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nexus



Nexus Dialogue Program

SADC Regional Nexus Dialogue Project: Achievements of Phase I

3rd Executive Committee Meeting & Partners Meeting

Nexus Dialogue Programme- Phase I

05-06 June 2019, Bonn, Germany





- 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

- Draft Regional WEF Nexus Framework
- Draft WEF Nexus Project Screening/appraisal Tool
- Draft List of investment projects

- WEF Nexus Framework
- Action Plan for implementation

- Nexus Framework Document Adopted

SADC Joint Energy and Water Ministers - June 2018
SADC Agri. Ministers

SADC Council Decision (Aug 2018)

SADC Joint Energy and Water Ministers - May 2019
SADC Agri. Ministers



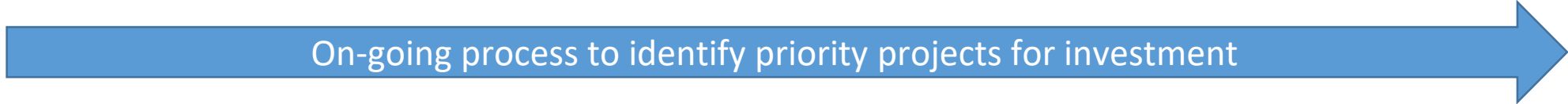
Jan – May 2017

Nov. 2017

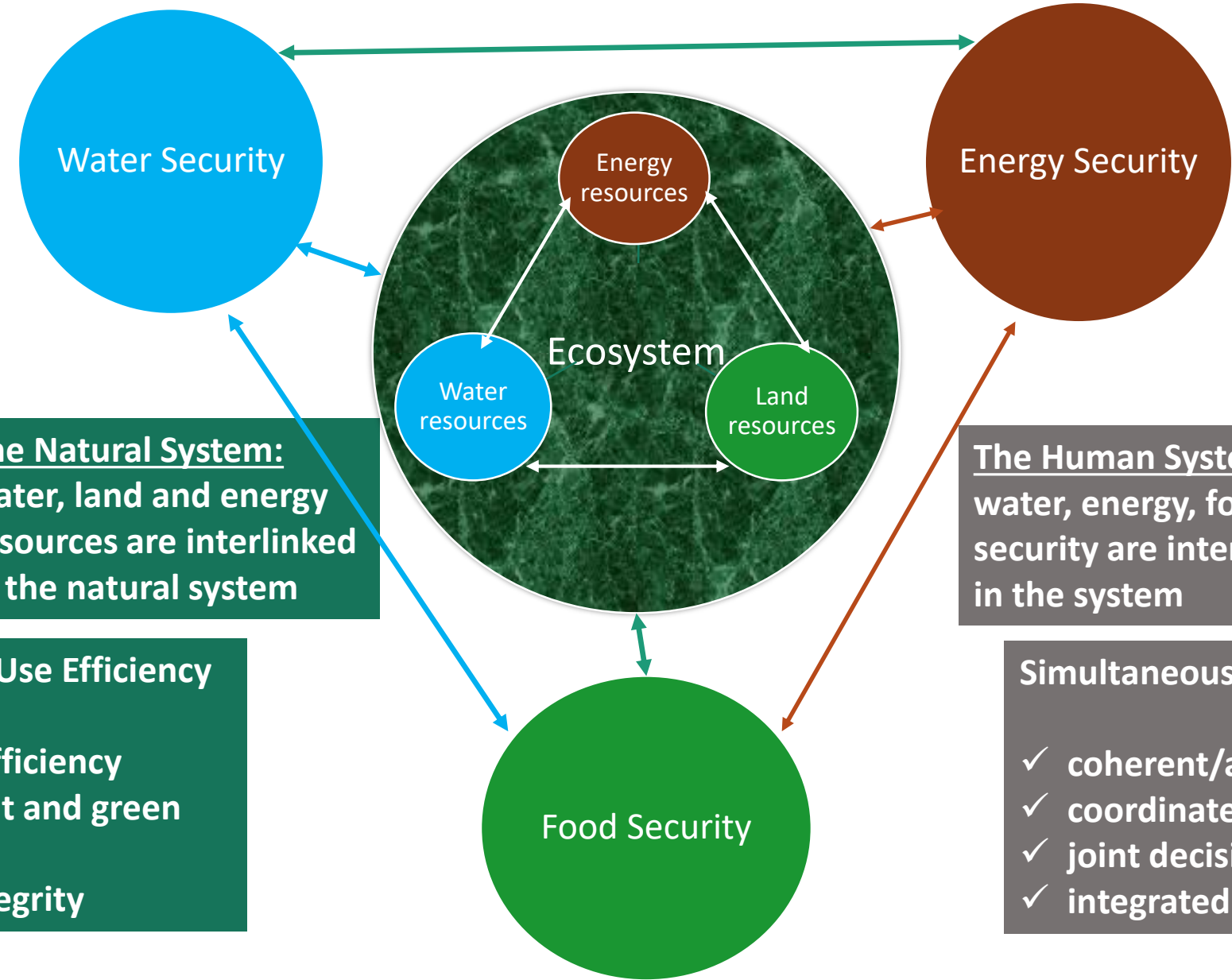
Nov 2018

March 2019

August 2019



WEF Nexus in the SADC: understanding the WEF Nexus approach

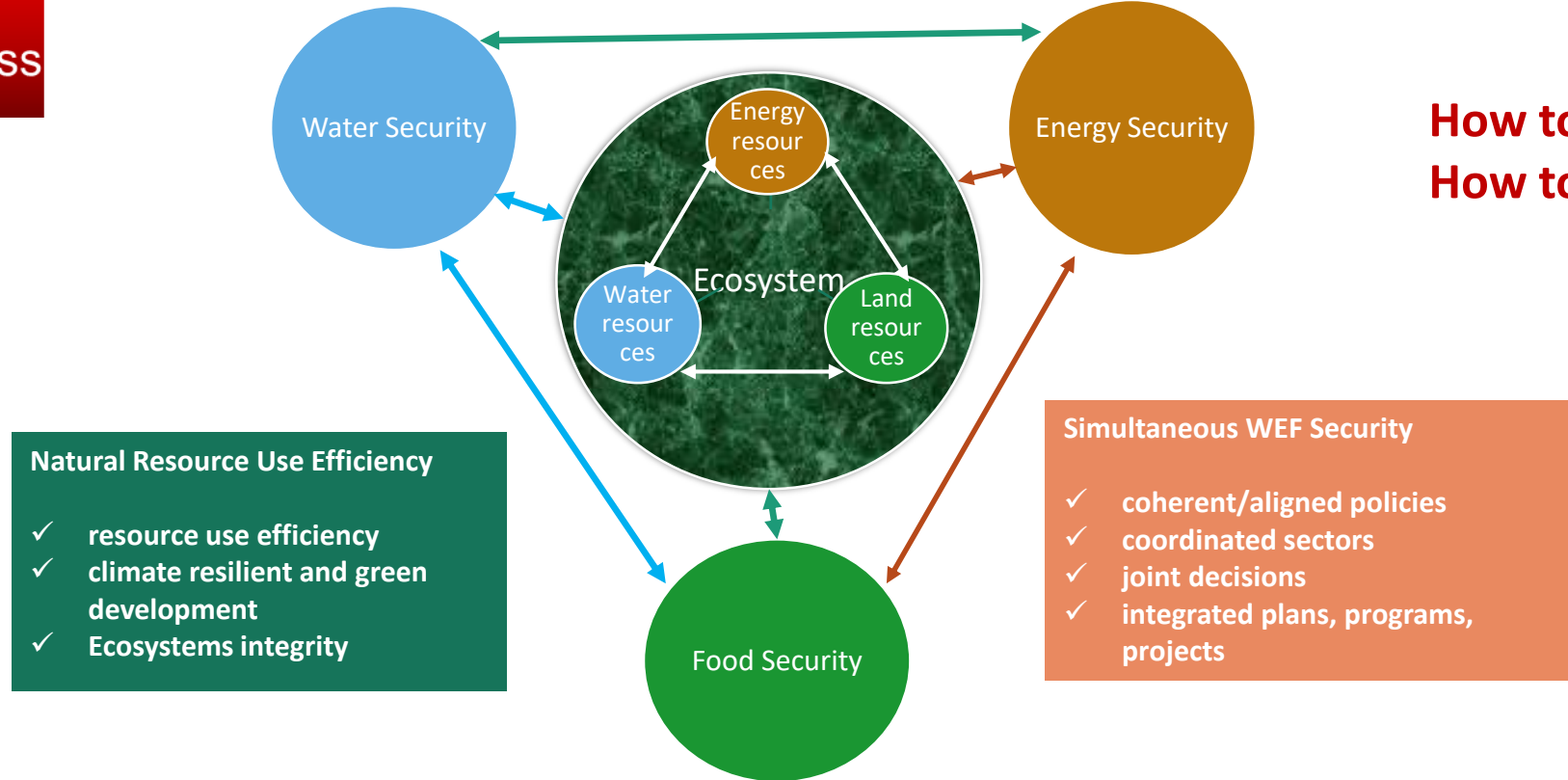


The Natural System:
 water, land and energy resources are interlinked in the natural system

The Human System:
 water, energy, food security are interlinked in the system

- Natural Resource Use Efficiency**
- ✓ resource use efficiency
 - ✓ climate resilient and green development
 - ✓ Ecosystems integrity

- Simultaneous WEF Security**
- ✓ coherent/aligned policies
 - ✓ coordinated sectors
 - ✓ joint decisions
 - ✓ integrated plans, programs, projects



**How to manage trade-offs?
How to increase synergies?**

How to achieve both objectives?

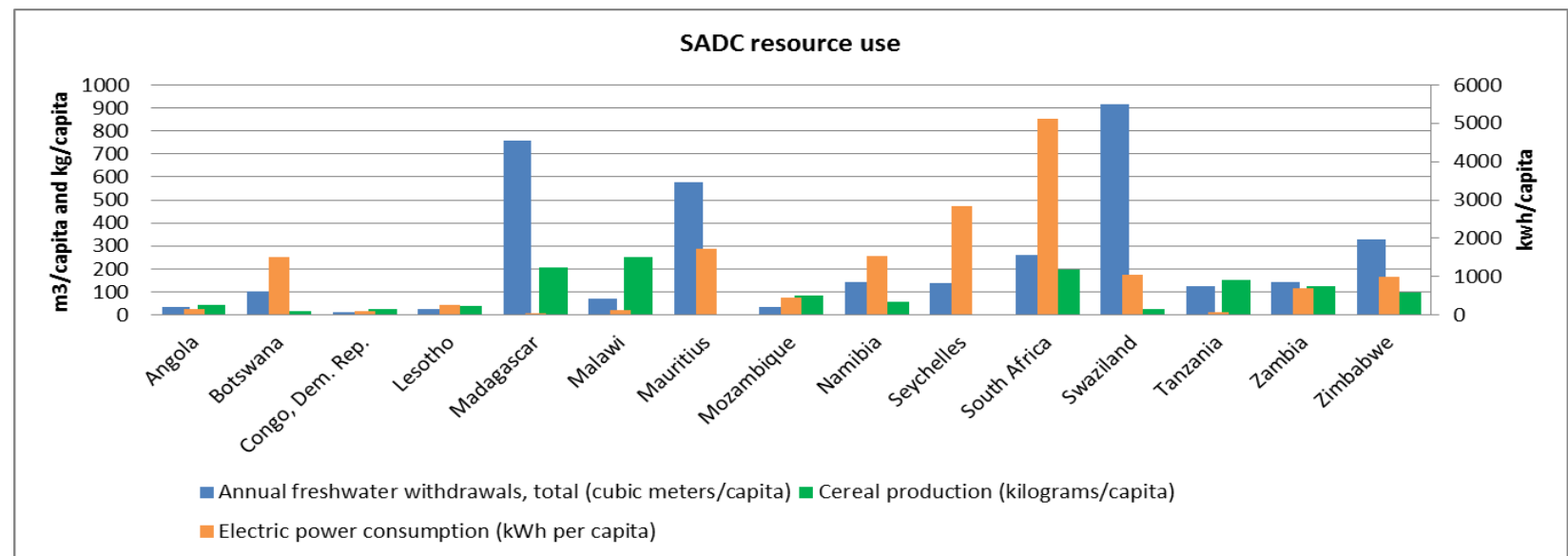
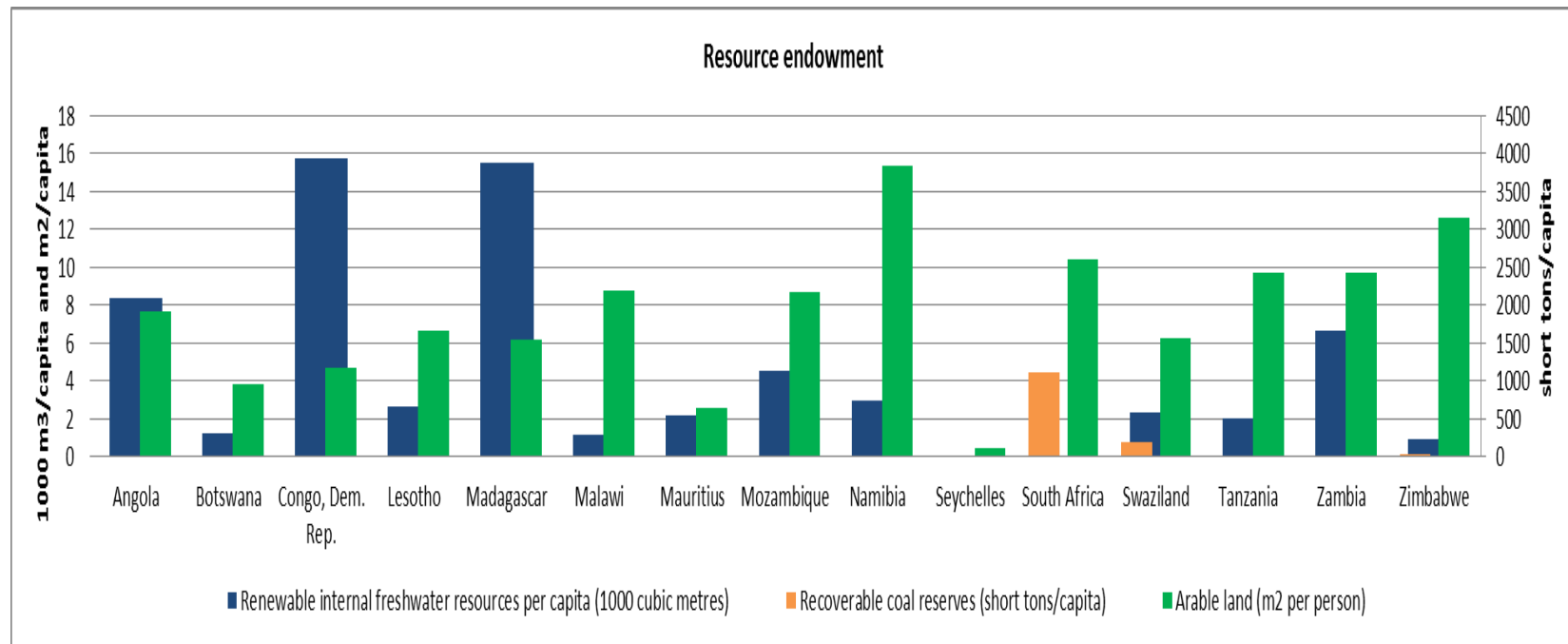
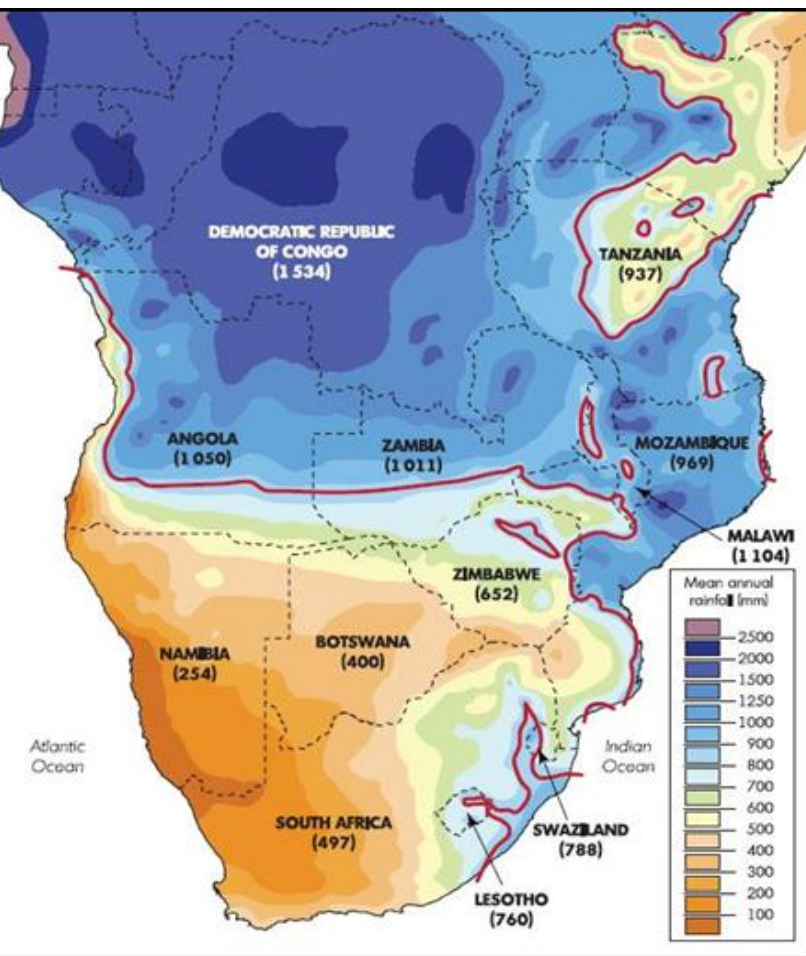
Investment

WEF Nexus Governance

SADC WEF Nexus tool to screen and appraise investment projects

SADC WEF Nexus Governance Framework

The SADC Regional Context: uneven distribution of WEL resources



Technical Process The SADC Regional Context: Sectoral Policies/Strategies/Plans/Programs

Water	Energy	Food
<ul style="list-style-type: none"> ▪ Regional Protocol on shared Watercourses (2000) ▪ Regional Water Policy (2005) ▪ Regional Water Strategy (2006) ▪ Regional CCA Strategy (2011) ▪ Guidelines (RBOs, Protocol implementation –regional & Basins) <p style="text-align: center;">(IWRM)</p>	<ul style="list-style-type: none"> ▪ SADC Protocol on Energy (1996) ▪ Regional Energy Access Strategy and Action Plan (REASAP) (2010) ▪ Energy Sector Plan 2012 - 2027 –part of RIDMP ▪ Renewable Energy and Energy Efficiency Strategy and Action Plan (REEESAP) 2016; ▪ Market & Investment Framework for SADC Power Projects (2016); ▪ SAPP Power Generation and Transmission Master Pan (SAPP Pool Plan) 2017 – 2040 <p style="text-align: center;">(EW)</p>	<ul style="list-style-type: none"> ▪ Regional Agricultural Policy (RAP) (2014) ▪ Regional Agricultural Investment Plan (2017-2022-draft) ▪ SADC Food and Nutrition Strategy (2015-2025) (2014) ▪ Regional Agricultural Fund <p style="text-align: center;">(FW)</p>

- SADC Regional Indicative Strategic Development Plan (RISDP)-
- The Regional Infrastructure Development Master Plan (RIDMP) (2012)
- The SADC Industrialisation Strategy and Roadmap (2015-2063) (2015).-
- Climate Change adaptation strategy (CCAS)(2012) for the water sector – building resilience

The SADC Regional Context: Sectoral Institutional Arrangements

Water	Energy	Food
<ul style="list-style-type: none"> ▪ SADC Water Ministers ▪ Water Resources Technical Committee ▪ Sub-Committees [S-Water, G-Water, WQ] ▪ Subsidiary Organisations ▪ Sub-Regional: Shared Watercourse Institutions <ul style="list-style-type: none"> ▪ Water Governance ...RBOs ▪ Joint Transboundary Project Cooperation : RBAs ▪ National: Departments of Water Affairs 	<ul style="list-style-type: none"> ▪ SADC Energy Ministers ▪ Energy Technical Committee ▪ Subsidiary organizations- RERA, SACREEE, SAPP ▪ National: Departments of Energy 	<ul style="list-style-type: none"> ▪ SADC Agriculture... Ministers ▪ Agri Technical Committee ▪ Subsidiary organizations- CARDESA ▪ National: Departments of Agriculture



SADC RIDMP (2012-2027)

Sectors	Potential	Baseline (2012)	Targeted Plan (2027)
1. Hydropower	150 GW	12 GW	Increase to 75 GW (50% of the sector's potential)
2. Irrigation	50 M has	3.4 M has	Increase to 10 M has (13% of the potential land available)
3. Water Storage: Annual renewable WR	2,300 km ³	14% retained	Increase to 25%
4. Access to Safe drinking water		61%	Increase to 75%
5 Access to Safe sanitation		39%	Increase to 75%

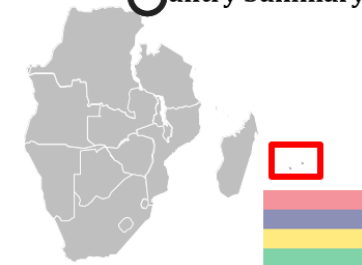
1st Technical Dialogue (Nov 2017): defined scope & approach for Country WEF Nexus Assessments

- *WEF Nexus understanding*
- *Clarity on country WEF nexus assessments*
- *Support for country WEF assessment processes*

✓ The country WEF nexus assessments reviewed the existing enabling environments for the WEF Nexus approach and identified challenges and opportunities for applying the WEF nexus approach in the member states.



SADC Water-Energy-Food Nexus Country Summary – Republic of Mauritius



Population/Growth rate:	1.27 Mil. (2017) / 0.1%
Urban Population	40.48 % (2017)
Land area / Exclusive Economic Zone	3,169 km ² / 2.3 Mil. km ² (land/Ocean)
GDP /GNI Per capita*	13.27 Billion USD (2017) / 9,770 USD (2016)
Human Development index (HDI)	0.790 (2018), Rank 65 of 189

* GNI - gross national income

Current Economic Pillars: agriculture, manufacturing, finance, services, global offshore businesses, ~~freepor~~ 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 ~~surface~~ water 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

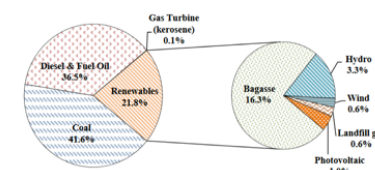


Figure1: Energy Sources % of Electricity Production (2016)

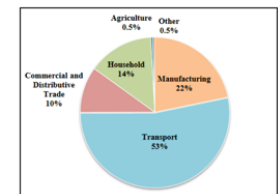
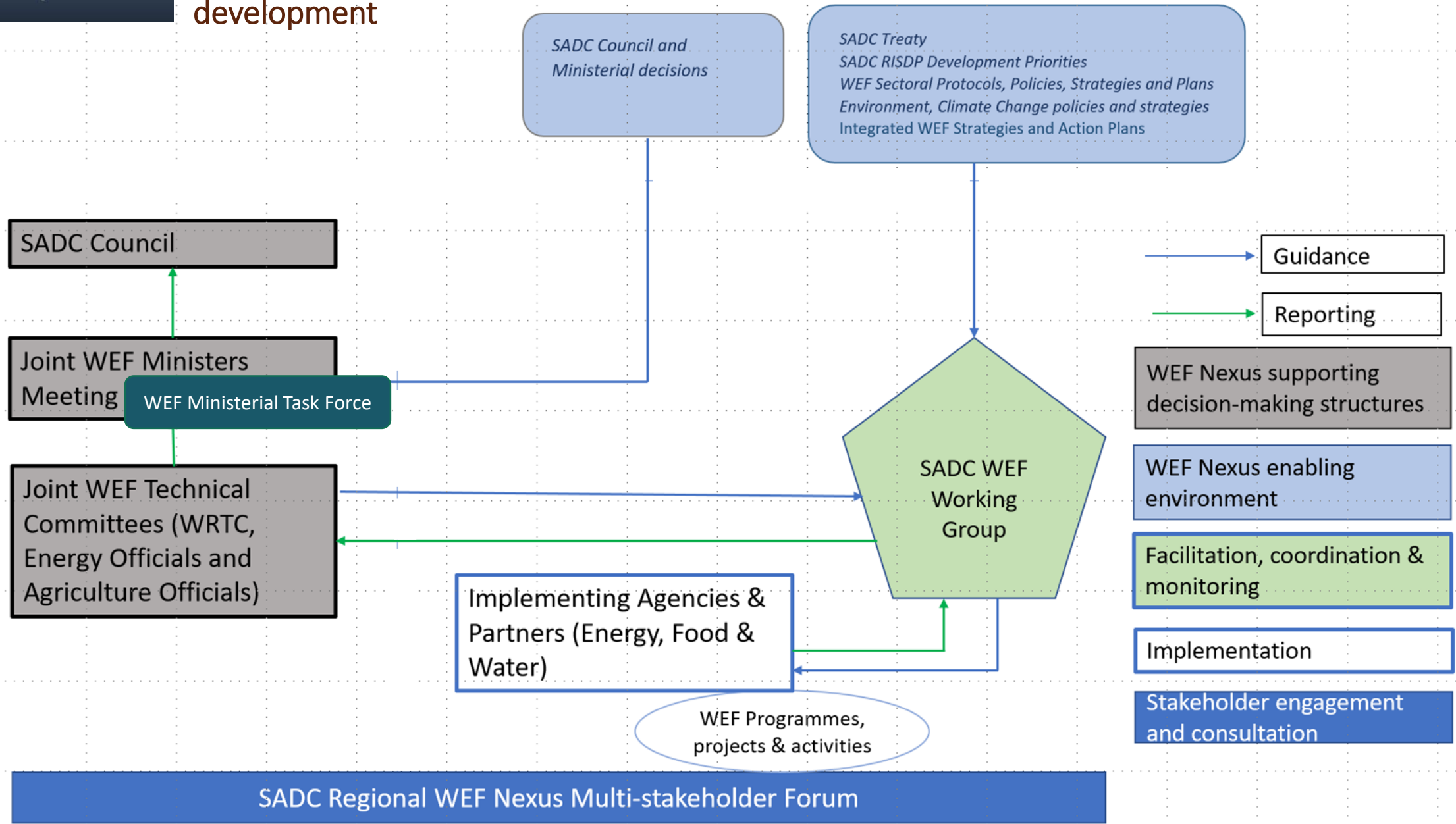


Figure 2: Energy Consumption by Sector (2016)

- 1 There are areas for applying WEF Nexus approaches in the 15 Member States
 - National Development Plans (NAPs)/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
- 2 There are some challenges in promoting the WEF Nexus approach at country level
 - Inadequate coordination b/n sectors
 - Limited capacity for WEF Nexus
 - Limited awareness

Discussion Paper: SADC WEF Nexus Framework to guide regional integrated planning and development



4 Project appraisal (BCA)

3 Project impact assessment & prioritisation based on a multi-criteria decision support framework

2 Project screening for WEF Nexus based on a decision tree-identifies nexus opportunities

1 Project identification and description

0 Project long list

Complexity of analysis and data requirement

▪ Considering other decision making parameters (BCA)

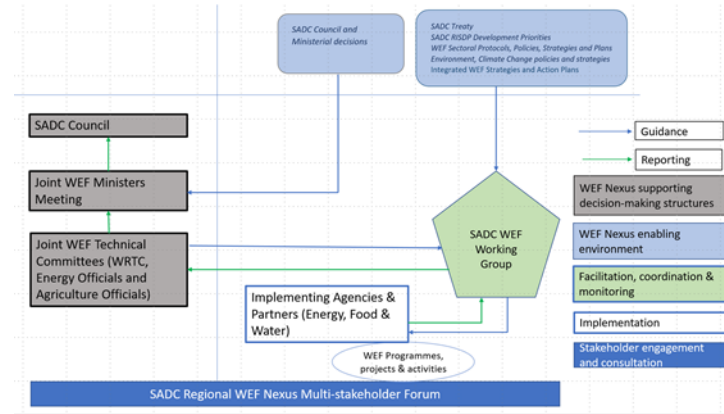
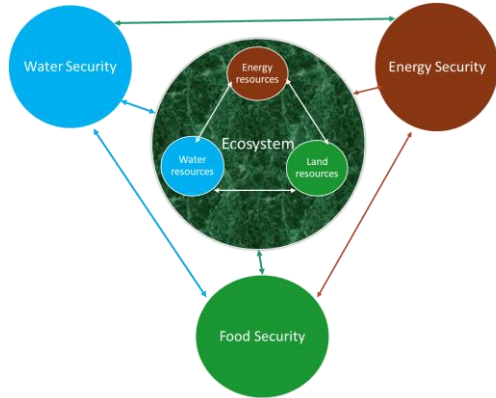
▪ The relative impact of projects for WEF assessed (weighting parameters)
Eg. How much will the project contribute to improved energy efficiency? MCDA

▪ WEF opportunities of projects identified (trade offs & synergies)
▪ Eg. Will this project contribute to improved energy use efficiency? Yes/No.
▪ **Preliminary feedback to project owners.**

▪ Project information/data fed
▪ Projects described

SADC WEF Nexus Project Screening and Appraisal Tool

SADC WEF Nexus Framework



- 6 Appraisal results
- 5 Project appraisal (BCA)
- 4 MCDA results
- 3 Project prioritisation
- 2 Project screening





- Increased WEF Nexus understanding, especially on the natural system integration-ecosystems for WEF security
- SADC WEF Nexus project launched
- Consultation with various stakeholders and partners

8th SADC Multi-Stakeholder Water Dialogue (Nov 2017, South Africa) *“Fostering regional value chains and job creation through the Water-Energy-Food Nexus Approaches”*



- Increased WEF Nexus understanding
- Role of nexus approaches to foster regional value chains and job creation-investment
- Consultation with various partners/ stakeholders

8th World Water Forum (March 2018, Brazil): WEF Nexus in the Africa Regional Process

WEF in the Africa Regional Report and Africa Regional Process of the 8th World Water



The Session on *“WEF Nexus: potential applications and lessons from Africa”* was convened by SADC, GWP and AU during the Forum in Brazil.

8th SADC RBOs Workshop (May 2018, Namibia)

Securing strategic investments to realize the benefits of transboundary water cooperation



WEF Nexus approach to help SADC RBOs in facilitating investment for transboundary cooperation and WEF security

3rd Zambezi Basin Stakeholders' Forum 8-9 October 2018, Malawi

WEFE Nexus approach for socio-economic benefits in the Zambezi River Basin



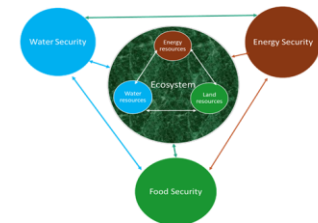
Input for developing a regional WEF Nexus Framework and a Project Screening Tool

9th SADC Multi-Stakeholder WEF Dialogue (Mar. 2019, South Africa)

Promoting the WEF Nexus approach and youth empowerment for sustainable development



- Raised WEF Nexus approach-conceptual framework
- Draft SADC WEF nexus framework reviewed
- Draft Nexus tool introduced
- Draft list of projects introduced



SADC Member States Workshop on WEF Nexus
25th March 2019



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- Preliminary Regional level WEF analysis

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SADC Council Decision (Aug 2018)

SADC Joint Energy and Water Ministers - May 2019
SADC Agri. Ministers

7th SADC RBOs Workshop

Jan – May 2017

8th SADC Multi-stakeholder Dialogue and 1st WEF Nexus Technical Dialogue

Nov. 2017

2nd WEF Nexus Technical Dialogue

Nov 2018

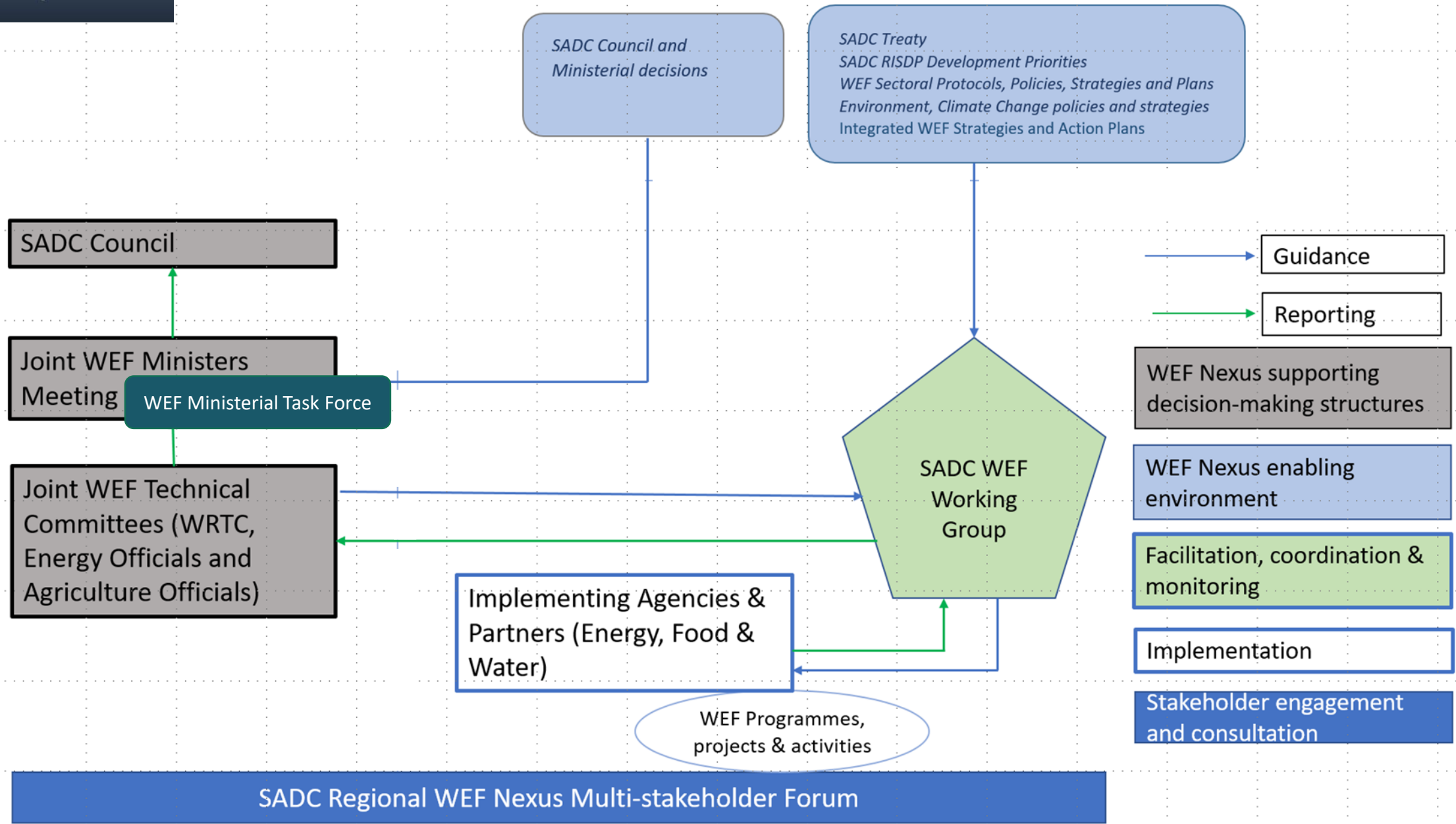
WEF Nexus Workshop and 9th SADC WEF Nexus Dialogue

March 2019

Council of Ministers Meeting and Summit

August 2019

On-going process to identify priority projects for investment



SADC WEF Nexus Tool for Project Screening and Appraisal

4 Project appraisal (BCA)

3 Project impact assessment & prioritisation based on a multi-criteria decision support framework

2 Project screening for WEF Nexus based on a decision tree-identifies nexus opportunities

1 Project identification and description

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Complexity of analysis and data requirement

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- The relative impact of projects for WEF assessed (weighting parameters)
Eg. How much will the project contribute to improved energy efficiency? MCDA

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- **Preliminary feedback to project owners.**

- Project information/data fed
- Projects described

Criteria applied in identifying projects for high level WEF Nexus screening

Criteria	Remarks
1. Project Objectives	<ul style="list-style-type: none"> Projects that have objectives of contributing to WEF security and/or WEL resource use efficiency. Eg. Multit-purpose projects or a single-purpose project with potential of meeting additional objective(s)
2. Relevance: regional & national priorities	<ul style="list-style-type: none"> Projects that are prioritized at regional level, and also prioritized or supported by countries (project countries) Eg Projects prioritized in SADC's RIDMP
3. Potential for WEF Nexus approach	<ul style="list-style-type: none"> Projects that have potential to explore additional opportunities beyond their main objective(s) Eg. An energy project may have potential for meeting food security and water objectives
4. Potential to attract funding	<ul style="list-style-type: none"> Projects that have potential to be bankable/attract investment after being enhanced through a WEF Nexus approach. Eg attractive for private sector investment
5. Climate resilience and sustainable development	<ul style="list-style-type: none"> Projects that have potential to contribute to building climate resilience of investment and ecosystems.
6. Regional/transboundary cooperation	<ul style="list-style-type: none"> Project that have potential to facilitate regional/transboundary cooperation towards meeting WEF security and resources use efficiency
7. Project co-benefits	<ul style="list-style-type: none"> Projects that have other co-benefits as Nexus approach opens new opportunities for society
8. Project Phases and Types	<ul style="list-style-type: none"> Projects that are at project preparation phases (initial studies, pre-feasibility study, feasibility study) and representation of types (scale and complexity)

Project Info compiled for 15 projects: Eg. Songwe RBDP

Project Summary	<ul style="list-style-type: none"> ▪ a multipurpose dam and other components ▪ Energy generation (180 MW hydropower) ▪ water supply and sanitation services (86,000 town and 36,000 village people) ▪ reduce frequency of floods and risks of overtopping of flood plain ▪ crop production (irrigate 6,000ha of land-3000has for each country) ▪ strengthen cooperation in transboundary WRM
Location	<ul style="list-style-type: none"> ▪ Songwe River Basin (Malawi & Tanzania)
Status:	<ul style="list-style-type: none"> ▪ A 10 year basin development program prepared. ▪ Strategic Environmental and Social Impact Assessment (SISA), ESIA, ESMP, and Resettlement Action Plan (RAP) ▪ Economic analysis and costing of the priority investment projects carried out. ▪ Feasibility Study and Detailed Design of priority investment projects done. ▪ Joint (Tanzania/Malawi) River Basin Commission established
Cost	<ul style="list-style-type: none"> ▪ Investment cost: USD 829 Million ▪ Study cost: about USD 10 Million
Relevance: regional & national priorities	<ul style="list-style-type: none"> ▪ One of the regional projects identified for implementation under the SADC RIDMP ▪ The two countries committed, including financial contributions for the studies
Potential for WEF nexus approach	<ul style="list-style-type: none"> ▪ The project has DRM, water supply, energy and agriculture objectives. This requires analysis of trade-offs and synergies between the different objectives vis-à-vis the resource endowments. ▪ WEF Nexus Analysis during detail designs and feasibility studies-irrigation and water supply
Current Funding status	<ul style="list-style-type: none"> ▪ Feasibility Study by the Nordic Development Fund (NDF), and Malawi and Tanzania ▪ AfDB/AWF & NEPAD-IPPF financed the detailed design and investment preparation (2012-2015) ▪ DFID/UK AID, through CRIDF supported Economic analysis and costing of the priority investment projects. ▪ GEF provided a grant for Transboundary Cooperation and Integrated NRM
Potential funding opportunities	<ul style="list-style-type: none"> ▪ Blended financing strategy for actual investment (private& public sector investment, Bank Loans, Development Grants) was considered. AfDB hired a Public-Private Partnership (PPP) Transaction Advisor. ▪ A funding gap (about USD3 Million) to complete irrigation and water supply feasibility and detail design studies

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

1. A High level political ownership:

- ✓ SADC defined the conceptual understanding and objectives of the Nexus approach.
- ✓ SADC took the WEF nexus discussions at higher levels—SADC Council of Ministers, SADC Ministers for Water, Energy and Agriculture
- ✓ SADC is establishing a regional framework for integrated planning/action in the WEF sectors

2. **A continuous multi-stakeholder/sectoral dialogue/engagement:** The SADC process built on the existing regional dialogues...from water to WEF,

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. More awareness.. was lacking in the current phase of the project

5. A WEF Nexus approach to **support investment** (WEF security): **Demonstrating** the approach at investment project level. More capacity support for country level interventions

6. **WEF Nexus approach and other partners:** financing, implementing....blended financing arrangements

Initial Ideas for SADC Phase II

N	EU strategy for Nexus Phase II	Key issues/lessons/opportunities from Phase I SADC Nexus Project	SADC Nexus Phase II proposed components
1	High quality and high impact projects	<ul style="list-style-type: none"> ▪ WEF Nexus approach to improve quality of projects in the SADC region to attract investment/ financing 	<ul style="list-style-type: none"> ▪ Implementing WEF Nexus approach in prioritized 2/3 regional projects
2	Consider EU Blending Facilities and Development Financing Institutions (DFIs)- EU External Investment Plan	<ul style="list-style-type: none"> ▪ Screening projects that may attract different investors ▪ Screening projects that are prioritized at regional and national level 	<ul style="list-style-type: none"> ▪ Developing pipeline of projects for further consideration targeting other EU and non-EU financing sources
3	Sustainability of WEF nexus initiatives <ul style="list-style-type: none"> ▪ WEF Nexus value proposition and financing strategy ▪ Lessons from phase I 	<ul style="list-style-type: none"> ▪ SADC WEF Nexus Framework ▪ High level political support ▪ Nexus Project Screening Tool ▪ Nexus Dialogue Forum ▪ Sensitization going on with Member States...country perspective papers 	<ul style="list-style-type: none"> ▪ Strengthen the WEF Nexus coordination, facilitation and monitoring functions of the SADC Secretariat ▪ Sustain the regional WEF Nexus dialogue forums ▪ Provide support to Member States on WEF Nexus approach
4	Capacity building, Nexus resource platform	<ul style="list-style-type: none"> ▪ Need to work more on awareness/ sensitization, capacity building 	<ul style="list-style-type: none"> ▪ Capacity building and sensitization a key component targeting Member States and other partners
5		<ul style="list-style-type: none"> ▪ Regional approach in the SADC region 	<ul style="list-style-type: none"> ▪ Review RIDMP considering the WEF nexus approach ▪ Support development of new plans ▪ Support Basin investment planning

Conclusion: The WEF Nexus in the SADC Region

1. Understanding and appreciation about the WEF Nexus approach is increasing in the SADC region, mainly due to the regional multi-stakeholder dialogues
2. There is a high level political support for the Nexus approach: the SADC Council Decision (Aug 2018)..called for strengthened collaboration between Water, Energy and Food Sectors. SADC Ministers for Water, Energy and Agriculture embracing it
3. Clear areas where the WEF Nexus approach help the SADC Region and its member states:
 - Integrated planning for resource-use efficiency and for WEF security
 - Institutional coordination & aligning implementation of WEF policies
 - Enhancing investment (financing) for regional development
4. More sensitization on the Nexus thinking, and capacity building for Nexus analysis required



Thank you for your attention!