that contribute to enhancing water, food, and energy security in the SADC region.

The Project began in 2017 and has been implemented in two phases. Phase I of the Nexus Dialogues Programme ran from 2017 to 2019 and aimed at helping regional organizations, and their Member States (MS) applied a nexus approach in the formulation of multisector policy recommendations, strategies, action plans, and investment programs. Phase I also aimed to identifying concrete investment projects—with a focus on multipurpose water infrastructure. The key results achieved from phase I involved:

- Establishing an SADC Regional WEF Nexus Governance Framework;
- The development of an SADC WEF nexus investment project screening and appraisal tool; and
- Developing a prioritized list of nexus investment projects.

Phase II of the project has a duration of 3 years, from 2020 until 2023. This phase will build on the achievements of the first phase, with the overall objective being to institutionalize the WEF nexus approach at regional and national governance structures and investment decisions for water, energy, and food security in the SADC region. The specific objectives of phase II are to

- Increase application of the nexus approach in planning, policymaking, and implementation, and
- Increase interest from public and private investors for investment projects applying the WEF nexus approach.

## 2.1 SADC WEF nexus conceptualization

The WEF nexus in the SADC region is understood as an approach to facilitate better interactions and synergies between the water, food, and energy sectors to unlock and optimize development potential for economic growth and transformation in the region. The two expected contributions of the WEF nexus approach in the SADC region include the following:

- Facilitating the simultaneous achievement of water, energy, and food securities; and
- Improving water, energy, and land resource use efficiencies.

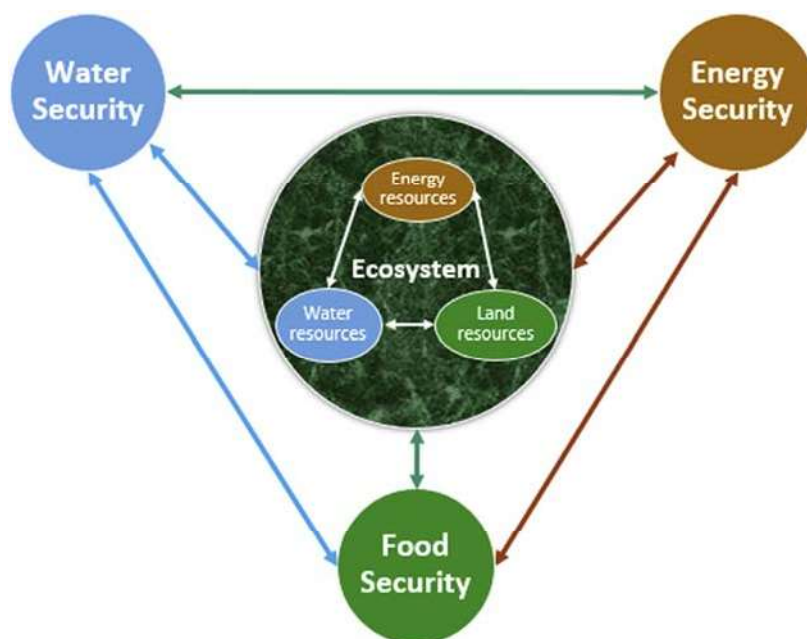


The WEF nexus approach also presents opportunities for greater resource coordination, management, and policy convergence across sectors. SADC expects the WEF nexus approach to enhance investments in the region. Fig. 8.1 shows the conceptual understanding by SADC for the WEF nexus approach in the region.

### 3. Key planning, policy, and legal documents that are relevant for water, energy, and food security in the SADC region

#### 3.1 Regional development context and sustainable development

The Treaty of the Southern African Development Community is the founding document for the establishment of the SADC and outlines the principles, objectives, and general undertakings of the Community. The SADC Treaty emphasizes sustainable and equitable growth and socioeconomic development for poverty alleviation, increased standard of living, and quality of life in the region (Southern African Development Community, 1992). It aims to realize the aforementioned, through sustainable utilization of the region's resources, deeper integration, and economic development.



**FIGURE 8.1**

SADC WEF nexus conceptual understanding.

The Regional Indicative Strategic Development Plan (RISDP) elaborates the implementation of these aspirations by, among other things, prioritizing industrial development and market integration, infrastructure development for support of regional integration, and agriculture, food, and natural resources development. The energy, food, and water sectors are instrumental in the realization of the developmental priorities.

The SADC region also strongly embraces sustainable development, as provided in the protocols, policies, and strategies of the three sectors. An integrated approach toward meeting the Sustainable Development Goals (SDGs) for food, energy, and water security has been promoted in the region to increase the chances of meeting other related goals.

### 3.1.1 Key water sector planning, policy, and legal documents

SADC has put in place regional regulatory, policy, strategies, and planning instruments that provide the enabling environment for the implementation of the SADC water sector programs and plans. These are summarized in [Table 8.1](#). The [SADC Revised Protocol on Shared Watercourses \(2000\)](#) provides the framework for the region that fosters closer cooperation for judicious,

**Table 8.1** Main policy, planning, and legal documents in the SADC water sector. Courtesy, [SADC 2019](#).

SADC document	Objective
The SADC declaration and treaty (1992)	Governs the regional activities of SADC and its MS aimed at achieving the SADC vision and agenda of regional integration, poverty eradication, industrialization, and economic development.
The SADC regional indicative strategic development plan (2003, 2007, 2015, and 2020–30)	Outlines the key interventions necessary to deepen the SADC vision over the period 2005 to 2020 and stipulates various targets for water and sanitation access.
The <a href="#">SADC revised protocol on shared watercourses (2000)</a>	Fosters closer cooperation for judicious, sustainable and coordinated management, protection and utilization of the 15 SADC shared watercourses and advance the SADC vision and agenda.
The Southern African vision for water, life and the environment in the 21st century (2000)	Details the SADC vision for water, life, and the environment in the 21st century of <i>equitable and sustainable utilization of water for social, environmental justice, and economic benefit for present and future generations</i> .

**Table 8.1** Main policy, planning, and legal documents in the SADC water sector. Courtesy, [SADC 2019](#). *continued*

SADC document	Objective
The SADC regional water policy (RWP) (2005)	Aims at providing a framework for sustainable, integrated, and coordinated development, utilization, protection, and control of national and transboundary water resources in the SADC region, for the promotion of socioeconomic development and regional integration and the improvement in the quality of life of all people in the region.
The SADC regional water strategy (2006)	Provides for the framework for the implementation of the RWP. While the RWP deals with the “what” on regional water issues, the RWS deals with the “how,” “who,” and “when” in the implementation of the RWP.
The SADC regional awareness and communication strategy for the water sector (2009)	To improve awareness and understanding on water issues and initiatives in the SADC region contributing to poverty eradication and regional integration.
The SADC regional strategic action plans (RSAPs): I, II, III, IV, and V	The main objective of the RSAP I (1999–2004) was to create an enabling environment for joint management of regional water resources. The RSAP II (2005–10) put emphasis on infrastructure development. The goal of the RSAP III (2011–15) was to strengthen the enabling environment for regional water resources governance, management, and development through the application of IWRM at the regional, river basin, MS, and community levels. The RSAP IV (2016–20) was developed with a strong focus on unlocking the potential of water as a catalyst in socioeconomic development of the region. The RSAP V (2021–25) builds on the previous phases of RSAPs developed over the years as well as addressing the current challenges facing the regional water sector.
The SADC guidelines for strengthening river basin organisations (2010)	Gives guidelines on the establishment and development of RBOs, implementation of environmental management programs, procedures for RBOs to become financially sustainable, and procedures to assist RBOs with the implantation of participatory approaches.
Climate change adaptation in SADC: strategy for the water sector (2011)	To improve climate resilience in SADC region.

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**Table 8.1** Main policy, planning, and legal documents in the SADC water sector. Courtesy, [SADC 2019](#). *continued*

SADC document	Objective
The SADC regional infrastructure development master plan (2012)	Defines the minimum but ultimate regional infrastructure development requirements and conditions to facilitate the implementation and realization by year 2027 of the key infrastructure in the water, energy, transport, tourism, meteorology, and telecommunication sectors that will move forward the SADC agenda and enable the SADC region realize its goal: <i>The attainment of an integrated regional economy on the basis of balance, equity, and mutual benefit for all MS.</i>
The SADC industrialisation strategy and road map (2015–2063)	Aims to increase competitiveness (at the firm/industry, country, and regional levels) with a quantitative goal to lift the regional growth rate of real GDP from 4% annually (since the year 2000) to a minimum of 7% a year.
UN sustainable development goal on water (SDG6)	Goal 6 addresses not only the issues relating to drinking water, sanitation, and hygiene but also the quality and sustainability of water resources worldwide.
MS, Member States; RBOs, River Basin Organizations; SADC, Southern African Development Community. Southern Africa Development Community (SADC), 2016. <i>Regional Strategic Action Plan on Integrated Water Resources Development and Management Phase IV</i> . < <a href="https://www.sadc.int/files/9914/6823/9107/SADC_Water_4th_Regional_Strategic_Action_Plan_English_version.pdf">https://www.sadc.int/files/9914/6823/9107/SADC_Water_4th_Regional_Strategic_Action_Plan_English_version.pdf</a> > (accessed March 2021).	

sustainable, and coordinated management, protection, and utilization of the 15 SADC shared watercourses and that advances the region's vision and agenda. Guidelines in the interpretation and application of the [SADC Revised Protocol on Shared Watercourses \(2000\)](#) have since been developed to assist MS and River Basin Organizations (RBOs) to develop their own appropriate rules and procedures, particularly with respect to data and information sharing and procedures for implementation of planned measures.

### 3.2 Key energy sector planning, policy, and legal documents

There are a number of legal documents, policies, and institutional frameworks aimed at facilitating availability of energy and energy security for the SADC region. These are summarized in [Table 8.2](#). The SADC Energy Protocol of 1996 in particular clearly stipulates the region's desire to harmonize national and

**Table 8.2** Main policy, planning, and legal documents in the SADC energy sector.

SADC document	Objective
The SADC declaration and treaty (1993)	Governs the regional activities of SADC and its MS aimed at achieving the SADC vision and agenda of regional integration, poverty eradication, industrialization, and economic development.
SADC energy protocol (1996)	To promote the harmonization of national and regional energy policies, strategies, and programs on matters of common interest based on equity, balance, and mutual benefit.
The SADC energy cooperation policy and strategy (1996)	To promote the sustainable, coordinated management, protection, and efficient utilization of energy resources.
The SADC energy action plan (1997) and (2000)	Programmes for creating the enabling environment and harmonization of policy/legal and regulatory frameworks.
The SADC regional indicative strategic development plan (2003, 2007, 2015)	Outlines the key interventions necessary to deepen the SADC vision over the period 2005 to 2020 and stipulates various targets for energy access.
The SADC regional energy access strategy and action plan (2010)	Details strategies and plans of halving the proportion of people without access to adequate, reliable, least-cost, environmentally sustainable energy services by 2020 for each end use and thereafter halving the proportion in successive 5 year periods until there is universal access for all end users.
The SADC regional infrastructure development master plan (2012)	Defines the minimum but ultimate regional infrastructure development requirements and conditions to facilitate the implementation and realization by year 2027 of the key infrastructure in the water, energy, transport, tourism, meteorology, and telecommunication sectors that will move forward the SADC Agenda and enable the SADC region realize its goal: <i>The attainment of an integrated regional economy on the basis of balance, equity, and mutual benefit for all MS.</i>
The SADC renewable energy and energy efficiency strategy and action plan (REEESAP) (2017)	To provide a framework for MS to develop their own renewable energy and energy efficiency strategies and action plans, leading to greater uptake of renewable energy resources as well as mobilization of financial resources for the sector.
SAPP plans	Regional electricity planning and trading; project development and implementation.
The SADC industrialisation strategy and road map (2015–2063)	To increase competitiveness (at the firm/industry, country, and regional level) with a quantitative goal to lift the regional growth rate of real GDP from 4% annually (since the year 2000) to a minimum of 7% a year.
RERA instruments	Electricity regulatory frameworks.

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**Table 8.2** Main policy, planning, and legal documents in the SADC energy sector. *continued*

SADC document	Objective
UN sustainable development goal on energy (SDG7)	Ensuring access to affordable, reliable, sustainable and modern energy for all (inspired formulation of the vision adopted for the REEESAP).
MS, Member States; SADC, Southern African Development Community. Southern Africa Development Community (SADC), 2016. <i>Regional Strategic Action Plan on Integrated Water Resources Development and Management Phase IV</i> . < <a href="https://www.sadc.int/files/9914/6823/9107/SADC_Water_4th_Regional_Strategic_Action_Plan_English_version.pdf">https://www.sadc.int/files/9914/6823/9107/SADC_Water_4th_Regional_Strategic_Action_Plan_English_version.pdf</a> > (accessed March 2021).	

regional energy policies, strategies, and programs on matters of common interest based on equity, balance, and mutual benefit. This Protocol and other legal and policy frameworks, as well as the strategic action plans, have created an enabling environment for investment and implementation of programs and projects in the energy sector and for inculcating economic cooperation among the SADC MS.

### 3.2.1 Key agricultural sector planning, policy, and legal documents

The agriculture sector contributes between 4% and 27% of GDP and approximately 13% of overall export earnings in the various SADC MS. About 70% of the region's population depends on agriculture for food, income, and employment; hence the performance of this sector has a strong influence on food security, economic growth, and social stability in the region (<https://www.sadc.int/themes/agriculture-food-security/> accessed January 05, 2021).

The Food, Agriculture and Natural Resources Directorate (FANR) of the SADC Secretariat is responsible for programs in food security, crop and livestock production, and fisheries. Table 8.3 describes the main SADC legal documents, policies, and strategies for the agricultural sector.

**Table 8.3** Main SADC policy, planning, and legal documents for food security.

SADC document	Objective
The SADC declaration and treaty (1993)	Governs the regional activities of SADC and its MS aimed at achieving the SADC vision and Agenda of regional integration, poverty eradication, industrialization, and economic development.
SADC protocol on wildlife conservation and law enforcement (1999)	To establish a common framework for conservation and sustainable use of wildlife in the region.
SADC protocol on fisheries (2001)	To promote and enhance food security and human health, the economic opportunities for nationals of the region are generated so as to alleviate poverty with the ultimate goal of poverty eradication.

**Table 8.3** Main SADC policy, planning, and legal documents for food security.  
*continued*

SADC document	Objective
Dar-es-salaam declaration on agriculture and food security in the SADC region (2004)	Sets out SADC MS' commitment to enhancing agriculture as a means of improving access to food for people in the region. MS agreed to implement short-, medium-, and long-term objectives to advance the state of agriculture and food security in southern Africa. Short-term plans focus on raising the level of agriculture and food security through such means as ensuring small farmers access agricultural inputs, improving fertilizer usage in the region, and increasing production of drought-resistant crops and short-cycle livestock. Medium- to long-term approaches concentrate on maintaining sustainable agriculture and food security measures through environmental conservation, disaster preparation, and research into modern agricultural technologies. The declaration instructs the SADC integrated committee of ministers to implement the related plan of action, reviewing its progress every 2 years.
The SADC regional indicative strategic development plan (RISDP) (2003, 2007, 2015)	Outlines the key interventions necessary to deepen the SADC vision over the period 2005 to 2020 and stipulates various targets for food and nutrition security.
Charter establishing the centre for coordination of agricultural research and development (CCARDESA) (2010)	A charter establishing the centre for coordination of agricultural research and development for southern Africa.
The SADC regional infrastructure development master plan (RIDMP) (2012)	Defines the minimum but ultimate regional infrastructure development requirements and conditions to facilitate the implementation and realization by year 2027 of the key infrastructure in the water, energy, transport, tourism, meteorology, and telecommunication sectors that will move forward the SADC Agenda and enable the SADC region realize its goal: <i>The attainment of an integrated regional economy on the basis of balance, equity and mutual benefit for all MS.</i>
SADC regional agriculture policy (2014)	To enhance sustainable agricultural production, productivity, and competitiveness; improve regional and international trade and access to markets of agricultural products; improve private and public sector engagement and investment in the agricultural value chains; and reduce social and economic vulnerability of the region's population in the context of food and nutrition security and the changing economic and climatic environment.

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**Table 8.3** Main SADC policy, planning, and legal documents for food security.  
*continued*

SADC document	Objective
SADC food and nutrition security and vulnerability synthesis report (2020)	Provides an overview of vulnerability across the region, especially as it relates to food and nutrition security.
The SADC industrialisation strategy and road map (2015–2063)	Aims to increase competitiveness (at the firm/industry, country and regional level) with a quantitative goal to lift the regional growth rate of real GDP from 4% annually (since the year 2000) to a minimum of 7% a year.
SADC control strategy for peste de petit ruminants (PPR) (2010)	Peste de petit ruminants (PPR) is a serious viral disease of goats and sheep that causes high mortality in these two species with significant economic impact. Following an outbreak in two countries within the region in 2010, SADC developed a regional PPR control strategy in response to the outbreak of this disease.
The Global report on food crises (GRFC) (2020)	Describes the scale of acute hunger in the world. It provides an analysis of the drivers that are contributing to food crises across the globe and examines how the COVID-19 pandemic might contribute to their perpetuation or deterioration.
UN sustainable development goal on hunger (SDG2)	Zero hunger. The food and nutrition sector is central to hunger and poverty eradication and offers solutions for development.

MS, Member States; SADC, Southern African Development Community.

Of note is the SADC Protocol on Fisheries of 2001, which seeks to promote and enhance food security and human health, the generation of economic opportunities for nationals of the region are generated so as to alleviate poverty with the ultimate goal of poverty eradication.

#### 4. Identified challenges related to the water–energy–food nexus approach in the SADC region

The major challenges related to the WEF nexus approach in the SADC region are summarized as follows.<sup>1</sup>

<sup>1</sup> Southern African Development Community, 2019. *SADC Water-Energy-Food (WEF) Nexus Framework*.

### 4.1 Inadequate coordination of the three sectors at policy- and decision-making levels

Regional- and country-level assessments on WEF nexus indicated that one of the challenges of promoting the WEF nexus approach in the SADC region is the sector-focused policies and institutions with inadequate coordination mechanisms. The water, energy, and food policies in the SADC region are sector-focused with limited recognition of the interlinkages between the water—land—energy resources. Similarly, the institutions and governance arrangements are structured around the sectors. Sectors are working in silos (sectoral policy formulation, planning, budgeting, and implementation) with limited or no interaction between sectors, overlapping mandates and power dynamics among sectors.

The following table shows the level of WEF coherence of SADC policies, strategies, and plans (SADC, 2019). WEF coherence is greatest with respect to the policies, plans, and strategies for water, followed by agriculture, and finally energy. Policy statements and strategies such as the promotion of multipurpose reservoirs that serve drinking water, irrigation, and hydropower requirements are highly coherent with WEF nexus approach; for example, as advocated in the Regional Water Strategy (SADC, 2006). Energy plans are the relatively least coherent with regard to WEF, leaning toward a primarily focus on energy sector requirements and planning, particularly for economic growth, with relatively little attention to water and especially agriculture. The Regional Strategic Action Plan for IWRM (Southern African Development Community, 2016) is highly coherent with WEF, which can be expected owing to the holistic and intersector focused approach of Integrated Water Resource Management (IWRM) with respect to WEF. The Regional Indicative Strategic Development Plan (Southern African Development Community, 2015) scores relatively well, partial to high coherence, in part owing to its mandate acting as a guiding plan to direct future intersector activities for the SADC region. The Regional Agricultural Policy (Southern African Development Community, 2014) is also highly coherent with respect to WEF, including numerous cross-sector strategies and plans.

Generally, low WEF security mean score as compared with WEL resource use efficiency mean score indicates that the water, agriculture, and energy policies, strategies, and plans consider biodiversity, land resources management, and climate change issues as secondary importance relative to water, energy, and food security.

	WEF Security				WEL Resource Use Efficiency				Overall
	Water	Energy	Food	WEF mean score	Climate change	Biodiversity Ecosystems	Land	WEL mean score	Overall mean 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 River Basin Organisations (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	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	-	1	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
<b>Subject mean coherence</b>	<b>2.14</b>	<b>2</b>	<b>2.1</b>	<b>-</b>	<b>2.27</b>	<b>1.45</b>	<b>1.58</b>	<b>-</b>	<b>-</b>

Type of coherence	Description of coherence	Score
<b>High coherence</b>	The policy, strategy or plan aligns strongly across water, energy and food security. It also devotes specific attention to sub-components (climate change, ecosystems and biodiversity, land, integration, participation and gender, and livelihoods). It includes numerous, comprehensive and detailed complementary statement, strategies, activities and plans for both WEF and sub-components.	3
<b>Partial coherence</b>	Although the policy, strategy or plan supports water, energy and food security inter-sector alignment, as well as for sub-components, it is relatively less clear and distinct how it could be achieved. A few statements, strategies, activities and plans are included for WEF and sub-components, but lacks relative comprehensive details.	2
<b>Limited coherence</b>	The policy, strategy or plan supports water, energy and food security inter-sector alignment, as well as for sub-components, in the form of general statements. No statements, strategies, activities or plans are provided.	1
<b>No coherence</b>	No evidence that water, energy, food security or sub-components statements are aligned or coordinated. No relevant statements, strategies, activities or plans are provided.	0

Similarly, the SADC Governance structures are largely dominated by sectoral orientations. The Water, Energy and Agriculture Regional Technical Committees follow the lines of their respective sectoral senior officials and then the respective sectoral ministries. However, the Joint SADC Water and Energy Ministers meetings are establishing a very useful mechanism for coordinating the two sectors. There is a plan to bring the agriculture ministers into these meetings to make it an SADC WEF Ministers meeting.

#### ***4.1.1 Inadequate coordination of the three sectors at the regional technical level***

The SADC region generally has sector-focused and uncoordinated plans and targets. This can be demonstrated by looking at the SADC Regional Infrastructure Development Master Plan (RIDMP), which sets out the region's infrastructure development targets. The RIDMP targets were set for the different sectors (agriculture, water, energy) without adequately considering the available water, land, and energy resources of the region. Furthermore, the programs are more sector-based such as energy sector development, agricultural sector development, or water supply service programs. The focus is on attaining sector-specific targets rather than meeting comprehensive and integrated WEF targets.

#### ***4.1.2 Absence of a formal structure to facilitate coordination of the units responsible for the WEF sectors within the SADC secretariat***

At the SADC Secretariat level, there are two directorates under the Deputy Executive Secretary (Regional Integration) that are dealing with water, energy, and food security issues. One is the Directorate for Infrastructure (responsible for water and energy), and another is the Directorate for Food, Agriculture and Natural Resources (FANR) (responsible for agriculture, food security, natural resources management, environment and climate change, and tourism). One weakness identified at the SADC Secretariat is that each Directorate generally works separately with relevant SADC subsidiary organisations, partners, and stakeholders without adequate coordination. Each Directorate reports to their relevant cluster structures of the SADC main governance structure of technical committees rising up the decision-making channel to the Council of Ministers.

#### ***4.1.3 Weak coordination of programs by the regional implementing entities and other partners***

SADC has regional subsidiary entities that support implementation of programs. However, coordination of their programs is through the respective sectoral units of the SADC secretariat. There has not been a clear mechanism for coordinating the programs of such entities from the WEF nexus perspective.

#### ***4.1.4 Inadequacy of the existing regional water multistakeholder platform to facilitate WEF nexus dialogues***

One of the strengths of the SADC region with respect to the WEF nexus approach is availability of different regional platforms for multistakeholder consultation and dialogue. The SADC Regional Water Dialogue and the SADC River Basin Organizations' Meetings provided several opportunities for discussing WEF nexus issues at regional level. The scope for the SADC Water Multi-Stakeholder Dialogue has been broadened to include energy and food security sectors and has been renamed as the SADC Regional WEF Dialogue.

## 5. Operationalizing the WEF nexus in Southern Africa

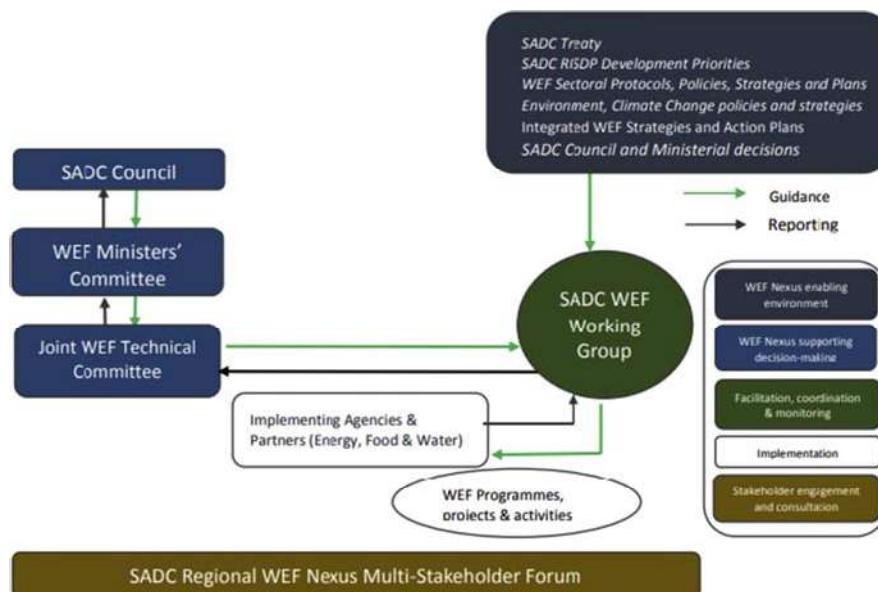
### 5.1 SADC WEF nexus governance framework

The SADC Regional WEF Nexus Framework guides the institutionalization of the WEF nexus approach in the Community and was endorsed by the SADC Ministers responsible for water, energy, and agriculture in 2020. It facilitates integrated planning and development to support SADC's developmental agenda. The Framework is developed as an organizing mechanism for the coordination of institutions, policies, strategies, programs, and projects to achieve WEF security and ensure natural resource efficiency.<sup>1</sup>

The SADC Regional WEF Nexus Framework is expected to bring about alignment/coherence between the water, energy, and food policies; facilitate institutional coordination; align development strategies/targets/programs of the three sectors; and manage trade-offs and promote nexus investments in the region.

The objectives of the Framework are to

- Facilitate integrated planning and implementation of initiatives that will drive water, energy, and food security;
- Ensure simultaneous achievement of water, energy, and food security in the region through optimization of investments; and
- Improve sustainable use and management of natural resources underpinning development in the region (Fig. 8.2).



**FIGURE 8.2**

SADC WEF nexus framework. *Southern African Development Community (SADC), 2019. SADC Water-Energy-Food (WEF) Nexus Framework.*

The Framework is expected to contribute in addressing the main challenges related to the WEF nexus approach in the region by providing overall guidance for (1) coordinating the three sectors at policy- and decision-making levels, (2) coordinating the three sectors at the regional technical level, (3) coordinating the units responsible for the WEF sectors within the SADC Secretariat, (4) coordinating with regional implementing entities and other partners, (5) strengthening regional multistakeholder platforms. These points are elaborated further in the following paragraphs.

#### ***5.1.1 Coordinating the three sectors at policy- and decision-making levels***

As described earlier, one of the challenges of promoting the WEF nexus approach in the SADC region is the sector-focused policies and institutions with inadequate coordination mechanism. The SADC Regional WEF Nexus Framework is expected to provide the guidance on how to strengthen coordination between the three sectors in developing and reviewing policies, plans, and strategies through establishing a Joint WEF Ministers' Committee in the SADC Governance Structure.

#### ***5.1.2 Coordinating the three sectors at the regional technical level***

The SADC region generally has sector-focused and uncoordinated plans and targets. The SADC Regional WEF Nexus Framework is expected to provide the guidance on how to develop and implement integrated plans and programs to achieve water, energy, and food security targets while sustaining natural resources management. This will be achieved through establishing a Joint WEF Technical Committee with support from the SADC WEF Working Group at the SADC Secretariat.

#### ***5.1.3 Coordinating the Units responsible for the WEF sectors within the SADC Secretariat***

One weakness identified at the SADC Secretariat is inadequate coordination between the directorates and between the units that are responsible for the water, energy, and food security sectors. The SADC Regional WEF Nexus Framework is expected to improve the coordination of the units responsible for WEF sectors at the SADC Secretariat through establishing an SADC WEF Working Group.

#### ***5.1.4 Coordinating with regional implementing entities and other partners***

Another challenge identified is inadequate coordination of the programs and activities of the SADC implementing entities and other partners. The SADC Regional WEF Nexus Framework is expected to improve coordination of the programs and activities by SADC's subsidiary entities and other partners



through establishing an SADC WEF Working Group. The SADC Secretariat will also provide guidance and technical support (including WEF Nexus project screening tool) to such entities and partners.

### **5.1.5 Strengthening regional multistakeholder platforms**

Broadening the existing regional multistakeholder platforms to include the three sectors and other relevant stakeholders is an important requirement for promoting the WEF nexus approach. The SADC Regional WEF Nexus Framework is expected to provide a wider forum with a balanced representation of water, energy, and agriculture sectors through establishing an SADC regional WEF nexus multistakeholder forum.

In summary, the SADC regional policies and strategies provide the overall enabling environment in adopting the WEF nexus approach in the region. This will include the SADC regional overarching treaties, policies, strategies, programs, or the decisions of the SADC Council of Ministers. It also includes the water, energy, and agriculture sectoral policies, strategies, and programs.

The existing SADC governance structure provides the institutional framework for coordinating the development and implementation of policies related to water, energy, and food security sectors. The WEF Nexus Working Group under the SADC Secretariat provides an overall secretariat function and plays technical coordination role. The Joint WEF Technical Committee is not a new structure. It is mainly organizing joint meetings of the existing technical committees for water, energy, and agriculture sectors. Similarly, the Joint WEF Ministers' Committee is also organizing joint meetings of the Ministers responsible for water, agriculture, and energy. The Water and Energy Ministers meetings are already organized as joint meetings. It is important to note that the Ministers of water, energy, and agriculture may agree to form a joint Ministerial Committee to facilitate their work. The same approach may be followed at regional technical committee levels. The decisions of the SADC Council of Ministers provide the highest level of strategic or policy guidance on WEF nexus issues.

The SADC regional WEF nexus multistakeholder forum provides a platform for multisectoral engagement in the region. This is also not a new structure. It is mainly widening the existing SADC Water Sector multistakeholder dialogue to include stakeholders from the energy and agriculture sectors.

## **5.2 Implementing the SADC regional WEF nexus framework**

Implementing the SADC Regional WEF Nexus Framework requires undertaking of some actions toward achieving the following.



### **5.2.1 *Coordinating the three sectors at policy- and decision-making levels***

Strengthening coordination between the three sectors in developing and reviewing policies, plans, and strategies requires the formation of a Joint WEF Ministers Committee in the SADC Governance Structure. The Meeting is expected to provide policy guidance regarding the WEF nexus approaches in the region and regarding the implementation of the Nexus Framework.

### **5.2.2 *Coordinating the three sectors at the regional technical level***

Developing and implementing integrated plans and programs to achieve water, energy, and food security targets while sustaining natural resources management requires the establishment of a regional-level technical coordinating structure. The Regional WEF Nexus Framework recognizes the formation of a Joint WEF Technical Committee to provide technical clearance service on WEF nexus related initiatives in the region and advise the WEF Ministers to take appropriate decisions.

### **5.2.3 *Coordinating the units responsible for the WEF sectors within the SADC secretariat***

The key coordination mechanism considered by the Regional WEF Nexus Framework at the SADC Secretariat level is the formation of a WEF Working Group at the SADC Secretariat. This arrangement is expected to improve the coordination of the units responsible for WEF sectors at the SADC Secretariat. The main functions of the Working Group are facilitation, coordination, and monitoring.

### **5.2.4 *Coordinating with regional implementing entities and other partners***

The establishment of a WEF Nexus Working Group at the SADC Secretariat is also expected to improve coordination of the programs and activities by SADC's subsidiary entities and other partners. The SADC Secretariat, through the Working Group, will provide guidance and technical support (including use of the WEF Nexus project screening tool) to the regional subsidiary entities and other partners. The guidance will cover how to integrate the WEF nexus approach in programs and align with the SADC development agenda. Other functions of the Secretariat will be providing MS with guidelines, tools, information, and strengthening their capacities. It will also facilitate experience and knowledge sharing on WEF nexus issues.

### **5.2.5 *Strengthening regional multistakeholder platforms***

The WEF nexus approach requires a multistakeholder and multisectoral dialogue platform. The SADC Regional WEF Nexus Framework considered the strengthening of an SADC regional WEF nexus multistakeholder forum.

### 5.3 SADC WEF nexus screening tool for guiding discourse in the region

A WEF Nexus Investment Projects Screening Tool was developed for SADC based on the conceptual framework that defined the WEF nexus parameters for the region. The tool was used in identifying and screening investment projects that have WEF nexus potential. A long list of projects was identified as projects where the nexus approach could be applied. The sources of the projects were from the SADC regional development Master Plans, Sectoral Programs, Basin Programs, or country prioritized projects. The Tool (web-based) was tested by the SADC MS and is expected to support SADC in identifying nexus opportunities of investment projects in the region. A list of 15 potential projects for applying WEF nexus approach was prioritized for further nexus analysis to improve the quality of the projects to attract funding for implementation.

### 5.4 Capacity development and guiding discourse in the region

Capacity building of regional stakeholders engaging closely with the WEF nexus approach is required, especially on conducting WEF nexus analyses and using the WEF nexus approach to inform decision-making. Furthermore, the documenting of regional case studies to facilitate the practical learning and regional knowledge sharing of WEF Nexus applications will be critical to achieve stakeholder buy-in.

Phase II of the SADC Nexus Dialogue Project on “Fostering Water, Energy and Food Security Nexus Dialogue and Multi-Sector Investment in the SADC Region” places a particular focus on strengthening capacity of stakeholders at both the regional and national levels for planning, policymaking, and implementation of the WEF nexus approach. From 2020 to 2023, the project will endeavor to organize regional trainings and 16 country WEF Nexus Dialogues to support the establishment of governance structures that will enable the integration of a nexus approach at national decision-making levels.

Furthermore, phase II of the project aims to develop Regional WEF Nexus Guidelines to support implementing agencies at the national, regional, and transboundary levels on how to integrate the WEF nexus in investment planning and project preparation. The Regional Guidelines will make use of case studies within the SADC region to practically demonstrate and provide technical guidance and support required to identify and prioritize WEF nexus investment projects and facilitate the operationalization of the WEF nexus in the SADC region.

## 6. Key lessons from the implementation of the SADC WEF nexus regional dialogues project

The results expected from implementing the EU supported SADC Regional WEF Nexus Dialogue Project were successfully achieved. The SADC Regional WEF Nexus Framework was developed and endorsed by the SADC Ministers responsible for water, energy, and food security in 2020. A list of 15 investment projects (with brief project profiles) that have potential for applying WEF nexus approach was also developed.

The WEF Nexus approach is gaining momentum in the SADC region. WEF nexus is understood as an approach to facilitate better interactions and synergies between the water, food, and energy sectors to unlock and optimize the development potential for economic growth and transformation in the region. Discussions on the WEF nexus are going on at higher SADC governance structures. In 2018 and 2019, WEF nexus was discussed at SADC Water, Energy, and Agriculture Ministerial levels. The SADC Council Decisions in August 2018 called for strengthened collaboration among water, energy, and food sectors.

The approach is also being embraced by the SADC RBOs. The 8th SADC RBOs workshop in 2018 recognized the WEF nexus as an approach to facilitate investment at basin level. Moreover, the 3rd Zambezi Basin Stakeholders' Forum in 2018 discussed the role of the WEF nexus approach at river basin level, specifically at Zambezi river basin.

The main lessons learned from implementing the SADC Nexus Dialogue Project is that adopting a WEF nexus approach is a long process that requires the following:

- Defining the scope and objectives of the nexus approach: SADC defined the conceptual understanding and objectives of the nexus approach
- Securing political support for the nexus approach: SADC provided high-level political support for the WEF nexus approach establishing and facilitating a continuous multistakeholder/sectoral dialogue/engagement: the SADC regional multistakeholder dialogues provided useful platforms
- Building on existing structures rather than creating new ones. The SADC regional framework was building on the existing SADC structures.
- Considering capacity building as part of the intervention.

## 7. Summary and conclusions

The WEF nexus in the SADC region is understood as an approach to facilitate better interactions and synergies between the water, food, and energy sectors to unlock and optimize development potential for economic growth and

transformation in the region. The WEF nexus approach also presents opportunities for greater resource coordination, management, and policy convergence across sectors. SADC expects the WEF nexus approach to enhance investment in the region.

The SADC has developed a regional WEF Nexus Framework that will drive implementation of the WEF nexus approach toward integrated planning and development among the water, energy, and food security sectors in the SADC region.

It is strongly believed that the next WEF nexus initiatives will build on the achievements of the project. It is expected that the Regional Nexus Dialogue Project Phase II will focus around supporting MS in embracing the WEF nexus approach and operationalizing the SADC regional Nexus Framework. It is also expected that the other regions in Africa and the African Union will take similar initiatives with contribution from the SADC region through sharing its experience.

In conclusion, the implementation of the Regional Nexus Dialogue Project in the SADC region was very successful in achieving its goal of establishing an enabling framework for WEF nexus in the region, and in identifying investment projects with potential for nexus application. These results, together with the high-level political support, will provide a solid foundation for implementing the nexus approach in the region. The success of this project has attracted a lot of interest not only from the SADC MS but also from the other regions in Africa and beyond.

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