

CCARDESA

Centre for Coordination of Agricultural Research and Development for Southern Africa



Medium - Term Operational Plan (MTOPIII) for 2025 - 2029





MEDIUM - TERM OPERATIONAL PLAN (MTOP) III FOR 2025 - 2029

Center for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA)

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About CCARDESA

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) was founded by SADC member states to harmonise the implementation of agricultural research and development (R&D) in the SADC region. CCARDESA intends to address agricultural research and design issues in the SADC region through the following interventions:

- Coordinating implementation of regional agricultural R&D programmes
- Facilitating collaboration among stakeholders of the national agricultural research systems (NARS)
- Promoting public – private partnerships in regional agricultural R&D
- Improving agricultural technology generation, dissemination and adoption in the region through collective efforts, training and capacity building

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ABBREVIATIONS AND ACRONYMS

Abbreviation	Meaning
AR4D	Agricultural Research for Development
CCARDESA	Centre for Coordination of Agricultural Research and Development for Southern Africa
ESS	Environmental and Social Safeguards
FARA	Forum for Agricultural Research in Africa
ICKM	Information, Communication and Knowledge Management
ICP	International Cooperation Partner
ICT	Information and Communication Technology
LTS	Long Term Strategy
LTSP	Long-Term Strategic Plan
M&E	Monitoring and Evaluation
MOU	Memorandum of Understanding
MTOPIII	Medium-Term Operational Plan
NARES	National Agricultural Research and Extension System
NARS	National Agricultural Research System
R&D	Research and Development
SADC	Southern Africa Development Community
SDG	Sustainable Development Goal
SSA	Sub-Saharan Africa
ToC	Theory of Change

FOREWORD



I am grateful to present to you the CCARDESA Medium-Term Operational Plan (MTOPIII) (2025 -2029), which was revised to consider global, continental and regional trends affecting food systems. These events include the geo-political conflicts and the COVID-19 Pandemic, which affected availability of agricultural inputs as well as the need to bring out prominently some areas which were poorly covered by past CCARDESA programmes and interventions. These include forestry, fisheries and aquaculture as well as livestock.

The MTOPIII is organized according to the 6 thematic areas outlined in the recently revised CCARDESA long-term Strategy (LTS) (2020 -2029). The MTOPIII also has the same goal, vision and mission as outlined in the LTS. Besides being structured similarly to the LTS, the MTOPIII includes more details on proposed main activities and sub-activities and their respective outputs that can be implemented under each strategic objective for each Thematic Area over a period of 5 years. There is also an estimated budget for implementing the 5-year plan. Like the LTS, the MTOPIII has a Theory of Change, Results framework, Monitoring, Evaluation and Learning (MEL) framework and an Environmental and Social Management Framework (ESMF). The MTOPIII thus operationalises the LTS by indicating some of the possible interventions that can be implemented under each thematic area.

This MTOPIII reflects the main activities that CCARDESA intends to implement from 2025 to 2029 and the information will assist in planning and guiding potential partners and collaborators on CCARDESA's focus. Therefore, it is my sincere hope that stakeholders will make use of this information to decide how they can support or collaborate with CCARDESA in discharging its mandate.

Prof. RAZAFINJARA Aimé Lala
Chairperson of the CCARDESA Board of Directors

ACKNOWLEDGEMENTS



The Medium-Term Operational Plan (MTOPIII) is a result of extensive collaborative efforts and contributions by stakeholders, including representatives from National Agricultural and Extension Services (NARES) from SADC Member States, CG Centres, academia, private sector, and cooperating partners. CCARDESA is grateful for your participation and contributions in the physical and virtual consultative workshops, which provided diverse information, expertise, and experience, all of which are reflected in the CCARDESA MTOPIII (2025-2029).

The CCARDESA Board of Directors is acknowledged for its leadership in steering the development and adoption of MTOPIII. CCARDESA is also grateful to Dr Martin Muchero (consultant) who was instrumental in providing technical support to the Secretariat in the development and review process, synthesised inputs from stakeholders, enabling the Secretariat to produce a final copy of the document.

CCARDESA is especially grateful to its development partners (the European Union Commission and the World Bank) who supported the process of producing the revised MTOPIII in various forms.

The hard work and dedication of the CCARDESA Secretariat staff did not go unnoticed. I am grateful for the teamwork and leadership you showed throughout the process.

Professor Cliff Sibusiso Dlamini (Ph.D.)
CCARDESA Executive Director and Head of Mission

EXECUTIVE SUMMARY

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) is a subsidiary implementing institution of the Southern African Development Community (SADC). It was established through a decision of the SADC Council Meeting of February 2010 and tasked with the mandate of coordinating agricultural research and development (R&D) in the region. The Centre became operational in 2012 and signed a hosting agreement with the Government of Botswana in 2014.

CCARDESA's first MTOPI was developed in 2013 and covered the period 2014-2018. The MTOPI was revised in 2015 to cover the remaining three years, 2016-2018. The revision was in response to the hitherto lower than expected funding levels which necessitated a recalibration of the MTOPI, including prioritisation of thematic areas. There was, therefore, a need to develop a second MTOPI for the period 2021-2025. With several critical emerging issues including the intensification of the effects of climate change, significant enhancements in technology and worsening food and nutrition security in the SADC region, the need for review of MTOPI II, in line with the review of the Long-Term Strategic Plan (2020-2029) gave rise to this MTOPI III (2024 – 2029).

Whilst still using the implementation approach of thematic areas, the main departure point of this MTOPI III from the previous ones is the focus on results. Furthermore, this plan anchors on the prioritised research areas as approved in November 2023 covering crops, livestock, fisheries including aquaculture, and forestry including apiculture.

Agricultural research for development (AR4D) institutions in the SADC, including CCARDESA, have a big role to play to ensure the region meets its development aspirations through a knowledge-based agricultural sector. CCARDESA is well positioned to play a leading role as a regional AR4D coordinating institution.

1. INTRODUCTION

1.1. About the Document

This document constitutes the third Medium-Term Operational Plan (MTOPIII) for the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) for the period 2025-2029. MTOPIII implements the Revised CCARDESA Long-Term Strategy (2020-2029).

1.2. Background to CCARDESA

CCARDESA is a subsidiary implementing institution of the Southern African Development Community (SADC). It was established through a decision of the SADC Council Meeting of February 2010 and tasked with the mandate of coordinating agricultural research and development (R&D) in the region. The Charter establishing CCARDESA came into force in April 2011. The Centre became operational in 2012 and signed a hosting agreement with the Government of Botswana in 2014.

The objectives of CCARDESA are stipulated in the Charter establishing the organisation and reflect the desires of the SADC Member States. These are:

- a. Coordinate and promote collaboration among regional and national agricultural research and development systems (NARS) through regional and international cooperation;
- b. Facilitate the exchange of information and technology among Member States;
- c. Promote partnerships in the SADC region between public, private, civil society and international organizations in R&D;
- d. Improve agricultural technology generation, dissemination and adoption in the region through collective efforts, training and capacity building; and
- e. Strengthen research and development in States Parties by mobilising human, financial and technological resources to implement and sustain demand-driven activities.

In line with the general guide on operation of SADC subsidiary organisations, as a subsidiary institution of SADC and through the Memorandum of Understanding (MOU) signed between CCARDESA and the SADC Secretariat:

- a. The SADC Secretariat provides overall strategic policy guidance and leadership to CCARDESA in order to ensure that the regional R&D agenda and priorities are consistent with the SADC mandate on agriculture and food security;
- b. CCARDESA operates as a semi-autonomous institution established under the principle of subsidiarity and shall focus on technical coordination and related harmonization functions of facilitation of the regional R&D agenda;
- c. CCARDESA submits Annual Reports to the States Parties Ministers through the SADC Secretariat; and
- d. CCARDESA signed a Memorandum of Understanding with the SADC.

1.3. Governance

The supreme governance structure of CCARDESA are the SADC State Parties Ministers responsible for Agriculture and Food Security, who appoint the members of the Board of Directors. Below the Ministers is the General Assembly of regional R&D stakeholders from SADC Member States, which meets every two years. The Board of Directors of CCARDESA provides oversight and guides the CCARDESA Secretariat on its general direction and programmes. The CCARDESA Secretariat performs the day-to-day functions of CCARDESA by implementing the programmes of CCARDESA and performing all tasks of coordination of agricultural research and development in the SADC region. The Secretariat reports to the Board of Directors. The Governance structure of CCARDESA is presented in Figure 1.

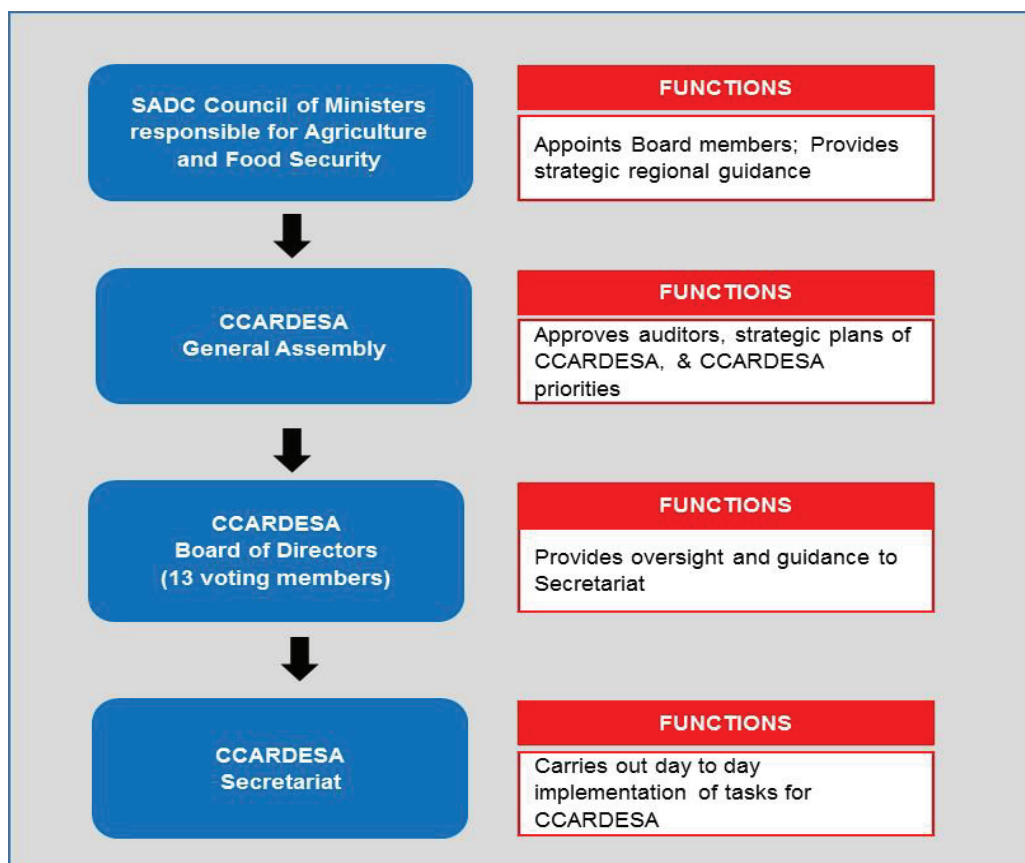


Figure 1: CCARDESA Governance Structure

1.4. CCARDESA'S Value Proposition

By virtue of its mandate, CCARDESA offers several benefits to the citizenry of the SADC Region. Key among its value proposition are that:

- a. CCARDESA has convening power as a SADC Subsidiary Regional Organisation within the formulation and implementation processes of strategic SADC frameworks. CCARDESA is empowered to convene, within the agricultural research and development sphere, and high-level meetings, discussions, and activities that involve relevant organs in the SADC member States.
- b. CCARDESA offers a platform to influence policy in SADC through the SADC structures.
- c. CCARDESA offers a knowledge and information broking capacity in addition to access to available research information, knowledge and practices for adoption in the agriculture sector in the region, through its Information, Communications and Knowledge Management network of nodes in the SADC member states.
- d. CCARDESA has a regional presence giving CCARDESA regional coverage in agricultural research and development.
- e. CCARDESA contributes to increased agricultural productivity and food and nutrition security in the SADC region through its networks of national agricultural research system (NARS), regional and national NARES, farmers and other agricultural value chain actors.
- f. CCARDESA contributes directly to sustainable management of natural resources and increased resilience to climate change and other emerging agricultural risks.
- g. CCARDESA contributes directly to increased commercialisation of smallholder agriculture and access to markets through improved technologies and strengthened regional and national NARES, farmers and other agricultural value chain actors.

- h. CCARDESA actions are gender sensitive promoting gender equality, women empowerment and increased employment and participation of youth and vulnerable groups in agricultural value chains through mainstreaming of women and youth in projects and programmes undertaken by CCARDESA.

1.5. Core Values of CCARDESA

The technical interventions, partnerships, collaboration and all interactions and services provided by CCARDESA are anchored on a set of strong core values:

- a. **Integrity:** CCARDESA commits to conduct itself in a transparent, impartial and honest manner in all its dealings and to be accountable to its stakeholders for the correct use of resources and delivery of results.
- b. **Relevance:** CCARDESA programmes, services, knowledge products and information are inclusive and designed in a participatory manner to timely meet the needs of all its stakeholders.
- c. **Respect:** CCARDESA holds all its stakeholders in high esteem and commits to comply with international and regional conventions and protocols as well as all laws and regulations in its host country and Member States, while upholding the intellectual property rights of partners.
- d. **Professionalism:** CCARDESA commits to observe the highest ethical standards and to promote the use of appropriate skills and high-quality science in its R&D initiatives.
- e. **Teamwork:** CCARDESA believes in participatory, collaborative and inclusive approaches, building effective institutional arrangements and partnerships that deliver benefits to all agricultural stakeholders.
- f. **Innovation:** CCARDESA is committed to delivering a cutting-edge regional research agenda and foster new approaches to agricultural research and innovation for development and dissemination, adoption and use of results, creating value for all its stakeholders.

2. GOAL, VISION AND MISSION

2.1. Goal

In line with the SADC Regional Agricultural Policy, the goal of CCARDESA's revised long term strategy is *to facilitate delivery of sustainable, equitable and inclusive resilient agri-food systems for food and nutrition security in the SADC region.*

2.2. Vision

A regional leader in coordination, harmonisation, catalysation, and facilitation of agricultural research and development for the attainment of transformed agri-food systems in the SADC Region

2.3. Mission

The mission of CCARDESA is *to coordinate regional agri-food systems transformation in the Southern African region through agricultural research and innovation for development for the benefit of SADC Member States*

3. CCARDESA RESULTS FRAMEWORK (2025 – 2029)

To achieve CCARDESA's goal, the Revised CCARDESA Long-Term Strategy (2020-2029) adopted the Results Based Management approach. This approach focuses on results. The following are CCARDESA's MTOPIII Result Areas, outputs and associated interventions for the period 2025 - 2029. These results, related outputs and associated interventions or main activities are summarised in the CCARDESA Results Framework (2025 – 2029) at Annex 1.

3.1. Result Area 1

Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains

To achieve the above result, the following outputs were identified for MTOPIII:

- a. **Output 1.1:** New and existing climate smart technologies, innovations and sustainable management practices (for crops, livestock, fisheries and forestry products) developed and promoted by NARES in the SADC Member States.
- b. **Output 1.2:** Nutrition-sensitive and climate smart agricultural technologies, innovations, sustainable management practices and interventions integrated into AR4D food systems research programmes for crops, livestock, forestry and fisheries to enhance dietary diversity and nutrition outcomes.
- c. **Output 1.3:** Public sector facilitated, private sector-led and market driven agri-food systems (for crops, livestock, forestry and fisheries) promoted especially to enhance viability of smallholder farming enterprises
- d. **Output 1.4:** Value chain actors' capacity to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness enhanced

3.2. Result Area 2

Strengthened capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors.

To achieve the above result, the following outputs were identified for MTOPIII:

- a. **Output 2.1:** Institutional capacities of CCARDESA strengthened
- b. **Output 2.2:** Institutional capacities of NARES strengthened.
- c. **Output 2.3:** Harmonisation of national and regional food and agriculture policies supported

3.3. Result Area 3

Enhanced resource mobilisation, partnerships and collaborations in agricultural research and development

To achieve the above result, the following outputs were identified for MTOPIII:

- a. **Output 3.1:** Resource mobilisation systems for CCARDESA and NARES systems strengthened
- b. **Output 3.2:** New strategic partnerships and collaborations established, and existing ones strengthened

3.4. Result Area 4

Enhanced gender, youth and social inclusion for their effective participation in agricultural value chains

To achieve the above result, the following outputs were identified for MTOPIII:

- a. **Output 4.1:** NARES supported to develop gender-sensitive interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains
- b. **Output 4.2:** AR4D technologies, innovations and sustainable management practices specifically targeting women, youth and vulnerable groups developed and promoted

3.5. Result Area 5

Sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks

To achieve the above result, the following outputs were identified for MTOPIII:

- a. **Output 5.1:** AR4D systems capacitated to support climate change mitigation and adaptation for resilience-building at regional and national level.
- b. **Output 5.2:** AR4D systems capacitated to support sustainable management of natural resources at regional and national level.
- c. **Output 5.3:** AR4D systems capacitated to support management of transboundary pests and disease in a sustainable manner at regional and national levels.
- d. **Output 5.4:** Inclusive fertiliser and soil health management practices for resilient agri-food systems promoted.

3.6. Result Area 6

Use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems by diverse CCARDESA stakeholders enhanced.

To achieve the above result, the following outputs were identified for MTOPIII:

- a. **Output 6.1:** NARES institutions strengthened in information packaging and use of digital innovations and ICT for the transformation of agriculture through research and extension.
- b. **Output 6.2:** Regional and national knowledge management hubs to foster collaboration and information sharing among various stakeholders established/strengthened.
- c. **Output 6.3:** CCARDESA Visibility enhanced

3.7. Summary of Result Areas, Outputs and Main Activities

The result areas, the expected outputs that will allow for the attainment of these results and the main activities that will allow for the delivery of the outputs are summarised in Annex 3 including sub-activities and output indicators. Tables 1 to 6 provide an overview of the outputs and related main activities for each result area.

Table 1: Summary of Outputs and Main Activities for Result Area No. 1

Result Area	Outputs	Main Activity
RA 1: Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains	Output 1.1: New and existing climate smart technologies, innovations and sustainable management practices (for crops, livestock, fisheries and forestry products) developed and promoted by NARES in the SADC Member States.	Main Activity 1.1.1: Coordinate and facilitate development, generation and adaptation of new technologies, innovations and management practices for use by value chain actors
		Main Activity 1.1.2: Coordinate and facilitate the promotion of new and existing technologies, innovations and management practices for adoption by value chain actors
	Output 1.2: Nutrition-sensitive and climate smart agricultural technologies, innovations, sustainable management practices and interventions integrated into AR4D food systems research programmes for crops, livestock, forestry and fisheries to enhance dietary diversity and nutrition outcomes	Main Activity 1.2.1: Facilitate the integration of nutrition sensitive technologies into NARS programmes
		Main Activity 1.2.2: Facilitate the integration of climate smart technologies into NARS programmes

Result Area	Outputs	Main Activity
	Output 1.3: Public sector facilitated, private sector-led and market driven agri-food systems (for crops, livestock, forestry and fisheries) promoted especially to enhance viability of smallholder farming enterprises	Main Activity 1.3.1: Facilitate integration of smallholder farmers into market oriented and viable agricultural value chains
	Output 1.4: Value chain actors' capacity to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness enhanced	Main Activity 1.4.1: Capacitate value chain actors to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness

Table 2: Summary of Outputs and Main Activities for Result Area No. 2

Result Area	Outputs	Main Activity
RA2: Strengthened capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors	Output 2.1: Institutional capacities of CCARDESA strengthened	Main Activity 2.1.1: Facilitate the adequate capacity to deliver the CCARDESA mandate
	Output 2.2: Institutional capacities of NARES strengthened.	Main Activity 2.2.1: Facilitate the strengthening of NARES
		Main Activity 2.2.2: Facilitate the establishment of new and strengthening of existing regional centres of leadership RCoLs
	Output 2.3: Harmonisation of national and regional food and agriculture policies supported	Main Activity 2.3.1: Facilitate domestication of the regional seed policy at country level.
Main Activity 2.3.2: Facilitate the implementation of the AU Fertiliser and Soil-Health Action Plan and the Soil Initiative for Africa Framework in the SADC Region		

Table 3: Summary of Outputs and Main Activities for Result Area No. 3

Result Area	Outputs	Main Activity
RA 3: Enhanced resource mobilisation, partnerships and collaborations in agricultural research and development	Output 3.1: Resource mobilisation systems for CCARDESA and NARES systems strengthened	Main Activity 3.1.1: Facilitate resources mobilization interventions for the NARES
		Main Activity 3.1.2: Facilitate resources mobilization interventions for the CCARDESA
	Output 3.2: New strategic partnerships and collaborations established, and existing ones strengthened	Main Activity 3.2.1: Facilitate establishment of new strategic partnerships and strengthening of existing ones.

Table 4: Summary of Outputs and Main Activities for Result Area No. 4

Result Area	Outputs	Main Activity
RA 4: Enhanced gender, youth and social inclusion for their effective participation in agricultural value chains	Output 4.1: NARES supported to develop gender-sensitive interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains.	Main Activity 4.1.1: Facilitate development and implementation of gender-sensitive interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains
	Output 4.2: AR4D technologies, innovations and sustainable management practices specifically targeting women, youth and vulnerable groups developed and promoted	Main Activity 4.2.1.: Promote the uptake of labour-, energy-, and time-saving appropriate scale technologies and innovations favourable for women, youth and vulnerable groups

Table 5: Summary of Outputs and Main Activities for Result Area No. 5

Result Area	Outputs	Main Activity
RA 5: Sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks	Output 5.1: AR4D systems capacitated to support climate change mitigation and adaptation for resilience-building at regional and national level.	Main Activity 5.1.1: Support development and implementation of climate change mitigation and adaptation practices for building resilient agri-food systems
	Output 5.2: AR4D systems capacitated to support sustainable management of natural resources at regional and national level.	Main Activity 5.2.1: Facilitate sustainable management of natural resources
	Output 5.3: AR4D systems capacitated to support management of transboundary pests and disease in a sustainable manner at regional and national levels.	Main Activity 5.3.1: Facilitate capacity building on the effective management of transboundary pests and diseases, phytosanitary measures, and other resilience-enhancing technologies and management practices
	Output 5.4 Inclusive fertiliser and soil health management practices for resilient agri-food systems promoted	Main Activity 5.4.1: Facilitate the implementation of the AU Fertiliser and Soil-Health Action Plan and the Soil Initiative for Africa Framework in the SADC Region

Table 6: Summary of Outputs and Main Activities for Result Area No. 6

Result Area	Outputs	Main Activity
RA 6: Use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems by diverse CCARDESA stakeholders enhanced	Output 6.1: NARES institutions strengthened in information packaging and use of digital innovations and ICT for the transformation of agriculture through research and extension	Main Activity 6.1.1: Facilitate information packaging and use of digital innovations
	Output 6.2: Regional and national knowledge management hubs to foster collaboration and information sharing among various stakeholders established/strengthened.	Main Activity 6.2.1: Establish/Strengthen knowledge management hubs to foster collaboration and information sharing among various stakeholders in the region
	Output 6.3: CCARDESA Visibility enhanced	Main Activity 6.3.1: Implement activities and promote products that enhance visibility of CCARDESA

3.8. Theory of Change

Based on the proposed CCARDESA Results Framework (Annex 1) and the alignment of CCARDESA’s mandate to the global, continental and regional agricultural frameworks, CCARDESA’s ToC for the Revised LTSP 2020 – 2029 is shown in Annex 2.

Delivery of the AR4D mandate is grounded on institutions with strong organisational and governance systems, sustainable funding mechanisms, strong networking, collaborative partnerships, strong outreach and advocacy, participatory regional and national agenda setting and strong programme management (planning, monitoring, evaluation and lessons learning). Adequate resourcing and investment into agricultural research and development is therefore paramount.

All programmes at regional and national level should be gender sensitive and inclusive of the need to increase the participation of youth in agricultural value chains and catering for the special needs of vulnerable groups such as people with disabilities and those living with HIV/AIDS. Women have always been the major player in the agriculture sector but remain unrecognised. Empowering women in the agriculture sector and recognising their important role has positive ripple effects in the economy including in enhancing food and nutrition security. Key among the enabling factors is improved information and knowledge sharing. CCARDESA and NARES will promote the use of

existing information and knowledge management systems and digital and ICT applications to ensure that all agricultural value chain actors have adequate information for decision making and action.

As NARES increasingly deliver on their mandates, this will result in increased use of research results to improve agricultural productivity; management of natural resources, climate change and other emerging agricultural risks; increased regional trade and market access; and increased participation of women and youth in agricultural value chains. National and regional outcomes will include improved food and nutrition security, improved management of natural resources (land, water and biodiversity), increased resilience to climate change and other emerging risks and increased incomes for agricultural value chain actors, especially smallholder farmers.

Attainment of these outcomes will contribute to the global SDGs as shown in Theory of change in Figure 5, especially SDGs 1, 2, 5, 8, 9, 10, 12, 13, 14, 15 and 17. With specific reference to SDG 17, strengthening the means of implementation is vital and partnerships at all levels are key to achieving this objective. To this end, CCARDESA Secretariat aims to build effective partnerships with various organizations, starting with the SADC Secretariat through FANR Directorate, and extending to development partners, UN agencies, CGIAR institutions, NGOs, and farmer organizations. These partnerships are crucial for policy guidance, resource mobilization, access to new technologies, and strengthening national agricultural research systems (NARES) in SADC countries. CCARDESA will focus on joint delivery and capacity building at the national level while ensuring responsibilities are delegated to partners best suited for specific roles, with CCARDESA maintaining its focus on areas where it has competitive advantage.

4. DELIVERING MTOPIII

4.1. Thematic Areas

Implementing CCARDESA's Long-Term Strategic Plan (2020-2029) has hitherto focused on a thematic approach with six such thematic areas, namely:

- a. Thematic Area 1: Agricultural productivity and food and nutrition security;
- b. Thematic Area 2: Resilience to emerging agricultural risks: environmental, climate change and transboundary diseases and pests;
- c. Thematic Area 3: Commercialisation of the agricultural sector and market access;
- d. Thematic Area 4: Women, youth and social inclusion;
- e. Thematic Area 5: Knowledge and information management, communication and policy support; and
- f. Thematic Area 6: Capacity strengthening of CCARDESA and NARES.

The review of this approach showed that thematic areas were simply a way of implementing a group of outputs and by their nature, thematic areas are interlinked and intertwined such that they may each contribute to more than one result area. While implementation of MTOPIII will be results focused, the thematic areas approach relied upon thus far has been matched with the results-oriented output framework for the revised CCARDESA LTS and MTOPIII in Table 7.

Table 7: Alignment of Thematic Areas and Strategy Outputs – Results Based Approach

Thematic Area	Relevant Results Area	Outputs Implemented under each Result Area aligned to the Thematic Areas as previous applied by CCARDESA
Thematic Area 1: Agricultural productivity and food and nutrition security	RA 1: Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains	<ul style="list-style-type: none"> a. Output 1.1: New and existing climate smart technologies, innovations and sustainable management practices (for crops, livestock, fisheries and forestry products) developed and promoted by NARES in the SADC Member States. b. Output 1.2: Nutrition-sensitive and climate smart agricultural technologies, innovations, sustainable management practices and interventions integrated into AR4D food systems research programmes for crops, livestock, forestry and fisheries to enhance dietary diversity and nutrition outcomes.
Thematic Area 2: Resilience to emerging agricultural risks: environmental, climate change and transboundary diseases and pests	RA 5: Sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks	<ul style="list-style-type: none"> a. Output 5.1: AR4D systems capacitated to support climate change mitigation and adaptation for resilience-building at regional and national level. b. Output 5.2: AR4D systems capacitated to support sustainable management of natural resources at regional and national level. c. Output 5.3: AR4D systems capacitated to support management of transboundary pests and disease in a sustainable manner at regional and national levels. d. Output 5.4: Inclusive fertiliser and soil health management practices for resilient agri-food systems promoted.
Thematic Area 3: Commercialisation of the agricultural sector and market access	RA 1: Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains	<ul style="list-style-type: none"> a. Output 1.3: Public sector facilitated, private sector-led and market driven agri-food systems (for crops, livestock, forestry and fisheries) promoted especially to enhance viability of smallholder farming enterprises b. Output 1.4: Value chain actors' capacity to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness enhanced.
Thematic Area 4: Women, youth and social inclusion	RA 4: Enhanced gender, youth and social inclusion for their effective participation in agricultural value chains	<ul style="list-style-type: none"> a. Output 4.1: NARES supported to develop gender-sensitive interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains b. Output 4.2: AR4D technologies, innovations and sustainable management practices specifically targeting women, youth and vulnerable groups developed and promoted
Thematic Area 5: Knowledge and information management, communication and policy support	RA 6: Use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems by diverse CCARDESA stakeholders enhanced.	<ul style="list-style-type: none"> c. Output 6.1: NARES institutions strengthened in information packaging and use of digital innovations and ICT for the transformation of agriculture through research and extension. d. Output 6.2: Regional and national knowledge management hubs to foster collaboration and information sharing among various stakeholders established/strengthened. e. Output 6.3: CCARDESA Visibility enhanced
Thematic Area 6: Capacity strengthening of	RA 2: Strengthened capacity of regional and national agricultural research for development	<ul style="list-style-type: none"> a. Output 2.1: Institutional capacities of CCARDESA strengthened b. Output 2.2: Institutional capacities of NARES strengthened.

Thematic Area	Relevant Results Area	Outputs Implemented under each Result Area aligned to the Thematic Areas as previous applied by CCARDESA
CCARDESA and NARES	(AR4D) institutions and other agricultural value chain actors. AND RA 3: Enhanced resource mobilisation, partnerships and collaborations in agricultural research and development	c. Output 2.3: Harmonisation of national and regional food and agriculture policies supported a. Output 3.1: Resource mobilisation systems for CCARDESA and NARES systems strengthened b. Output 3.2: New strategic partnerships and collaborations established, and existing ones strengthened

4.2. Priority Research Areas

The priority research areas for CCARDESA as established in 2023 will guide in the implementation interventions of MTOPIII. These are summarised in Annex 4.

5. ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

Given its commitment to enhance sustainable management of natural resources, CCARDESA has developed a set of environmental and social safeguards that will guide the implementation of its programmes by its various partners. The environmental and social safeguards are aimed at minimizing the possible negative impacts of CCARDESA programmes to the natural environment and to vulnerable communities in the sub-region. CCARDESA subjects all its projects to the Environmental and Social Safeguards (ESS) assessments and audits which entail the following:

- The list of activities, or characteristics of activities, that cannot be supported by CCARDESA because of their negative impact on the environment, animals or humans;
- Minimum environmental management policies and standards to be incorporate in the implementation scheme of activities;
- The description of the processes to be followed in implementing the ESS, and assignment of responsibilities for these processes;
- Training and technical assistance that will be provided to build capacity so that ESS responsibilities and standards may be successfully fulfilled; and

Measures that will be undertaken to continuously confirm that the provisions of the ESS are being followed by CCARDESA Secretariat and its partners, and also the measures developed and implemented for purposes of adherence to the ESS.

6. MONITORING, EVALUATION AND LEARNING

Annex 5 presents the monitoring and reporting matrix for MTOPIII. This will be the main instrument for monitoring implementation of MTOPIII deriving from the attainment of activities as outlined in the matrix for the five-year period 2025 - 2029. Robust M&E systems that have been developed by CCARDESA will be used to monitor and report on the implementation of MTOPIII.

There are several risks that have been identified that may affect the effective implementation of MTOPIII and therefore the overall the attainment of the objectives of the Revised CCARDESA Long-Term Strategy (2020-2029). The risk matrices (Annex 6 and Annex 7) consider both the risks to achieving CCARDESA's objectives and the risks that CCARDESA's expected outcomes pose. In other words, risk to and risks from the expected results of implementing MTOPIII.

7. BUDGET

Table 8 summarises the estimated cost requirements for the effective implementation of MTOPIII.

The total estimated cost of implementing MTOPIII is US\$94.2 million over the five-year period 2025 - 2029. While innovative mechanisms of funding the MTOPIII will be explored, the following funding options will be pursued.

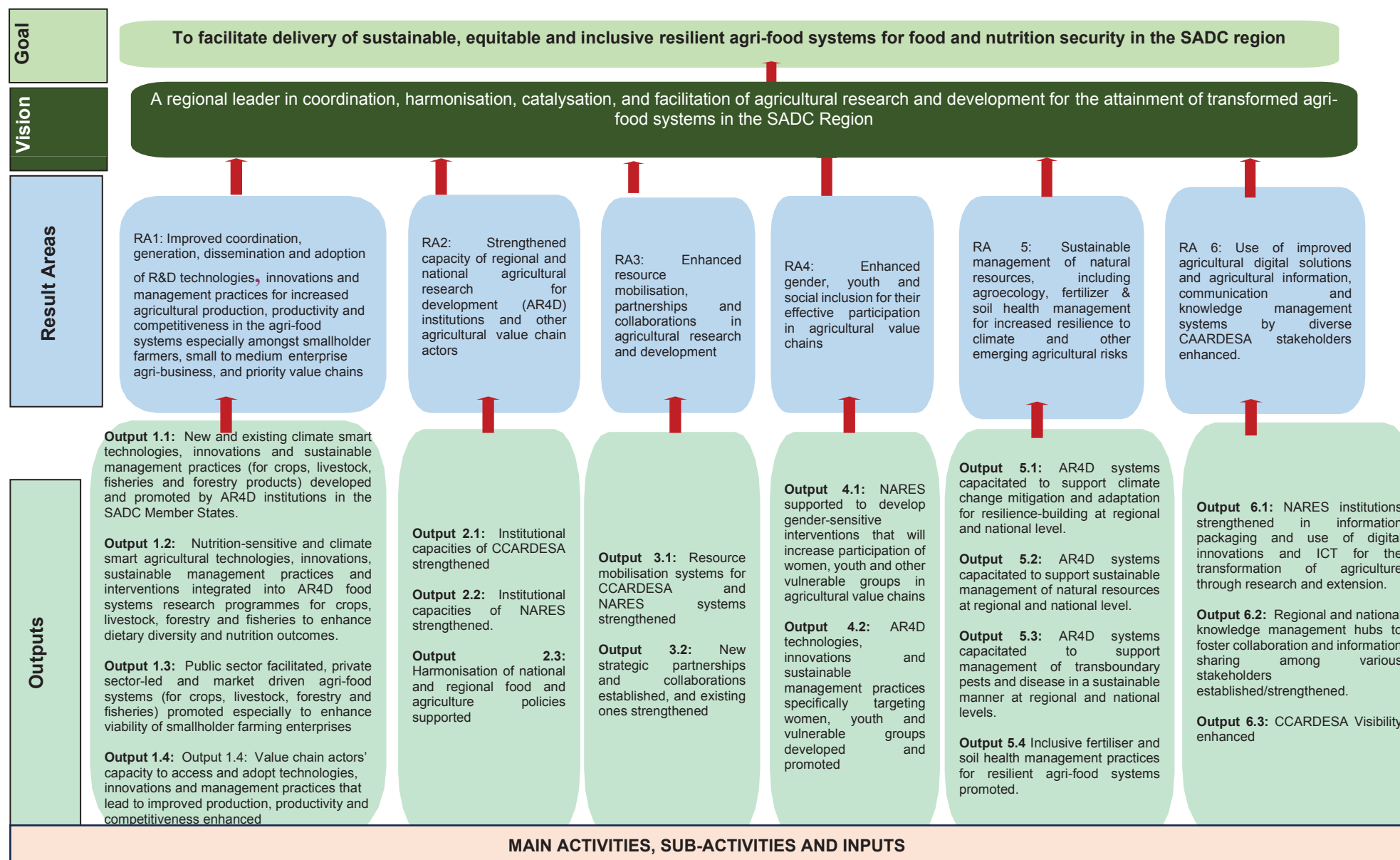
- a. Continuing support from member states to provide a strong foundation and motivating factor for development partners to complement these efforts.
- b. CCARDESA has developed and is implementing a resource mobilisation strategy to steer efforts to boost revenue generation both internally and externally. The strategy will include:
 - i) Charging for some services that have a private good nature – through strategic partnerships with the private sector;
 - ii) Charging participants to CCARDESA-organised conferences and events;
 - iii) Partnering with international cooperating partners to jointly ideate and mobilise resources to implement joint projects;
 - iv) Consideration of registering its products for royalty generation; and
 - v) Undertake special purpose vehicles for generating resources.

Table 8: Summary of Estimated Costs of Implementing MTOPIII

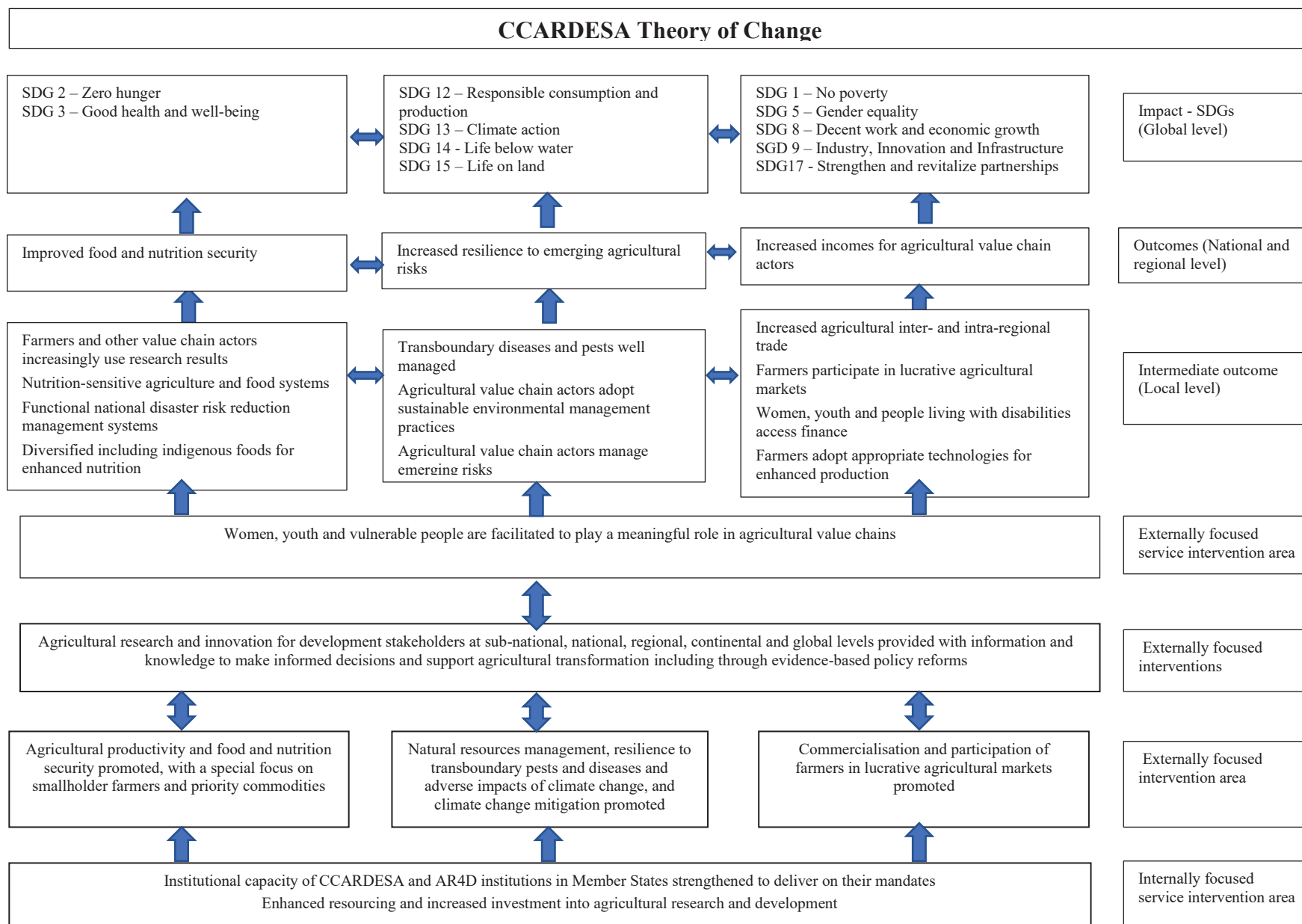
CCARDESA MTOPIII (2025 – 2029)							
SUMMARISED BUDGET (2025 – 2029)		BUDGET - ESTIMATED COSTS (2025 – 2029)					
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total
Strategic Objective	Catalyse and coordinate the generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains.						
Results Area	RA 1: Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains						
TOTAL RA1		1,433,700	1,735,100	1,576,200	1,601,500	1,388,700	7,735,200
Strategic Objective	Strengthen capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors						
Result Area	RA2: Strengthened capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors						
TOTAL RA2		556,950	335,700	335,700	396,950	335,700	1,961,000
Strategic Objective	Improve resource mobilisation and enhanced partnerships in agricultural research and development						
Result Area	RA 3: Enhanced resource mobilisation, partnerships and collaborations in agricultural research and development						
TOTAL RA3		458,600	458,600	443,600	443,600	443,600	2,248,000
Strategic Objective	Enhance gender, youth and social inclusion for their effective participation in agricultural value chains						
Result Area	RA 4: Enhanced gender, youth and social inclusion for their effective participation in agricultural value chains						
TOTAL RA4		762,300	762,300	572,000	572,000	483,100	3,151,700
Strategic Objective	Promote sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks						
Result Area	RA 5: Sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks						
TOTAL RA5		3,051,005	21,152,150	21,152,150	21,152,150	9,561,150	76,068,605
Strategic Objective	Promote mainstreaming and use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems by diverse CCARDESA stakeholders enhanced						
Results Area	RA 6: Use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems by diverse CCARDESA stakeholders enhanced						
TOTAL RA6		537,550	738,450	460,750	828,850	460,750	3,026,350
GRAND TOTAL		6,800,105	25,182,300	24,540,400	24,995,050	12,673,000	94,190,855

8. ANNEXES

8.1. Annex 1: CCARDESA Results Framework 2025 – 2029



8.2. Annex 2: CARDESA's Theory of Change



8.3. Annex 3: Summary of Result Areas, Outputs and Activities

Table 9: Results Area 1: Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices Alignment

Strategic Objective	Catalyse and coordinate the generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains.		
Results Area	RA 1: Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains		
Outputs	Output Indicators	Main Activity	Sub-Activity
Output 1.1: New and existing climate smart technologies, innovations and sustainable management practices (for crops, livestock, fisheries and forestry products) developed and promoted by NARES in the SADC Member States.	Number of new agricultural technologies, innovations and sustainable management practices developed	Coordinate and facilitate development, generation and adaptation of new technologies, innovations and management practices for use by value chain actors	Identify and map resilient technologies, innovations and practices
			Capacity development (through training, infrastructure development) for generation and adaptation of new and existing innovations and sustainable management practices.
			Support the establishment and strengthening of technology release committees in the Member States
			Provide technical support to NARS for the development of new technologies and sustainable management practices (crops, livestock, forestry and fisheries)
	Number of new and existing technologies, innovations and sustainable management practices promoted by NARES for adoption by value chain actors	Coordinate and facilitate the promotion of new and existing technologies, innovations and management practices for adoption by value chain actors	Disseminate and promote the technologies, innovations and sustainable management practices relevant to the region.
			Advocate and lobby for the integration of resilient technologies into user oriented services such as early warning systems, index-based insurance, climate information systems
			Coordinate documentation of the impact of technologies, innovations sustainable management practices along value chains of sub projects
			Coordinate learning and exchange visits
Output 1.2: Nutrition-sensitive and climate smart agricultural technologies, innovations, sustainable management practices and interventions integrated into AR4D food systems research programmes for crops, livestock, forestry and fisheries to enhance dietary diversity and nutrition outcomes	Number of nutrition sensitive technologies generated by NARS with support from CCARDESA	Facilitate the integration of nutrition sensitive technologies into NARS programmes	Strengthen the capacity of the NARES to integrate nutrition sensitive interventions through training and exchange visits
			Conduct advocacy and sensitization on nutrition sensitive agriculture interventions
			Strengthen the capacity of NARES to improve on processing, storage, and preservation of crops and animal products to retain nutritional value and food safety, to reduce seasonality and postharvest losses, and to make healthy foods convenient to prepare.
	Number of climate smart technologies generated by NARS with support from CCARDESA	Facilitate the integration of climate smart technologies into NARS programmes	Strengthen the capacity of the NARES to integrate climate smart interventions through training and exchange visits
			Conduct advocacy and sensitization on climate smart agriculture interventions
			Creating a platform for co-creation climate smart technologies by public and private sector AR4D actors
Output 1.3: Public sector facilitated, private sector-led and market driven agri-food systems (for crops, livestock, forestry and fisheries) promoted especially to	Number of MS capacitated to promote market driven production systems including meeting sanitary and phytosanitary standards	Facilitate integration of smallholder farmers into market oriented and viable agricultural value chains	Commission a study to identify technical and regulatory barriers to agricultural marketing and cross border trade and support implementation of recommendations from the study
			Support the development of guidelines for the implementation of SADC-identified priority agricultural value chains

CCARDESA Medium-Term Operational Plan (MTO) III (2025-2029)

Strategic Objective	Catalyse and coordinate the generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains.		
Results Area	RA 1: Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains		
Outputs	Output Indicators	Main Activity	Sub-Activity
enhance viability of smallholder farming enterprises			Strengthen the technical capacities of NARES for implementation of the existing SADC Harmonised Seed Regulatory System
			Establish a one-stop regional market information digital platform where farmers and stakeholders can access information on markets, availability prices of seed varieties, inputs and other necessary information that can stimulate production and marketing.
			Develop a regional agricultural trade and market scorecard, which will be used to assess the implementation of policy commitments on agricultural trade and market access in the Southern African region by identifying country-level policy gaps and areas for improvement related to intra-regional food and agricultural trade
Output 1.4: Value chain actors' capacity to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness enhanced	Number of MS capacitated to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness	Capacitate value chain actors to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness	Capacity building of the value chain actors to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness
			Support partner institutions to link value chain actors (including farmers) to finance, markets and value addition facilities.
			Facilitate public, private partnerships in the generation and dissemination of technologies, innovations and management practices to support commercialization
			Support NARES institutions to set up, standardise and scale innovation platforms for promoting value addition of priority commodities

Table 10: Results Area 2: Strengthened capacity of regional and national agricultural research for development (AR4D) institutions

Strategic Objective	Strengthen capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors			
Result Area	RA2: Strengthened capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors			
Outputs	Output Indicators	Main Activity	Sub-Activity	
Output 2.1: Institutional capacities of CCARDESA strengthened	Capacity of CCARDESA to deliver on its mandate	Facilitate the adequate capacity to deliver the CCARDESA mandate	Facilitate adequate capacity of Governance Structure Recruit and maintain adequate staffing levels Capacitate staff to undertake their functions	
Output 2.2: Institutional capacities of NARES strengthened.	Number of NARES strengthened	Facilitate the strengthening of NARES	Facilitate regional needs assessment of NARES and prioritise intervention areas Support the upgrading of infrastructure needs of NARES Capacitate human capital based on the capacity needs of NARES	
	Number of regional centres of leadership (RCoLs) established / strengthened	Facilitate the establishment of new and strengthening of existing regional centres of leadership RCoLs	Undertake needs assessments for the establishment of new RCoLs Develop guidelines for the establishment of new and maintenance of existing RCoLs Support the establishment and capacity building of RCoLs	
Output 2.3: Harmonisation of national and regional food and agriculture policies supported		Facilitate domestication of the regional seed policy at country level.	Establish the status of harmonisation of national seed regulatory systems to regional strategies including focusing on integration of seed supply systems.	
			Facilitate the alignment of national agricultural policies / strategies with the SADC's regional policies	
			Assist Member States to sign and ratify the SADC Seed Charter in compliance with the SADC Harmonised Seed Regulatory System (HSRS) including the development/alignment and operationalization of (1) Variety Release Systems, (2) Seed Certification and Quality Systems & (3) Phytosanitary and Quarantine Measures	
			Facilitate awareness and establishment of Plant Breeders' Rights that are relevant to the growth of the farmer	
			Support the NARES to identify and capacitate key stakeholders (private sector, farmers, CSO, Government, etc.) in the seed sector	
			Facilitate the implementation of the AU Fertiliser and Soil-Health Action Plan and the Soil Initiative for Africa Framework in the SADC Region	Coordinate harmonization of national policies and regulatory frameworks on fertilizer formulations for long term sustainability and use efficiency
				Support actualisation of precision of agriculture through digital soil mapping
				Support collaborative and adaptive research to tackle fertiliser use and soil health challenges and improve the quality of support to smallholder farmers.
				Advocate for efficient climate-smart agronomic practices to improve soil health and consequently fertilizer use efficiency,
				Advocate for soil health improvement programmes that mainstream organic resources as an ecological pathway to improving soil carbon and reduce GHG emissions
			Develop a road map for the establishment and implementation of Soil Initiative for Africa (SIA) Regional Hub at CCARDESA.	
			Facilitate regional learning events for promoting improved policies, Investment, Finance and Markets for Sustainable Soil Health and Fertilizer Management	
			Facilitate the identification and adoption of strategies and policy instruments of high agricultural or ecological importance for protection, restoration, and sustainable management to improve soil health. (Land scape management).	
			Facilitate adoption of appropriate technologies for effective use of water including groundwater for agriculture	

Table 11: Results Area 3: Enhanced resource mobilisation, partnerships and collaborations in agricultural research and development

Strategic Objective	Improve resource mobilisation and enhanced partnerships in agricultural research and development		
Result Area	RA 3: Enhanced resource mobilisation, partnerships and collaborations in agricultural research and development		
Outputs	Output Indicators	Main Activity	Sub-Activity
Output 3.1: Resource mobilisation systems for CCARDESA and NARES systems strengthened	Number of NARES capacitated to mobilize resources	Facilitate resources mobilization interventions for the NARES	Capacitate NARES to develop national bankable project proposals
			Coordinate and collaborate with NARES in the development of regional bankable project proposals to finance agricultural research efforts
			Engage international partners to mobilize resources for NARES to implement national research agendas
		Facilitate resources mobilization interventions for the CCARDESA	Collaborate with SADC Secretariat to mobilize resources for regional research programmes
			Develop a business model and lobby for funding for CCARDESA operations
			Engage international partners to mobilize resources for CCARDESA to coordinate implementation of the regional research agenda
Output 3.2: New strategic partnerships and collaborations established and existing ones strengthened	Number of partnership MOUs established	Facilitate establishment of new strategic partnerships and strengthening of existing ones.	Capacitate CCARDESA to develop bankable project proposals for different international cooperating partners, development partners and donors
			Facilitate implementation of joint programmes with existing and new partnerships.
			Develop stakeholder engagement and advocacy mechanisms

Table 12: Results Area 4: Enhanced gender, youth and social inclusion for their effective participation in agricultural value chains

Strategic Objective	Enhance gender, youth and social inclusion for their effective participation in agricultural value chains		
Result Area	RA 4: Enhanced gender, youth and social inclusion for their effective participation in agricultural value chains		
Outputs	Output Indicators	Main Activity	Sub-Activity
Output 4.1: NARES supported to develop gender-sensitive interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains.	Number of NARES supported to develop interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains	Facilitate development and implementation of gender-sensitive interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains	Support NARES to capacitate youth, women and vulnerable groups to access agriculture support services (technologies, finance, markets, etc)
			Support development and scaling of gender responsive and youth focused value chains and agribusinesses
			Facilitate the participation of women, youth and vulnerable groups in agricultural science and innovation
Output 4.2: AR4D technologies, innovations and sustainable management practices specifically targeting women, youth and vulnerable groups developed and promoted	Number of technologies and innovations favourable for women, youth and vulnerable groups promoted	Promote the uptake of labour-, energy-, and time-saving appropriate scale technologies and innovations favourable for women, youth and vulnerable groups	Identify and develop a compendium of labour-, energy-, and time-saving appropriate scale technologies for women, youth and vulnerable groups
			Promote adoption and use of labour-, energy-, and time-saving appropriate scale technologies by women, youths, and the vulnerable groups

Table 13: Results Area 5: Sustainable management of natural resources

Promote sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks			
RA 5: Sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks			
Strategic Objective			
Results Area			
Outputs	Output Indicators	Main Activity	Sub-Activity
Output 5.1: AR4D systems capacitated to support climate change mitigation and adaptation for resilience-building at regional and national level.	Number of MS capacitated to support climate change mitigation and adaptation for resilience-building programmes at national level	Support development and implementation of climate change mitigation and adaptation practices for building resilient agri-food systems	Capacity assessment of national AR4D systems to support climate change mitigation and adaptation for resilience-building programmes at national level Based on study results above, promote and scale climate-smart technologies, innovations, and management practices with high potential for resilience building Facilitate widespread sharing of early warning and disaster risk information to support in resilience building Provide targeted capacity strengthening to priority areas of the NARES on disaster risks and disaster risk management such as trainings, learning visits, mentoring, etc.
Output 5.2: AR4D systems capacitated to support sustainable management of natural resources at regional and national level.	Number of MS capacitated to support sustainable management of natural resources at national level	Facilitate sustainable management of natural resources	Capacity assessment of national AR4D systems to support agroecology Suitability mapping of natural resources for matching natural environment with prioritised national agricultural commodities Support packaging of good agricultural practices for sustainable management of natural resources
Output 5.3: AR4D systems capacitated to support management of transboundary pests and disease in a sustainable manner at regional and national levels.	Number of MS capacitated to support sustainable management of transboundary pests and diseases	Facilitate capacity building on the effective management of transboundary pests and diseases, phytosanitary measures, and other resilience-enhancing technologies and management practices	Strengthen cooperation and implementation of best practices including guidelines for the management of trans-boundary pests and diseases Coordinate implementation of research on and management of emerging pests and diseases of economic importance in the SADC region Adapt AR4D technologies and strategies for early warning systems, surveillance and monitoring tools for effective management of transboundary pests and diseases of regional economic importance
Output 5.4 Inclusive fertiliser and soil health management practices for resilient agri-food systems promoted	(a) Number of fertiliser and soil health management practices promoted (b) Number of Member States implementing fertilizer and soil health management practices	Facilitate the implementation of the AU Fertiliser and Soil-Health Action Plan and the Soil Initiative for Africa Framework in the SADC Region	Coordinate harmonization of national policies and regulatory frameworks on fertilizer formulations for long term sustainability and use efficiency Support actualisation of precision of agriculture through digital soil mapping Support collaborative and adaptive research to tackle fertiliser use and soil health challenges and improve the quality of support to smallholder farmers. Advocate for efficient climate-smart agronomic practices to improve soil health and consequently fertilizer use efficiency, Advocate for soil health improvement programmes that mainstream organic resources as an ecological pathway to improving soil carbon and reduce GHG emissions Establish and implement Soil Initiative for Africa (SIA) Regional Hub at CCARDESA. Facilitate regional learning events for promoting improved policies, Investment, Finance and Markets for Sustainable Soil Health and Fertilizer Management Facilitate the identification and adoption of strategies and policy instruments of high agricultural or ecological importance for protection, restoration, and sustainable management to improve soil health. (Land scape management). Facilitate adoption of appropriate technologies for effective use of water including groundwater for agriculture

Table 14: Results Area 6: Use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems

Strategic Objective	Promote mainstreaming and use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems by diverse CCARDESA stakeholders enhanced		
Results Area	RA 6: Use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems by diverse CCARDESA stakeholders enhanced		
Outputs	Output Indicators	Main Activity	Sub-Activity
Output 6.1: NARES institutions strengthened in information packaging and use of digital innovations and ICT for the transformation of agriculture through research and extension	Number of NARES institutions supported	Facilitate information packaging and use of digital innovations	Support and promote compliance to best practices and international standards for collecting, packaging and disseminating agricultural research information Facilitate gender sensitive and inclusive capacity building on the use of digital innovations (e.g. e-Extension, e-Commerce, CCARDESA mobile app, SAWBO , etc)
Output 6.2: Regional and national knowledge management hubs to foster collaboration and information sharing among various stakeholders established/strengthened.	a. Existence of functional regional knowledge hub b. Number of functional national knowledge hubs	Establish/Strengthen knowledge management hubs to foster collaboration and information sharing among various stakeholders in the region	Strengthen the existing CCARDESA ICKM hub including lateral exchange and collaborations amongst national hubs Facilitate the establishment/strengthening of national ICKM hubs to enhance access and adoption of ICT Develop and disseminate knowledge products and services in support of increased adoption of research results by agricultural value chain actors
Output 6.3: CCARDESA Visibility enhanced	(a) Number of stakeholders aware of CCARDESA (b) Number of stakeholders using CCARDESA knowledge products (c) Number of visits to CCARDESA websites	Implement activities and promote products that enhance visibility of CCARDESA	Develop CCARDESA success and impact stories and share with MS and stakeholders Hold biennial scientific symposia to coincide with the General Assembly Maintain an up-to-date website and social media platforms Participation in partner conferences symposia Branding materials produced and distributed

8.4. Annex 4: Ranked Agricultural Research and Development Priorities of SADC

Table 15: Main research gaps and key research questions for the crops sector in SADC.

Ranking	Research Gap (area)	Key research questions or topics
1	Availability of quality and improved seeds (Breeding)	<ol style="list-style-type: none"> 1. Breed crop varieties through market demand-led needs 2. Breeding for Biofortified and hybrid (millet) varieties with high yielding traits 3. Breeding programs for pest and disease resistant varieties 4. Breeding and multiplication of underutilized indigenous food plants 5. Breed varieties tolerant to drought and heat
2	Pests and diseases	<ol style="list-style-type: none"> 1. Conduct studies to understand pest and disease dynamics in relation to climate change. 2. Determine Integrated Pest Management practices packages suitable for specific environmental conditions and specific plants to improve crop production
3	Soil fertility and water management	<ol style="list-style-type: none"> 1. Identify and evaluate appropriate fertilizer (inorganic and organic) application rates. 2. Conduct studies on the best agro-ecology (agroforestry) systems 3. Identify water-use efficient systems
4	Impacts of Climate variation on crop production	<ol style="list-style-type: none"> 1. Study the effect of climate variation on the production performance of specific crops. 2. Develop early warning systems to support farmers to deal with effect of climate variation
5	Market access	<ol style="list-style-type: none"> 1. Determine barriers to market access and low regional trade in agricultural products. 2. Determine most effective models for increasing market access and regional trade in agricultural products
6	Limited farmers' knowledge (Capacity building)	<ol style="list-style-type: none"> 1. Identify barriers to knowledge and technology transfer between researchers and farmers. 2. Identify farmers' capacity needs and gaps. 3. Identify effective mechanisms for knowledge dissemination and capacity building.
Source: CCARDESA Research and Development Priorities in Key Agricultural Commodities in Southern Africa. October 2023		

Table 16: Main research gaps and key research questions for the livestock sector in SADC.

Research Topic Rank	Research Area			
	Animal Breeding	Pests and Disease Control	Animal Feeding & Nutrition	Marketing
1	Characterization, evaluation, and selection of indigenous livestock breeds	Improvement of diagnostic tools for livestock diseases	Evaluation of nutritive values of feed resources available in the region (including agricultural by products)	Evaluation of low levels of inter-regional trade
2	Breeding of selected breeds (crossbreeding: both natural, Artificial Insemination (AI) or Embryo transfer)	Development of early warning systems & biological control methods for livestock pests	Formulation of feed for optimum production	
3	Monitoring & evaluation of production indices		Improvement of rangelands through introduction of leguminous & grass species	
4	Development & evaluation of composite/suitable breeds for the region			

Source: CCARDESA Research and Development Priorities in Key Agricultural Commodities in Southern Africa. October 2023

Table 17: Main research gaps and key research questions for the fisheries sector in SADC.

Research Topic Rank	Research Area Rank 1	Research Area Rank 2	Research Area Rank 3	Research Area Rank 4	Research Area Rank 5
	Overfishing and overcapacity	Multispecies nature of fisheries in SADC	Water pollution	Limited access to markets	Invasive species
1	Stock assessment studies	Stock assessments	Marine / freshwater Spatial Planning (MSP) / zonation	Assessment for improved fish quality, marketing & distribution networks	Impacts of invasive species on biodiversity, economy & livelihoods
2	Alternative livelihoods e.g., water-based aquaculture	Organization of Fishing and trading in different fisheries	Water body Carrying capacity for fish and aquatic plants	Value addition of fish and fishery products	Alternative use of invasive species
3	Value addition of fish and fishery products	Catch Assessments	Environmental and social Impact assessments	Certification and eco-labelling of fish and fishery products	

Source: CCARDESA Research and Development Priorities in Key Agricultural Commodities in Southern Africa. October 2023

Table 18: Main research gaps and key research questions for the aquaculture sector in SADC.

Research Topic Rank	Research Area Rank 1	Research Area Rank 2	Research Area Rank 3	Research Area Rank 4	Research Area Rank 5
	Feed and Nutrition	Breeding and reproduction	Fish disease and biosecurity	Climate change	Introductions / translocation
1	Alternative sources of protein in fish feed	Genetic improvement programmes – growth and nutrition indices	Studies on fish diseases and risk management	Impacts of climate change on aquatic biodiversity	Genetic Improvement Programme
2	Cost – benefit analysis of feeding regimes in different production systems	In situ conservation of the indigenous fish species (MPA) or in situ gene banks	Mapping / zonation	Resilience and adaptation studies	Mapping and impact assessment
3			Biosecurity studies on cultured fish species	New culturable aquatic species (temperature and pollution)	Alternative uses of invasive species
4			Genetic Improvement Programmes for disease resistance		

Source: CCARDESA Research and Development Priorities in Key Agricultural Commodities in Southern Africa. October 2023

Table 19: Main research gaps and key research questions for the forestry sector in SADC.

Research Topic Rank	Research Area	Research Questions
1	Non-Timber Forest Products	<ol style="list-style-type: none"> 1. What is the NTFPs resource base (resource surveys, mapping)? 2. What are the economic and the flow values of the products harvested? 3. What is the rate of extraction (and regeneration stock)? 4. What are the Threats of the NTFPs? 5. What are the opportunities for domestication? 6. What are available Methodologies and Protocols (Stock Mapping)? 7. What are the Flowering and Fruiting Periods (PHENOLOGY) of the different Species and Subspecies?
2	Agroforestry	<ol style="list-style-type: none"> 1. What are the existing appropriate agroforestry practices and technologies for smallholder farmers (traditional and contemporary technologies)? 2. What are the suitable fodder tree species and management practices/technologies for livestock production? 3. What are the relevant multipurpose tree species for apiculture and aquaculture? 4. What are the suitable tree species and management practices/technologies for soil restoration (fertility, etc.), and crop production? 5. What are the appropriate models that can be co-created/co-produced and implemented that integrate trees, crops, animals, aquaculture, and apiculture to enhance ecosystem sustainability and community livelihoods?
3	Plantation forests	<ol style="list-style-type: none"> 1. What are the current management challenges and potential solutions to existing plantations? 2. What are current investment and potential capacities/levels in new plantations? 3. What is the status (quantity, value, etc.) of the existing plantation resources (government parastatal, private, and community)?
4	Sustainable Forest Management: Carbon Trading and Storage	<ol style="list-style-type: none"> 1. What are the forest Carbon credit and market/ carbon trading protocols especially in the following: <ol style="list-style-type: none"> a. Research in quantification of Carbon sequestration and storage; allometric & growth models for different vegetation types or landscapes. b. Emission factors, negotiating agreements, Structuring benefit sharing mechanisms (skills, capacity, business growth, etc.)

Source: CCARDESA Research and Development Priorities in Key Agricultural Commodities in Southern Africa. October 2023

Table 20: Priority areas of investment in research and development and learning in cross-cutting issues

#	Research Area	Research Questions
1	Knowledge, Technology, and Innovation Systems	<ol style="list-style-type: none"> 1. How can SADC members sustainably increase public investment in research and development, technology, and extension? 2. What are the constraints to private sector investments in Research and Development, Technology and Extension? 3. How can we effectively utilize Indigenous Knowledge systems and technology in the region? 4. Develop an inventory and create a database of available technologies, innovations and best practices for adoption at scale.
2	Infrastructure Development	<ol style="list-style-type: none"> 1. What are the critical infrastructure investments required in the region to sustainably operationalize the AfCFTA? 2. What are the policies and financing modalities required to support infrastructure development in the region to facilitate regional integration and trade under AfCFTA?
3	Marketing and Trade Development	<ol style="list-style-type: none"> 1. What policy frameworks and regional cooperation mechanisms are necessary to promote the development of regional value chains based on countries' comparative advantages? 2. Conduct a mapping exercise of SADC countries' comparative advantage in various value chains to contribute to the domestication and operationalization of the AfCFTA in the region
4	Finance and Credit	<ol style="list-style-type: none"> 1. What are the policies and investments required to sustainably harness and increase private sector financing in agriculture, forestry, and fisheries sectors in the region? 2. What are the best practices for financing regional initiatives and commitments?
5	Environment and Climate Change	<ol style="list-style-type: none"> 1. How does the region enhance its capacity to develop a pipeline of bankable climate finance projects? 2. What needs to be done to increase the adoption of climate-smart practices and investments in the region? 3. Make an inventory of coping strategies that are increasing household resilience to shocks and how these strategies can be supported and scaled up in the region. 4. What are the policies and strategies for boosting local investments in climate action?
<p>Source: CCARDESA Research and Development Priorities in Key Agricultural Commodities in Southern Africa. October 2023</p>		

8.5. Annex 5: Monitoring and Evaluation Matrix

Strategic Objective	Catalyse and coordinate the generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains.								
Results Area	RA 1: Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains								
Outputs	Output Indicators	Baseline (2020)	Target (2029)	Means of verification	Assumptions	Main Activity	Sub-Activity	Means of Implementation	
Output 1.1: New and existing climate smart technologies, innovations and sustainable management practices (for crops, livestock, fisheries and forestry products) developed and promoted by NARES in the SADC Member States.	Number of new agricultural technologies, innovations and sustainable management practices developed	160	300	NARES reports	MS support development of new technologies	Coordinate and facilitate development, generation and adaptation of new technologies, innovations and management practices for use by value chain actors	Identify and map resilient technologies, innovations and practices	Compendium write shop	
							Capacity development (through training, infrastructure development) for generation and adaptation of new and existing innovations and sustainable management practices.	Capacity Building Trainings	
							Support the establishment and strengthening of technology release committees in the Member States	Capacity Building In country Workshops	
							Provide technical support to NARS for the development of new technologies and sustainable management practices (crops, livestock, forestry and fisheries)	Backstopping missions	
	Number of new and existing technologies, innovations and sustainable management practices promoted by NARES for adoption by value chain actors				NARES reports		Coordinate and facilitate the promotion of new and existing technologies, innovations and management practices for adoption by value chain actors	Disseminate and promote the technologies, innovations and sustainable management practices relevant to the region.	Knowledge products
						Advocate and lobby for the integration of resilient technologies into user-oriented services such as early warning systems, index-based insurance, climate information systems		Meetings / publications / Policy Briefs	
						Coordinate documentation of the impact of technologies, innovations sustainable management practices along value chains of sub projects		Missions	
		301	500			Coordinate learning and exchange visits		Missions	
					MS support dissemination of new technologies			Facilitate sharing of technologies and learning across the region	Virtual meetings
									Collaborative research
									Regional Field days
									Farmer field schools
									Innovation Platforms
Output 1.2: Nutrition-sensitive and climate smart agricultural technologies, innovations, sustainable management	Number of nutrition sensitive technologies generated by NARS with support from CCARDESA	0	At least 20	NARES reports		Facilitate the integration of nutrition sensitive technologies into NARS programmes	Strengthen the capacity of the NARES to integrate nutrition sensitive interventions through training and exchange visits	Workshops/Exchange Visits	
					MS support development of new technologies		Conduct advocacy and sensitization on nutrition sensitive agriculture interventions	Communication materials through various communication channels	

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Strategic Objective	Catalyse and coordinate the generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains.							
Results Area	RA 1: Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains							
Outputs	Output Indicators	Baseline (2020)	Target (2029)	Means of verification	Assumptions	Main Activity	Sub-Activity	Means of Implementation
practices and interventions integrated into AR4D food systems research programmes for crops, livestock, forestry and fisheries to enhance dietary diversity and nutrition outcomes	Number of climate smart technologies generated by NARS with support from CCARDESA					Facilitate the integration of climate smart technologies into NARS programmes	Strengthen the capacity of NARES to improve on processing, storage, and preservation of crops and animal products to retain nutritional value and food safety, to reduce seasonality and postharvest losses, and to make healthy foods convenient to prepare.	Demonstrations
							Strengthen the capacity of the NARES to integrate climate smart interventions through training and exchange visits	Workshops
		0	At least 10		MS support development of new technologies		Conduct advocacy and sensitization on climate smart agriculture interventions	Communication materials through various communication channels
							Creating a platform for co-creation climate smart technologies by public and private sector AR4D actors	Demonstrations
Output 1.3: Public sector facilitated, private sector-led and market driven agri-food systems (for crops, livestock, forestry and fisheries) promoted especially to enhance viability of smallholder farming enterprises	Number of MS capacitated to promote market driven production systems including meeting sanitary and phytosanitary standards		At least 10	NARES reports		Facilitate integration of smallholder farmers into market oriented and viable agricultural value chains	Commission a study to identify technical and regulatory barriers to agricultural marketing and cross border trade and support implementation of recommendations from the study	Consultancy
							Support the development of guidelines for the implementation of SADC- identified priority agricultural value chains	Consultancy
		0	At least 10	CCARDESA reports	MS support development of new production systems		Strengthen the technical capacities of NARES for implementation of the existing SADC Harmonised Seed Regulatory System	Training workshops
							Establish a one-stop regional market information digital platform where farmers and stakeholders can access information on markets, availability prices of seed varieties, inputs and other necessary information that can stimulate production and marketing.	Consultancy
							Develop a regional agricultural trade and market scorecard, which will be used to assess the implementation of policy commitments on agricultural trade and market access in the Southern African region by identifying country-level policy gaps and areas for improvement related to intra-regional food and agricultural trade	Consultancy
Output 1.4: Value chain actors' capacity to access and adopt technologies, innovations and	Number of MS capacitated to access and adopt technologies, innovations and management practices that lead to improved production,					Capacitate value chain actors to access and adopt technologies, innovations and management practices that lead to improved	Capacity building of the value chain actors to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness	Workshops
								Missions and meetings

Strategic Objective	Catalyse and coordinate the generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains.							
Results Area	RA 1: Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains							
Outputs	Output Indicators	Baseline (2020)	Target (2029)	Means of verification	Assumptions	Main Activity	Sub-Activity	Means of Implementation
management practices that lead to improved production, productivity and competitiveness enhanced	productivity and competitiveness	5	At least 10	CCARDESA reports	Farmers adopt new technologies	production, productivity and competitiveness	Support partner institutions to link value chain actors (including farmers) to finance, markets and value addition facilities.	Demonstrations
							Facilitate public, private partnerships in the generation and dissemination of technologies, innovations and management practices to support commercialization	Meetings
							Support NARES institutions to set up, standardise and scale innovation platforms for promoting value addition of priority commodities	Workshops

Strategic Objective	Strengthen capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors								
Result Area	RA2: Strengthened capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors								
Outputs	Output Indicators	Baseline (2020)	Target (2029)	Means of Verification	Assumptions	Main Activity	Sub-Activity	Means of Implementation	
Output 2.1: Institutional capacities of CCARDESA strengthened	Capacity of CCARDESA to deliver on its mandate improves					Facilitate the adequate capacity to deliver the CCARDESA mandate	Facilitate adequate capacity of Governance Structure	Workshops / Lobbying / Advocacy	
		No	Yes	NARES reports	Limited brain drain		Recruit and maintain adequate staffing levels	Recruitment	
							Capacitate staff to undertake their functions	Trainings and Workshops / annual Retreats	
Output 2.2: Institutional capacities of NARES strengthened.	Number of NARES strengthened	5	At least 10	NARES reports	Limited brain drain	Facilitate the strengthening of NARES	Facilitate regional needs assessment of NARES and prioritise intervention areas	Consultancy	
							Support the upgrading of infrastructure needs of NARES		
							Capacitate human capital based on the capacity needs of NARES	Training (No. of people trained)	
	Number of regional centres of leadership (RCoLs) established / strengthened					Facilitate the establishment of new and strengthening of existing regional centres of leadership RCoLs	Undertake needs assessments for the establishment of new RCoLs	Report	
		5	At least 10		Limited brain drain		Develop guidelines for the establishment of new and maintenance of existing RCoLs	Inhouse Guidelines development	
							Support the establishment and capacity building of RCoLs	RCoLs	
Output 2.3: Harmonisation of national and regional food and agriculture policies supported	Number of regional agricultural policies / strategies domesticated by MS	0	At least 3	Number of seed companies using SADC regional seed catalogue .	This matrix is haphazard. The challenges in SADC are seeds, fertilizer, water, output markets.	Facilitate domestication of the regional seed policy at country level.	Establish the status of harmonisation of national seed regulatory systems to regional strategies including focusing on integration of seed supply systems.	Consultancy	
								Facilitate the alignment of national agricultural policies / strategies with the SADC's regional policies	Exchange Visits / Trainings
								Assist Member States to sign and ratify the SADC Seed Charter in compliance with the SADC Harmonised Seed Regulatory System (HSRS) including the development/alignment and operationalization of (1) Variety Release Systems, (2) Seed Certification and Quality Systems & (3) Phytosanitary and Quarantine Measures	Advocacy
								Facilitate awareness and establishment of Plant Breeders' Rights that are relevant to the growth of the farmer	Advocacy
								Support the NARES to identify and capacitate key stakeholders (private sector, farmers, CSO, Government, etc.) in the seed sector	Workshops
				CCARDESA reports	MS support the processes		Facilitate the implementation of the AU Fertiliser and Soil-Health Action Plan and the Soil Initiative for	Coordinate harmonization of national policies and regulatory frameworks on fertilizer formulations for long term sustainability and use efficiency	Workshops
								Support actualisation of precision of agriculture through digital soil mapping	Consultancy

Strategic Objective	Strengthen capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors							
Result Area	RA2: Strengthened capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors							
Outputs	Output Indicators	Baseline (2020)	Target (2029)	Means of Verification	Assumptions	Main Activity	Sub-Activity	Means of Implementation
						Africa Framework in the SADC Region	Support collaborative and adaptive research to tackle fertiliser use and soil health challenges and improve the quality of support to smallholder farmers.	Research
							Advocate for efficient climate-smart agronomic practices to improve soil health and consequently fertilizer use efficiency.	Meetings / Demonstrations
							Advocate for soil health improvement programmes that mainstream organic resources as an ecological pathway to improving soil carbon and reduce GHG emissions	Demonstrations / Workshops
							Develop a road map for the establishment and implementation of Soil Initiative for Africa (SIA) Regional Hub at CCARDESA.	Workshop
							Facilitate regional learning events for promoting improved policies, Investment, Finance and Markets for Sustainable Soil Health and Fertilizer Management	Workshops
							Facilitate the identification and adoption of strategies and policy instruments of high agricultural or ecological importance for protection, restoration, and sustainable management to improve soil health. (Land scape management).	Demonstrations / Workshops
							Facilitate adoption of appropriate technologies for effective use of water including groundwater for agriculture	Demonstrations / Workshops

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Strategic Objective								
Improve resource mobilisation and enhanced partnerships in agricultural research and development								
Result Area								
RA 3: Enhanced resource mobilisation, partnerships and collaborations in agricultural research and development								
Outputs	Output Indicators	Baseline (2020)	Target (2029)	Means of verification	Assumptions	Main Activity	Sub-Activity	Means of Implementation
Output 3.1: Resource mobilisation systems for CCARDESA and NARES systems strengthened	Number of NARES capacitated to mobilize resources	0	At least 10	CCARDESA training reports	Limited brain drain	Facilitate resources mobilization interventions for the NARES	Capacitate NARES to develop national bankable project proposals	Training workshops
							Coordinate and collaborate with NARES in the development of regional bankable project proposals to finance agricultural research efforts	Training workshops
							Engage international partners to mobilize resources for NARES to implement national research agendas	Donor Round Table
							Collaborate with SADC Secretariat to mobilize resources for regional research programmes	Meetings
						Facilitate resources mobilization interventions for the CCARDESA	Develop a business model and lobby for funding for CCARDESA operations	Consultancy
							Engage international partners to mobilize resources for CCARDESA to coordinate implementation of the regional research agenda	Donor Round Table
Output 3.2: New strategic partnerships and collaborations established and existing ones strengthened	Number of partnership MOUs established	2	At least 10	CCARDESA reports		Facilitate establishment of new strategic partnerships and strengthening of existing ones.	Capacitate CCARDESA to develop bankable project proposals for different international cooperating partners, development partners and donors	Training workshops
							Facilitate implementation of joint programmes with existing and new partnerships.	Meetings
							Develop stakeholder engagement and advocacy mechanisms	Consultancy

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Strategic Objective								
Enhance gender, youth and social inclusion for their effective participation in agricultural value chains								
Result Area								
RA 4: Enhanced gender, youth and social inclusion for their effective participation in agricultural value chains								
Outputs	Output Indicators	Baseline	Target (2029)	Means of Verification	Assumptions	Main Activity	Sub-Activity	Means of Implementation
Output 4.1: NARES supported to develop gender-sensitive interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains.	Number of NARES supported to develop interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains		At least 10	Training reports	MS support the programmes	Facilitate development and implementation of gender-sensitive interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains	Support NARES to capacitate youth, women and vulnerable groups to access agriculture support services (technologies, finance, markets, etc)	Knowledge exchange and transfer symposium, regional knowledge exchange visits
							Support development and scaling of gender responsive and youth focused value chains and agribusinesses	Training
							Facilitate the participation of women, youth and vulnerable groups in agricultural science and innovation	Lobbying & Meetings for targeted participants
Output 4.2: AR4D technologies, innovations and sustainable management practices specifically targeting women, youth and vulnerable groups developed and promoted	Number of technologies and innovations favourable for women, youth and vulnerable groups promoted		At least 6	Reports, success stories and videos	MS support the programmes	Promote the uptake of labour-, energy-, and time-saving appropriate scale technologies and innovations favourable for women, youth and vulnerable groups	Identify and develop a compendium of labour-, energy-, and time-saving appropriate scale technologies for women, youth and vulnerable groups	Knowledge exchange and transfer symposium, knowledge exchange regional visits
							Promote adoption and use of labour-, energy-, and time-saving appropriate scale technologies by women, youths, and the vulnerable groups	Knowledge exchange and transfer symposium, knowledge exchange regional visits

Strategic Objective								
Promote sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks								
Result Area								
RA 5: Sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks								
Outputs	Output Indicators	Baseline (2020)	Target (2029)	Means of Verification	Assumptions	Main Activity	Sub-Activity	Means of Implementation
Output 5.1: AR4D systems capacitated to support climate change mitigation and adaptation for resilience-building at regional and national level.	Number of MS capacitated to support climate change mitigation and adaptation for resilience-building programmes at national level	0	At least 13	CCARDESA reports		Support development and implementation of climate change mitigation and adaptation practices for building resilient agri-food systems	Capacity assessment of national AR4D systems to support climate change mitigation and adaptation for resilience-building programmes at national level	Study
					MS support implementation of programmes		Based on study results above, promote and scale climate-smart technologies, innovations, and management practices with high potential for resilience building	Demonstrations / Workshops
							Facilitate widespread sharing of early warning and disaster risk information to support in resilience building	CCARDESA Hub
							Provide targeted capacity strengthening to priority areas of the NARES on disaster risks and disaster risk management such as trainings, learning visits, mentoring, etc.	Training
Output 5.2: AR4D systems capacitated to support sustainable management of natural resources at regional and national level.	Number of MS capacitated to support sustainable management of natural resources at national level	0	At least 13			Facilitate sustainable management of natural resources	Capacity assessment of national AR4D systems to support agroecology	Consultancy
					MS support implementation of programmes		Suitability mapping of natural resources for matching natural environment with prioritised national agricultural commodities	GIS, Remote Sensing, Modelling
							Support packaging of good agricultural practices for sustainable management of natural resources	Documentary
Output 5.3: AR4D systems capacitated to support management of transboundary pests and disease in a sustainable manner at regional and national levels.	Number of MS capacitated to support sustainable management of transboundary pests and diseases	0	At least 13			Facilitate capacity building on the effective management of transboundary pests and diseases, phytosanitary measures, and other resilience-enhancing technologies and management practices	Strengthen cooperation and implementation of best practices including guidelines for the management of trans-boundary pests and diseases	Partnerships / Training
					MS support implementation of programmes		Coordinate implementation of research on and management of emerging pests and diseases of economic importance in the SADC region	Partnerships / Research
							Adapt AR4D technologies and strategies for early warning systems, surveillance and monitoring tools for effective management of transboundary pests and diseases of regional economic importance	Adaptive Research
Output 5.4 Inclusive fertiliser and soil health management practices for resilient agri-food systems promoted	(a) Number of fertiliser and soil-health management practices promoted (b) Number of Member States implementing fertiliser and soil health management practices					Facilitate the implementation of the AU Fertiliser and Soil-Health Action Plan and the Soil Initiative for Africa Framework in the SADC Region	Coordinate harmonization of national policies and regulatory frameworks on fertilizer formulations for long term sustainability and use efficiency	Workshops
							Support actualisation of precision of agriculture through digital soil mapping	Consultancy
							Support collaborative and adaptive research to tackle fertiliser use and soil health challenges and improve the quality of support to smallholder farmers.	Research

Strategic Objective	Promote sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks							
Result Area	RA 5: Sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks							
Outputs	Output Indicators	Baseline (2020)	Target (2029)	Means of Verification	Assumptions	Main Activity	Sub-Activity	Means of Implementation
							Advocate for efficient climate-smart agronomic practices to improve soil health and consequently fertilizer use efficiency,	Meetings / Demonstrations
							Advocate for soil health improvement programmes that mainstream organic resources as an ecological pathway to improving soil carbon and reduce GHG emissions	Demonstrations / Workshops
		0	5				Establish and implement Soil Initiative for Africa (SIA) Regional Hub at CCARDESA.	In-house
		0	13				Facilitate regional learning events for promoting improved policies, Investment, Finance and Markets for Sustainable Soil Health and Fertilizer Management	Workshops
							Facilitate the identification and adoption of strategies and policy instruments of high agricultural or ecological importance for protection, restoration, and sustainable management to improve soil health. (Land scape management).	Demonstrations / Workshops
							Facilitate adoption of appropriate technologies for effective use of water including groundwater for agriculture	Demonstrations / Workshops

Strategic Objective	Promote mainstreaming and use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems by diverse CCARDESA stakeholders enhanced							
Results Area	RA 6: Use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems by diverse CCARDESA stakeholders enhanced							
Outputs	Output Indicators	Baseline (2020)	Target (2029)	Means of Verification	Assumptions	Main Activity	Sub-Activity	Means of Implementation
Output 6.1: NARES institutions strengthened in information packaging and use of digital innovations and ICT for the transformation of agriculture through research and extension	Number of NARES institutions supported	3	At least 13			Facilitate information packaging and use of digital innovations	Support and promote compliance to best practices and international standards for collecting, packaging and disseminating agricultural research information	Training on compliance to best practices and international standards
				CCARDESA reports	MS have operation ITC systems		Facilitate gender sensitive and inclusive capacity building on the use of digital innovations (e.g. e-Extension, e-Commerce, CCARDESA mobile app, SAWBO , etc)	Trainings on use of digital innovations including sharing and documentation of success stories.
Output 6.2: Regional and national knowledge management hubs to foster collaboration and information sharing among various stakeholders established/strengthened.	a. Existence of functional regional knowledge hub b. Number of functional national knowledge hubs	0	1	functional Knowledge Hub		Establish/Strengthen knowledge management hubs to foster collaboration and information sharing among various stakeholders in the region	Strengthen the existing CCARDESA ICKM hub including lateral exchange and collaborations amongst national hubs	Hold Annual Regional ICKM Community of practice meetings
		3	10	functional Knowledge Hub	Limited brain drain		Facilitate the establishment/strengthening of national ICKM hubs to enhance access and adoption of ICT	Consultative meetings
							Develop and disseminate knowledge products and services in support of increased adoption of research results by agricultural value chain actors	Knowledge Products KM4AgD Training Challenge participation
Output 6.3: CCARDESA Visibility enhanced	(a) Number of stakeholders aware of CCARDESA (b) Number of stakeholders using CCARDESA knowledge products (c) Number of visits to CCARDESA websites	TBD	TBD		Stakeholders have access to ICT facilities	Implement activities and promote products that enhance visibility of CCARDESA	Develop CCARDESA success and impact stories and share with MS and stakeholders	Exchange Visits & Publications CCARDESA Publications
		TBD	TBD				Hold biennial scientific symposia to coincide with the General Assembly	Symposia
		TBD	TBD				Maintain an up-to-date website and social media platforms	In-house
							Participation in partner conferences symposia	Exhibits / Side Events
							Branding materials produced and distributed	Branded material

8.6. Annex 6: Risk Matrix (Risk to CCARDESA attaining its objectives)

Category	Risk	Likelihood	Impact Description	Impact Level	Risk Response (to mitigate)	Residual Risk Level (after response)	Risk Owner
SADC Member States	Macro-economic challenges affect continuity of funding from Member States	Medium	Inability to fully implement the Strategic Plan and sustain critical administrative staff and services	High	Strong value proposition and continuous engagement at senior political levels.	Low	Chairperson of the Board of Directors
	Political instability in Member States	Medium	Non-participation of affected Member States in CCARDESA regional programmes	Medium	Promote multi-country AR4D programmes to spread risk and reduce impact.	Low	Executive Director
SADC Secretariat including the Council of Ministers	Competing Needs and lack of Funding to support Agric Research and Development Mandate	Medium	Inability to fully implement the Strategic Plan and sustain critical administrative staff and services	High	Strong value proposition and continuous engagement at senior political levels.	Low	Executive Director
Continental level including from Institutions such as African Union , FARA and sister Organisations	Convergence in work and areas of interest	Medium		Medium	Increased regional partnerships and engagement towards collaborative action	Low	Executive Director
	Increased Competition for funding from ICPs	Medium	inability to fully implement the Strategic Plan and sustain critical administrative staff and services	Medium	Increased regional partnerships and engagement towards collaborative action	Low	Executive Director
Development Partners and Donors	Uncertain financial support from development partners	High	Inability to fully implement the Strategic Plan	High	Strong documentation and messaging on impacts achieved by CCARDESA.	Medium	Executive Director

Category	Risk	Likelihood	Impact Description	Impact Level	Risk Response (to mitigate)	Residual Risk Level (after response)	Risk Owner
AR4D Collaborative partnerships	Impact of agricultural AR4D under scrutiny	Medium	Inability to mobilise financial resources for research	Medium	Effective communication of AR4D value added to impact delivery.	Low	Executive Director
Technical level	New technologies and innovations proving more difficult or costly to develop than anticipated	Medium	Fewer technologies and innovations generated	Medium	Capacity development of researchers and research managers on how to improve value-for-money through better management of research programmes	Low	Managers of research institutions and programmes
Operational Level including resource mobilisation and value for money	High transaction costs of implementing regional collaboration projects	Medium	Inability to fully implement the Strategic Plan	Medium	Effective communication of value-added of regional approaches to achieve impact and agricultural transformation.	Low	Executive Director
	Limited bankable project proposal development capacity resulting in poor funding	High	Inability to mobilise financial resources for research	High	Increased Resource Mobilisation Efforts and Collaborations	Medium	Executive Director

8.7. Annex 7: Risk Matrix (Risk from CCARDESA achieving its objectives)

Category	Risk	Likelihood	Impact Description	Impact Level	Risk Response (to mitigate)	Residual Risk Level (after response)	Risk Owner
Coordinated Agricultural research and development in the SADC.	Social and environmental externalities including impact on soil health, displacement of communities and environmental pollution	Medium	Externalities may harm natural and traditional norms of target communities including displacement, impact on natural environment, impact of fertilisers, mechanical equipment etc	Low	Engagement with Local communities, impact assessments, compensation and restoration	Low	Executive Director
	Erosion of culture through abandonment / extension of indigenous ways of doing things (e.g. OPVs, technology, fertilisers)		Loss of cultural ways of agriculture		Agroecology / promote both hybrids and OPVs		
	Technologies that continue to grow the divide between smallholder farmers and commercial farming						
Improved exchange of information and technology among SADC Member States.	Negative externalities on National ICT industries and innovations	Low	Impact of imported technologies on local ICT industry, technological advancements, innovations, employment, research and development agendas.	Low	Engagement, partnerships and Collaboration with local ICT industry to avoid skill importation and increase support capacity of imported technologies	Low	Project Coordinators
Enhanced partnerships in agricultural research and development.	National importation of research and development practices that may have negative impact	Low	Diluted and divergence in areas on MS research priorities and strategies	Low	Engagement, partnerships and Collaboration with NARES and MS stakeholders	Low	Executive Director

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Category	Risk	Likelihood	Impact Description	Impact Level	Risk Response (to mitigate)	Residual Risk Level (after response)	Risk Owner
	on national values, agenda and priorities						
	Partnerships resulting in loss of funding / name – outcompeting CCARDESA to get funding, e.g. funding						
	Working with Focal Point persons stands to benefit but without benefiting them fairly						
Improved agricultural technology generation, dissemination and adoption.	National importation of TIMPS that may have negative impact on environmental and socio-economic wellbeing of communities	Medium	Risk of compromised health, social and environmental factors from externalities from adopted TIMPS that may arise post project implementation	High	Conduct Baseline studies and Continued Monitoring and impact assessments of projects post implementation period	Medium	Project Coordinators
	Increasing area planted as a result of improved production means taking away more land for agriculture				EP		
Enhanced resources for agricultural research and development mobilised.	Unintended importation of external parties' agendas through Research and development funding that may have unintended consequences on the social and moral fabric of target communities	High	Divergence in MS Research priorities, increased donor dependency and inheritance of external parties' agendas	High	Negotiated Financing Agreements that ensure that Research priorities and National Agendas are strengthened, and externalities of donor aid are minimised	Medium	Project Coordinators
	Loss of own agenda in preference to the source of funding – prioritisation of the agenda will be				Share priority and promote our value proposition , i.e, the value CCARDESA brings to the other party		

Category	Risk	Likelihood	Impact Description	Impact Level	Risk Response (to mitigate)	Residual Risk Level (after response)	Risk Owner
	screwed to funding agents						
	Strings attached to the agenda, e.g. inclusiveness that do not resonate with cultural norms – destroying the moral fabric						
	Resources from sources that want to promote compromised solutions e.g. GMO crops				Employ effectively international commitments on fairness and use of local resources, conservation of diversity.		

8.8. Annex 8: Detailed Cost Estimation for Implementation of MTOPIII

**CCARDESA MTOPIII (2025 – 2029)
SUMMARISED BUDGET (2025 – 2029)**

Strategic Objective	Catalyse and coordinate the generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains.		BUDGET - ESTIMATED COSTS (2025 – 2029)					
Results Area	RA 1: Improved coordination, generation, dissemination and adoption of R&D technologies, innovations and management practices for increased agricultural production, productivity and competitiveness in the agri-food systems especially amongst smallholder farmers, small to medium enterprise agri-business, and priority value chains							
Outputs	Output Indicators	Main Activity	Yr1	Yr2	Yr3	Yr4	Yr5	Total
Output 1.1: New and existing climate smart technologies, innovations and sustainable management practices (for crops, livestock, fisheries and forestry products) developed and promoted by NARES in the SADC Member States.	Number of new agricultural technologies, innovations and sustainable management practices developed	Coordinate and facilitate development, generation and adaptation of new technologies, innovations and management practices for use by value chain actors	487,100	487,100	487,100	487,100	487,100	2,435,500
	Number of new and existing technologies, innovations and sustainable management practices promoted by NARES for adoption by value chain actors	Coordinate and facilitate the promotion of new and existing technologies, innovations and management practices for adoption by value chain actors	592,350	592,350	592,350	592,350	592,350	2,961,750
Output 1.2: Nutrition-sensitive and climate smart agricultural technologies, innovations, sustainable management practices and interventions integrated into AR4D food systems research programmes for crops, livestock, forestry and fisheries to enhance dietary diversity and nutrition outcomes	Number of nutrition sensitive technologies generated by NARS with support from CCARDESA	Facilitate the integration of nutrition sensitive technologies into NARS programmes	54,500	160,900	54,500	160,900	54,500	485,300
	Number of climate smart technologies generated by NARS with support from CCARDESA	Facilitate the integration of climate smart technologies into NARS programmes	54,500	160,900	54,500	160,900	54,500	485,300
Output 1.3: Public sector facilitated, private sector-led and market driven agri-food systems (for crops, livestock, forestry and fisheries) promoted especially to enhance viability of smallholder farming enterprises	Number of MS capacitated to promote market driven production systems including meeting sanitary and phytosanitary standards	Facilitate integration of smallholder farmers into market oriented and viable agricultural value chains	70,750	85,750	139,650	25,750	25,750	347,650

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Output 1.4: Value chain actors' capacity to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness enhanced	Number of MS capacitated to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness	Capacitate value chain actors to access and adopt technologies, innovations and management practices that lead to improved production, productivity and competitiveness	174,500	248,100	248,100	174,500	174,500	1,019,700
TOTAL RA1			1,433,700	1,735,100	1,576,200	1,601,500	1,388,700	7,735,200
Strategic Objective	Strengthen capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors		BUDGET - ESTIMATED COSTS (2025 – 2029)					
Result Area	RA2: Strengthened capacity of regional and national agricultural research for development (AR4D) institutions and other agricultural value chain actors							
Outputs	Output Indicators	Main Activity	Yr1	Yr2	Yr3	Yr4	Yr5	Total
Output 2.1: Institutional capacities of CCARDESA strengthened	Capacity of CCARDESA to deliver on its mandate	Facilitate the adequate capacity to deliver the CCARDESA mandate	107,650	46,400	46,400	107,650	46,400	354,500
Output 2.2: Institutional capacities of NARES strengthened.	Number of NARES strengthened	Facilitate the strengthening of NARES	100,050	70,050	70,050	70,050	70,050	380,250
	Number of regional centres of leadership (RCoLs) established / strengthened	Facilitate the establishment of new and strengthening of existing regional centres of leadership RCoLs	200,000	100,000	100,000	100,000	100,000	600,000
Output 2.3: Harmonisation of national and regional food and agriculture policies supported	Number of regional agricultural policies / strategies domesticated by MS	Facilitate domestication of the regional seed policy at country level.	149,250	119,250	119,250	119,250	119,250	626,250
TOTAL RA2			556,950	335,700	335,700	396,950	335,700	1,961,000
Strategic Objective	Improve resource mobilisation and enhanced partnerships in agricultural research and development		BUDGET - ESTIMATED COSTS (2025 – 2029)					
Result Area	RA 3: Enhanced resource mobilisation, partnerships and collaborations in agricultural research and development							
Outputs	Output Indicators	Main Activity	Yr1	Yr2	Yr3	Yr4	Yr5	Total
Output 3.1: Resource mobilisation systems for CCARDESA and NARES systems strengthened	Number of NARES capacitated to mobilize resources	Facilitate resources mobilization interventions for the NARES	267,000	267,000	267,000	267,000	267,000	1,335,000
		Facilitate resources mobilization interventions for the CCARDESA	118,000	103,000	103,000	103,000	103,000	530,000
Output 3.2: New strategic partnerships and collaborations established and existing ones strengthened	Number of partnership MOUs established	Facilitate establishment of new strategic partnerships and strengthening of existing ones.	73,600	88,600	73,600	73,600	73,600	383,000
TOTAL RA3			458,600	458,600	443,600	443,600	443,600	2,248,000
Strategic Objective	Enhance gender, youth and social inclusion for their effective participation in agricultural value chains		BUDGET - ESTIMATED COSTS (2025 – 2029)					
Result Area	RA 4: Enhanced gender, youth and social inclusion for their effective participation in agricultural value chains							
Outputs	Output Indicators	Main Activity	Yr1	Yr2	Yr3	Yr4	Yr5	Total
Output 4.1: NARES supported to develop gender-sensitive interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains.	Number of NARES supported to develop interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains	Facilitate development and implementation of gender-sensitive interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains	483,100	483,100	483,100	483,100	483,100	2,415,500
Output 4.2: AR4D technologies, innovations and sustainable	Number of technologies and innovations favourable for women, youth and vulnerable groups promoted	Promote the uptake of labour-, energy-, and time-saving appropriate scale technologies and innovations favourable for women, youth and vulnerable groups	279,200	279,200	88,900	88,900	-	736,200

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management practices specifically targeting women, youth and vulnerable groups developed and promoted								
TOTAL RA4			762,300	762,300	572,000	572,000	483,100	3,151,700
Strategic Objective	Promote sustainable management of natural resources, including agroecology, fertilizer & soil health management for increased resilience to climate change and other emerging agricultural risks		BUDGET - ESTIMATED COSTS (2025 – 2029)					
Result Area								
Outputs	Output Indicators	Main Activity	Yr1	Yr2	Yr3	Yr4	Yr5	Total
Output 5.1: AR4D systems capacitated to support climate change mitigation and adaptation for resilience-building at regional and national level.	Number of MS capacitated to support climate change mitigation and adaptation for resilience-building programmes at national level	Support development and implementation of climate change mitigation and adaptation practices for building resilient agri-food systems	113,700	91,200	91,200	91,200	91,200	478,500
Output 5.2: AR4D systems capacitated to support sustainable management of natural resources at regional and national level.	Number of MS capacitated to support sustainable management of natural resources at national level	Facilitate sustainable management of natural resources	110,000	50,000	50,000	50,000	50,000	310,000
Output 5.3: AR4D systems capacitated to support management of transboundary pests and disease in a sustainable manner at regional and national levels.	Number of MS capacitated to support sustainable management of transboundary pests and diseases	Facilitate capacity building on the effective management of transboundary pests and diseases, phytosanitary measures, and other resilience-enhancing technologies and management practices	277,800	277,800	277,800	277,800	277,800	1,389,000
Output 5.4 Inclusive fertiliser and soil health management practices for resilient agri-food systems promoted	(a) Number of fertiliser and soil-health management practices promoted (b) Number of Member States implementing fertilizer and soil health management practices	Facilitate the implementation of the AU Fertiliser and Soil-Health Action Plan and the Soil Initiative for Africa Framework in the SADC Region	2,549,505	20,733,150	20,733,150	20,733,150	9,142,150	73,891,105
TOTAL RA5			3,051,005	21,152,150	21,152,150	21,152,150	9,561,150	76,068,605
Strategic Objective	Promote mainstreaming and use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems by diverse CCARDESA stakeholders enhanced		BUDGET - ESTIMATED COSTS (2025 – 2029)					
Results Area	RA 6: Use of improved agricultural digital solutions and agricultural information, communication and knowledge management systems by diverse CCARDESA stakeholders enhanced							
Outputs	Output Indicators	Main Activity	Yr1	Yr2	Yr3	Yr4	Yr5	Total
Output 6.1: NARES institutions strengthened in information packaging and use of digital innovations and ICT for the transformation of agriculture through research and extension	Number of NARES institutions supported	Facilitate information packaging and use of digital innovations	177,800	88,900	88,900	177,800	88,900	622,300
Output 6.2: Regional and national knowledge management hubs to foster collaboration and information sharing	a. Existence of functional regional knowledge hub b. Number of functional national knowledge hubs	Establish/Strengthen knowledge management hubs to foster collaboration and information sharing among various stakeholders in the region	179,300	191,400	191,400	191,400	191,400	944,900

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among various stakeholders established/strengthened.								
Output 6.3: CCARDESA Visibility enhanced	(a) Number of stakeholders aware of CCARDESA (b) Number of stakeholders using CCARDESA knowledge products (c) Number of visits to CCARDESA websites	Implement activities and promote products that enhance visibility of CCARDESA	180,450	458,150	180,450	459,650	180,450	1,459,150
TOTAL RA6			537,550	738,450	460,750	828,850	460,750	3,026,350
GRAND TOTAL			6,800,105	25,182,300	24,540,400	24,995,050	12,673,000	94,190,855

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