

**THE CENTRE FOR COORDINATION OF AGRICULTURAL RESEARCH AND  
DEVELOPMENT FOR SOUTHERN AFRICA (CCARDESA)**

**LONG-TERM STRATEGIC PLAN**

**2020-2029**



**October 2019**

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## ABBREVIATIONS AND ACRONYMS

AGT	Africa Accelerated Agricultural Growth and Transformation
ACCRA	Adaptation to Climate Change in Rural Areas (in Southern Africa)
AFAAS	African Forum for Agricultural Advisory Services
AgGDP	Agricultural Gross Domestic Product
AGRA	Alliance for a Green Revolution in Africa
AIS	Agricultural Innovation System
AR4D	Agricultural Research for Development
APPSA	Agriculture Productivity Programme for Southern Africa
ASARECA	Association for Strengthening Agricultural Research in East and Central Africa
CARWG	Conservation Agriculture Regional Working Group
CCARDESA	Centre for Coordination of Agricultural Research and Development for Southern Africa
CCSAP	Climate Change Strategy and Action Plan
CGIAR	Consultative Group for International Agricultural Research
CORAF	West and Central African Council for Agricultural Research and Development
DRRM	Disaster Risk Reduction Management
ETOP	Emergency
FANR	Food, Agriculture and Natural Resources
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
FAO	Food and Agriculture Organisation of the United Nations
FARA	Forum for Agricultural Research in Africa
FNSS	Food and Nutrition Security Strategy
GALVmed	Global Alliance for Livestock Veterinary Medicines
GIZ	Gesellschaft für Internationale Zusammenarbeit
ICKM	Information, Communication and Knowledge Management
ICP	International Cooperation Partner
IDRC	International Development Research Centre
IFPRI	International Food Policy Research Institute
IPCC	Intergovernmental Panel on Climate Change
IT	Information Technology
ITC	Information, Technology and Communication

M&E	Monitoring and Evaluation
MTOP	Medium-Term Operational Plan
NAIP	National Agriculture Investment Plan
NARES	National Agricultural Research and Extension System
NARS	National Agricultural Research System
NASRO	North African Sub-Regional Organisation
NGO	Non-Governmental Organisation
NDC	Nationally Determined Commitment
NSA	Non-State Actor
OCA	Organisational Capacity Assessment
OIE	World Organisation for Animal Health
PABRA	Pan-Africa Bean Research Alliance
PSTAD	Promoting Science and Technology for Agricultural Development
RAIP	Regional Agriculture Investment Plan
RAP	Regional Agricultural Policy
R&D	Research and Development
RISDP	Regional Indicative Development Plan
RUFORUM	Regional Forum for Capacity Building in Agriculture
RVAC	Regional Vulnerability Assessment Committee
S3A	Science Agenda for Agriculture in Africa
S4ARC	Science for Research in Africa Consortium
SAAIKS	Southern Africa Agricultural Information and Knowledge Systems
SABREN	Southern Africa Bean Research Network
SADC	Southern Africa Development Community
SDG	Sustainable Development Goal
SSA	Sub-Saharan Africa
SRO	Sub-regional Research Organisation
SWOT	Strengths, Weaknesses, Opportunities and Threats
UN	United Nations
UNFCC	United Nations Framework Convention on Climate Change
UniBRAIN	Universities, Business and Research in Agricultural Innovation

## EXECUTIVE SUMMARY

### Introduction

The important role of science and technology in agricultural development is extensively acknowledged in a number of regional and continental policy frameworks namely; the revised SADC's Regional Indicative Strategic Development Plan (RISDP) 2015 – 2020 and the 2003 Dar-es-Salaam Declaration on Agriculture and Food Security, the Comprehensive Africa Agriculture Development Programme (CAADP) of the New Partnership for Africa's Development (NEPAD). Specifically the SADC Regional Agricultural Policy (SADC-RAP) has assigned research-related responsibilities to the Centre for Coordination of Agricultural and Development for Southern Africa (CCARDES) and some other key players.

In order to deliver on its mandate of coordinating research and development, CCARDESA following its official establishment in 2010, it developed its first Medium-Term Operational Plan covering the period 2014-2018 in 2013. This Strategic Plan 2020 – 2029 is a successor long-term Strategic plan that seeks to respond to the needs of the SADC Member States and takes into account recent developments.

The Strategic Plan is well aligned to various relevant SADC policy and strategy frameworks including the revised Regional Indicative Strategic Development Plan (RISDP), the SADC Regional Agriculture Policy and other related documents. At continental level the Strategic Plan is aligned to the Comprehensive Africa Agriculture Development Programme (CAADP); the Malabo Declaration; and the Science Agenda for Agriculture in Africa. At global level the Strategic plan is informed by the Sustainable Development Goals (SDGs), specifically those on poverty, hunger, gender equality, productive employment, climate change and sustainable use of terrestrial ecosystems.

The plan is developed within the Agriculture Research for Development (AR4D) paradigm, which puts the needs of farmers and other agricultural value chain actors first. The process was highly participatory evolving most relevant stakeholders at national and regional levels.

### Agriculture, Food and Nutrition Security in SADC

SADC Member States have prioritised agriculture and support small scale farmers in order to increase food production and opportunities for income generation. Agriculture is a major source of exports in several countries, contributing on average about 13% to total export earnings and about 66% to the value of intra-regional trade

The food security situation in the SADC region has been generally satisfactory in the past 5-10 years at macro level, based on total regional supply in comparison to total regional demand. The region has however had perpetual annual food deficits at country level which has led a significant number of people to be in food deficit situation. Recently nutrition security has assumed a central role; the situation in SADC Member States shows high rates of malnutrition. Stunting rates for children under five years of age are over 30% for 10 of the 16-member countries, with four countries registering over 40% stunting rates, translating to a total of 20 million children. Reducing the number of food insecure people and making available technologies, innovations and management practices that can empower farmers and value chain actors is of high priority in Southern Africa and CCARDESA has a significant role to play.

### The Role of Research for Development in Agriculture and Food Systems

There is range of challenges facing the agriculture sector in Southern Africa that AR4D has to address. These among others include: low productivity, environmental degradation, climate change risks, limited market access for smallholders, gender inequality, women disempowerment, youth unemployment and lack of supportive policies. AR4D generates

technologies that address the technical as well as policy challenges faced by farmers and value chain actors for purposes of improving production and productivity. In the face of climate change, the role of AR4D becomes very crucial in generating and disseminating technologies and information that can build ecological and community resilience to climatic shocks and maintains the integrity of food production systems.

The level of investment in agriculture research in the SADC region leaves much to be desired. Despite documented evidence of high return to investment on agricultural research the reality on the ground is that out of the 13 SADC countries for which data were available, a total of eight (50%) countries allocated more than 1% of their Agriculture GDP to agricultural research and development, while two (12.5%) spent 1% and three (18.75%) were below 1% during the period between 200 to 2014. This is in contrast with the commitment by African Heads of State and Government to spend at least 1% of agricultural GDP on AR4D.

There are differences among value chains in the region, some commodities are heavily supported by public sector (e.g. Maize in some SADC countries) while others (e.g. Sugarcane, wheat, coffee) are mostly in the hands of the private sector, with minimal direct intervention from governments. Some commodities are traditionally taken for food security systems rather than the commercial markets affecting the level of investments in developing the value chains.

Prior to now, most of the effort by CCARDESA was directed towards livestock and crops. During the period of this strategic plan, the next ten years, effort will be shifted to diversify the coverage to include fisheries and non-timber forest products.

### **Technical Foundation for the 2020-2029 Strategic Plan**

The plan recognises that a multi-sector approach is required to address the various challenges confronting the agriculture sector in SADC region and exploit the huge potential the region has in terms of its natural resource base. The region has adequate political commitment and a good appreciation of the importance of increased and sustained investment in agricultural research and that this yields substantial returns although this has not in practice translated into substantial resource allocation to the sector. The establishment of CCARDESA is a clear manifestation of the commitment and appreciation. The unique position of CCARDESA since establishment in 2010 gives it un-paralled comparative advantage in the region to deliver a number of outputs of outputs necessary agricultural transformation.

This centrality and uniqueness of CCARDESA's position in the region is as a result of the following attributes: i) it is owned and partly funded by SADC Member States; ii) it has a clear and uncontested mandate from SADC; iii) it has convening power; its status gives it an ability to achieve a regional multiplier effect; iv) its autonomy from SADC allows it to provide independent counsel on policy issues; v) it has a functional Information, Communication and Knowledge Management (ICKM) system that has good following and linkage to the SADC countries; vii) and it has had 7 years' experience of programme implementation in the region, with significant lessons learned

Using positive environment within the NARES, with the support of the Cooperating Partners and the existing political will of the SADC Member States, CCARDESA recorded a number of achievements during the 2014-2019 period in 8 categories: i) Regional focal point of agricultural research, ii) Technology generation (Research), iii) Dissemination of technologies, iv) Capacity building, v) Resource mobilisation, vi) Information and knowledge brokerage, vii) Effective Governance, and viii) Partnerships and networking.

## **CCARDESA's Operational Environment**

CCARDESA's external and internal environment present some strengths, weaknesses, opportunities and threats that can be enhanced or mitigated for the successful implementation of this strategic plan

Its legal mandate, derived from the SADC Committee of Ministers responsible for Agriculture and Food Security decision, gives it distinct regional political legitimacy to coordinate agricultural research and development in the region. This coupled with demonstrated commitment through financial contributions by SADC Member States boosts the confidence of cooperating partners and strengthens CCARDESA's centrality in agricultural research and development. All this provides a favourable operating environment for CCARDESA.

The increasing role of ICT in Agriculture and the impact of climate change to the farming systems of both the commercial and smallholder farmers will shape the business landscape of CCARDESA and will influence actions and priorities of the organization during the ten year period of this strategic plan.

Seven years of implementing multi-country regional programmes, nurturing of various partnerships and interacting with cooperating partners, CCARDESA has gone through a learning process and has gained adequate lessons that will inform the implementation of the current strategic plan. These lessons point to the need to remain vigilant in maintaining and strengthening internal control systems, resource mobilisation efforts, annual work planning and budgeting, procurement, human resources management, financial management, risk management as well as monitoring and evaluation. The internal operating environment will be assessed periodically to identify areas that need improvement and those that need to be maintained. This will be part of CCARDESA's effort to maintain high standards and follow international good practice.

## **Value Proposition**

CCARDESA intends to address regional agricultural research and development in the SADC through the following interventions:

- Coordinating implementation of regional AR4D programmes;
- Facilitating collaboration among stakeholders of the national agricultural research systems (NARS);
- Promoting public–private partnerships in AR4D;
- Improving agricultural technology generation, dissemination and adoption through collective efforts, training and capacity building; and,
- Providing information and knowledge products to stakeholders

## **Vision, Mission and Values**

The following are the Vision, Mission and Core Values that will guide the implementation of CCARDESA's 2020 – 2029 Strategic Plan:

### ***Vision***

“Sustainable agricultural growth and socio-economic development in the SADC”.

### ***Mission***

“To set the regional research and development agenda, mobilise resources, support capacity development, foster collaboration and provide agricultural information and knowledge in the SADC”.

**Core Values:** “Integrity, Relevance, Respect, Professionalism, Team work and Innovation”.



## **Theory of Change**

CCARDESA's theory of change is premised on hierarchical progression and relation of actions, outputs and outcomes at different levels. Thematic areas are the basis upon which the interventions/activities will be planned and implemented. A set of interventions will lead to the generation of outputs that will produce outcomes for each of the thematic areas. The combined effects of the outcomes will be the final impacts of CCARDESA's interventions, which is expressed in its vision of "*sustainable agricultural growth and socio-economic development in SADC.*"

## **Results and Thematic Areas**

In this Strategic Plan CCARDESA intends to facilitate the delivery of five results which respond to the priorities expressed by stakeholders during the development process. These results are:

- i. Increased agricultural productivity and food and nutrition security;
- ii. Sustainable management of natural resources and increased resilience to climate change and other emerging agricultural risks;
- iii. Increased commercialisation of smallholder agriculture and access to markets;
- iv. Gender equality, women empowerment and increased employment and participation of youth and vulnerable groups in agricultural value chains; and
- v. Strengthened capacity of regional and national AR4D institutions, farmers and other agricultural value chain actors.

The above results will be achieved through implementation of activities in six thematic areas, this represents reduced number of thematic areas, concentrating energies to a few high priority investment areas to achieve maximum impact and these are:

- i. Agricultural productivity and food and nutrition security;
- ii. Resilience to emerging agricultural risks: environmental, climate change and transboundary pests and diseases;
- iii. Commercialisation of the agricultural sector and market access
- iv. Women, youth and social inclusion;
- v. Knowledge and information management, communication and policy support; and,
- vi. Capacity strengthening of CCARDESA and AR4D institutions

For each thematic area the plan gives the objective, the strategy to be followed, the expected outcome and outputs to be achieved for each outcome. The context, challenges, opportunities and interventions for each thematic area is also described. The summary of this is tabulated in Annex 4.

## **Delivering the Strategy**

CCARDESA acknowledges that the successful implementation of this Strategic Plan requires the participation of various stakeholders. To that end CCARDESA Secretariat will endeavour to create or / and strengthen partnerships, first with the SADC Secretariat, then with bilateral and multilateral development partners, private sector organisations, appropriate UN agencies, the CGIAR institutions, commodity networks, agri-business associations, regional NGOs, regional and continental farmers' organisations and continental and Sub-regional Research Organisations (SROs).

Secondly the CCARDESA Secretariat will continue to be lean. It will lead and coordinate delivery of this Strategic Plan through the development of Medium-Term Operational Plans (MTOPs) and Annual Work Plans. In accordance with CCARDESA's implementation model of partnerships and the observance of subsidiarity principles, implementation will be done jointly with Member State AR4D institutions and other public and private partner institutions. The Secretariat will facilitate the full operation of CCARDESA's governance structures so

that they perform their roles in the governance of organization and the implementation of this plan.

Two Medium Term Operational Plans (MTOPs) lasting 5 years each will be formulated to guide the implementation of the strategic plan. Broad activities at that level will be described and linked to the outputs and outcomes. The activities will be directly linked to the results framework that will be developed for those two five year periods. The MTOPs will further be broken down to annual work plans that will provide detailed activities to be implemented every year starting in 2020.

### **Tracking Implementation**

Tracking Implementation progress of the Strategic Plan will be done using appropriate monitoring tools. The result frameworks of the ten- year plan and of the two five- year MATOPs will show how the strategies are linked to the planned implementation (resources, activities, outputs, outcomes and impact).

Secondly, CCARDESA will develop a robust Monitoring, Evaluation, Reporting and Learning (MERL) system. Based on the results framework, CCARDESA will also develop an M&E plan which will enable CCARDESA to track, evaluate and report on the implementation of this Strategic Plan at regional and national levels

## CHAPTER 1: INTRODUCTION

### 1.1 Background

Global growth in agricultural productivity is attributed to investments in agricultural research and innovation (OECD, 2016). Investing in agricultural research has been shown to yield high rate of social returns on each dollar spent through increased rural incomes and increased competition in both domestic and international markets (Fuglie and Heisey, 2007). Hence, calls have been made for increased and sustained investment in agricultural research to enhance the attainment of the global commitment to end hunger and poverty enshrined in the Sustainable Development Goals (SDGs).. Such research needs to take into account a number of issues such as climate change, economic transformations, and demographic change as important drivers which are putting pressure on the natural resource base (Maggie Gill and Leslie Lipper, 2018).

In Southern Africa, pressures emanating from the rapidly growing human population and improving incomes are fuelling demand for food and other agricultural products. This is a region in which most inhabitants rely on agriculture directly or indirectly as their main source of income and livelihoods. As a result, it has become imperative for the Southern African Development Community (SADC) countries to take deliberate and concerted actions to harness the abundant natural resources in a sustainable way. This will lead to increased contribution of agriculture to regional economic development and job creation under the various commodity value chains.

Investment in agricultural research and development is widely recognised as a key ingredient and vehicle towards delivering the innovations and technologies necessary to successfully transition from the phase of focussing on increasing production and productivity, to the much needed phase of transformation of the sector. This entails shifting to a growth path based on improved productivity which is essential if the region is to increase rural incomes and compete in domestic and international markets.

The SADC countries have prioritised the agriculture sector as key to overall economic growth, poverty reduction, and enhanced food security and have joined efforts to achieve several regionally, continentally and internationally set targets or goals. The need for the region to do more in enhancing the sector's contribution to economic growth and poverty reduction cannot be overemphasized. The important role of science and technology in agricultural development is also extensively acknowledged in a number of regional and continental policy frameworks namely; the revised SADC's Regional Indicative Strategic Development Plan (RISDP) 2015 – 2020 and the 2003 Dar-es-Salaam Declaration on Agriculture and Food Security, the Comprehensive Africa Agriculture Development Programme (CAADP) of the New Partnership for Africa's Development (NEPAD) and its refreshed commitment; the Malabo Declaration. Furthermore, the SADC Regional Agricultural Policy (SADC-RAP) and its associated investment plan (RAIP) have also outlined the role of agricultural research and development and assigned research-related responsibilities to some key players such as the Centre for Coordination of Agricultural and Development for Southern Africa (CCARDESA).

CCARDESA is a Sub-Regional Research Organisation created by SADC member states to coordinate agricultural research and development in the SADC region. Established in 2010 and formally launched in July 2011 and partnering with national, regional, and continental institutions CCARDESA advances the regional agricultural research agenda. Funding of regional research activities still remains a challenge in the region, hence, partnerships with

regional and national research organizations has become indispensable for resource mobilisation and achieving wide and great impact. Linking agricultural research for development (AR4D) institutions together within larger networks and strengthening partnerships with advanced research institutes and Consultative Group for International Agricultural Research (CGIAR) centres allows each of these national institutions to specialise in prioritised and demand driven research, while benefiting from the research of others. CCARDESA will continue strengthening the AR4D institutions to ensure that research investments are aligned to regional and national development priorities.

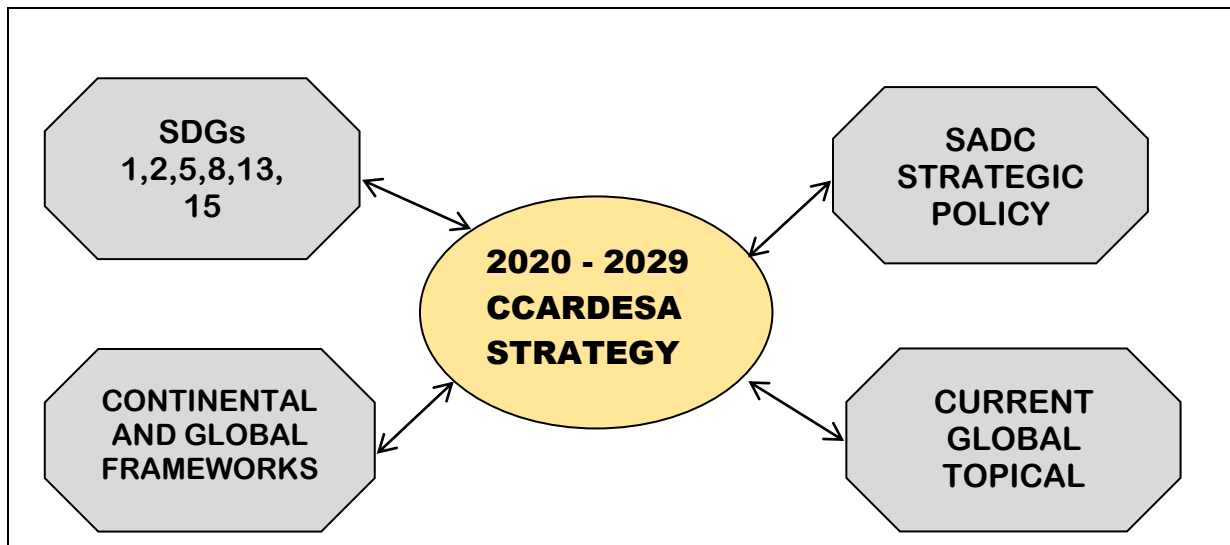
In order to fulfil its mandate of coordinating research in the region, CCARDESA developed its first Medium-Term Operational Plan (MTO) in 2013, which covered the period 2014-2018. The MTO served a dual purpose of being an operational plan as well as a strategy. Since CCARDESA focuses on supporting implementation of strategies of SADC, a strategy that takes into account all the recent developments and positions CCARDESA appropriately for relevance and impact is required. Hence this long-term Strategic Plan that responds to the needs of the SADC Member States becomes very important. This plan states specific thematic strategies for making strong contributions to the implementation of agricultural priorities at national and regional level. It also provides a strong basis for the development and implementation of Medium-Term Operational Plans (MTOs).

## **1.2 Alignment to key strategies**

This Strategic Plan is aligned to the key SADC framework documents, including the revised Regional Indicative Strategic Development Plan (RISDP), the SADC Regional Agricultural Policy (RAP) and its investment plan, the SADC Food and Nutrition Strategy (2015-2025), the SADC Industrialisation Strategy and Road Map (2015-2063), the Climate Change Strategy and Action Plan (2015), and the revised SADC Protocol on Gender and Development, among others.

At continental level the strategic plan is informed by the Comprehensive Africa Agriculture Development Programme (CAADP); the Malabo Declaration; and the Science Agenda for Agriculture in Africa (S3A). Globally, the CCARDESA strategy is fully aligned to the Sustainable Development Goals (SDGs), specifically SDGs 1 (end poverty), 2 (end hunger and achieve food and nutrition security), 5 (gender equality and empower women and girls), 8 (productive employment and decent work for all), 13 (combat climate change and its impacts), 15 (sustainable use of terrestrial ecosystems).

The dynamic nature of the agricultural sector and the other sectors that influence decisions on this sector calls for consideration of current and future predicted trends. Key among these trends is climate change, sustainable utilisation of agricultural production resources as well as the application of digital and artificial intelligence for agricultural production. These were taken into consideration in the development of this strategy. Figure 1 below is a schematic representation of the alignment of the CCARDESA Strategy to the current trends, and the regional, continental and global strategic frameworks.



**Figure 1:** Alignment of the CCARDESA Strategic Plan to SADC frameworks, continental and global frameworks, SDGs and current global trends.

### 1.3 The Process of Developing the Strategic Plan

The CCARDESA Strategic Plan was developed within the AR4D paradigm, which puts the needs of farmers and other agricultural value chain actors first. This sharply contrasts the narrow focus based on supply-driven technology generation that is mainly aimed at improving agricultural productivity (Mbabu and Ochieng, 2006). The plan recognises the fact that the AR4D efforts operate in complex socio-economic environments that are as variable as the communities where the actions are taking place. CCARDESA not only recognises these complexities but is also flexible in its approaches in order to achieve maximum impact. As observed by Boru Douthwaite *et al.* (2017), agricultural research for development organisations can achieve greater impact by using complexity-aware approaches.

AR4D is derived from the Agricultural Innovation System (AIS), a concept that embraces not only the science suppliers but the totality of the interaction of actors involved in innovation. It goes beyond the creation of knowledge and includes factors affecting demand for and use of knowledge in novel and useful ways. It ensures that research and development programmes of an institution are aligned to sectoral, national and regional development goals.

A participatory approach was used to develop the CCARDESA Long-term Strategic Plan (LTSP) and it comprised stakeholder consultations, review of literature, regional consultative workshops and synthesis of all stakeholder inputs. Consultations were conducted with CCARDESA Secretariat staff and representatives of the Board of Directors, Member States' ministries responsible for agriculture and food security, national agriculture research and extension systems, farmer organisations, private sector, civil society organisations, the Consultative Group on International Agricultural Research (CGIAR) centres, sister sub-regional research organisations (SROs) and international cooperating partners (ICPs).

### 1.4 The Structure of this Strategic Plan

This Strategic Plan (SP) comprises eight chapters as follows:

**Chapter One** is the introduction that gives the background to this SP, alignment to various policy and strategy instruments at international, regional and national levels and describes

the interactive and consultative process of developing the SP. It also gives the structure of the plan.

**Chapter Two** provides the context by highlighting the agriculture, food and nutrition security issues and trends at continental and regional levels, the challenges and factors affecting agriculture, food and nutrition security and describes the role of agricultural research and development in contributing to addressing these constraints and attaining the various aspirations as contained in relevant policies and strategies. The chapter also provides the technical justification for the development of the SP given CCADERSA's pivotal role in coordinating research and development in the SADC region as mandated by Committee of SADC ministers responsible for agriculture and food security. Finally it analyses CCARDESA's internal and external operational environment that must be considered in the implementation of the SP.

**Chapter Three** very briefly expounds CCARDESA's mandate for coordinating AR4D in the SADC region which is well supported politically and technically and what that mandate entails in terms of addressing regional agricultural research in the SADC through specific intervention areas.

**Chapter Four** gives a summary of the visioning process and gives the desired end of implementing this SP. It gives the vision statement, the mission statement and also provides the core values which CCARDESA and its partners must uphold for the proper delivery of the aspirations in the SP.

**Chapter Five** provides an expression of theory of change by assuming that implementation of a set of carefully identified interventions will lead to the generation of outputs that will lead to outcomes for each of the thematic areas in this SP. The combined effects of the outcomes will be the final impacts of CCARDESA's interventions, which is expressed in its vision

**Chapter Six** is the crux of the SP that presents six thematic areas identified during the process of developing it providing the context, challenges, opportunities, objectives, strategies outcomes and outputs of each of the strategic thematic areas

**Chapter Seven** explains how the SP will be delivered through the existing and yet to be developed partnerships with strategic institutions internationally and in the region emphasizing the vital roles of national AR4D institutions in SADC Member States. The chapter also explains the present CCARDESA's institutional structure, roles and responsibilities of the Secretariat, the general assembly and the Board of Directors.

**Chapter Eight** gives a structured strategy for tracking the progress of implementing the SP through the Results Framework included in the SP and through the Monitoring and Evaluation process that will see the development of a robust Monitoring, Evaluation, Reporting and Learning system.

## CHAPTER 2: THE CONTEXT

### 2.1 Agriculture and Food Security in the SADC Region

The SADC region has an estimated population of 330 million people growing at an average rate of 2.5% per annum about 70% of which draw their livelihoods from agricultural activities as small-scale farmers (SADC RAP, 2011). These farmers live in the rural areas with mostly limited access to resources and amenities. With such a significant proportion of the population engaged in small scale farming, SADC Member States have prioritised the uplifting of the small scale farmers in order to increase food production and opportunities for income generation.

Agriculture is a major source of exports in several countries, contributing on average about 13% to total export earnings and about 66% to the value of intra-regional trade (SADC RAP, 2011). The contribution of agriculture to national GDP is quite significant in the SADC countries, even for those countries where mining is dominant. It is estimated that Agriculture contributes between 4% and 27% of Gross Domestic Product (GDP) in the different SADC countries. It follows, therefore, that agriculture is a critical sector in the region's overall development agenda in terms of social-economic growth, food and nutrition security, poverty reduction and gender equity.

The food security situation in the SADC region has been generally satisfactory in the past 5-10 years at macro level, based on total regional supply in comparison to total regional demand. However, the region has had perpetual annual food deficits at country level which has led to a significant number of people in food deficit situation. In 2019, for example, an estimated 41.2 million people were food insecure. In 2018 the number of food insecure people was estimated at around 30.7million (Table 1).

Table 1: Number of food insecure people in the SADC region (2010-2019)

YEAR	Number of food insecure people
2010	24,161,086
2011	22,787,086
2012	26,768,318
2013	28,426,022
2014	24,281,552
2015	30,448,035
2016	38,357,155
2017	26,886,554
2018	30,740,258
2019	41,193,176

Source: SADC RVAC 2019

Reducing the number of food insecure people and making available technologies, innovations and management practices that can empower farmers and value chain actors is of high priority in Southern Africa. CCARDESA has a significant role to play in contributing to the achievement of the SADC's aspiration of reducing and eliminating food insecurity.

At continental level, food security and agriculture have been given very high priority in the Africa Union (AU) NEPAD vision through the Comprehensive Africa Agriculture Development Programme (CAADP) that has been prepared to realise this priority.

Of late, nutrition security has assumed a central role in analyzing the food security situation of the countries. Analysis of the nutrition security situation in SADC Member States shows high rates of malnutrition as reported by Van Huis *et al.* (2013). Stunting rates for children under five years of age are over 30% for 10 of the 16-member countries, with four countries registering over 40% stunting rates, translating to a total of 20 million children (SADC RVAC, 2018). The proportion of under-five children receiving minimum acceptable diets is very low; it ranges between 8% and 38%.

There are many factors that contribute to the observed food insecurity and malnutrition in Southern Africa. These have been well documented and these include, among others: low agricultural production and productivity, low investments in agriculture; inadequate human and financial capacities; poor access to national, regional and global markets; inadequate and underdeveloped markets for key agricultural inputs; unfavourable policy and legal frameworks; low generation and adoption of innovations; inadequate institutional arrangements/capacities that are not able to address the current needs of the clients; socio-political challenges and climate change.

These factors have limited the progress that the SADC countries have made towards attaining food and nutrition security. In the recent past, the impact of climate change on the agricultural sector and the environment has become severe. For example, the Southern African region experienced three devastating cyclones in 2019, leading to loss of lives, crops and livestock.

Of all the challenges faced by the Southern Africa region, climate change is of highest concern to the farmers and governments as it threatens the productivity of the predominantly rain fed agriculture system prevailing in the region. Climate change is expected to worsen the existing challenges faced by smallholder agriculture and food systems. The overall impact is seen and seriously felt by smallholder farmers through reduced farm productivity to levels that cannot allow the households to meet their food needs. In addition to reduced productivity, climate change has been found to be associated with reduced nutrient content and/or quality of various staple crops, for example zinc, iron and protein content in wheat, rice, field peas and soybeans. Southern Africa is increasingly facing climate change-related extreme weather conditions such as droughts, floods, heat waves, spread of climate-related diseases and pests. These extreme weather events are expected to increase in frequency and intensity under a projected warmer atmosphere (IPCC, 2015). The region has already started experiencing intense weather extremes, with serious consequences on crop and livestock production. Actions that can build resilience to the farming systems are urgently required.

Notwithstanding these challenges, the SADC region has a great potential to sustainably produce a wide range of crops, fish, non-timber forest products and livestock. Potential alone is of limited tangible value until steps have been taken to exploit it in a sustainable manner. SADC countries have taken steps to address these challenges and use the existing potential to spur production, reduce food and nutrition insecurity, improve non-farm income generating opportunities and improve access to amenities. The success has been variable depending on a myriad of factors. Continuous effort is required to overcome these technical challenges and also address the socio-cultural challenges that are dominant within the small-scale farming communities.



## **2.2 The Role of Research for Development in Agriculture and Food Systems**

AR4D in the Southern Africa has to address a range of challenges faced by the sector that, among others, include: low productivity, environmental degradation, climate change risks, poor market access for smallholders, gender inequality, women disempowerment, youth unemployment and lack of supportive policies. There are several options through which AR4D provides options for overcoming the challenges and contributing to improved food systems. It is a tool for modelling and fore-sighting in order to improve long-term planning and development of forward looking strategies. AR4D is also a source of technical evidence that feeds directly into the development of policies that are responsive and relevant to the needs of the clients. Southern Africa needs a continuous flow of technical and socio-cultural evidence to guide the development of evidence based policies and strategies. AR4D generates technologies that address the technical challenges faced by farmers and value chain actors for purposes of improving production and productivity.

The current topical issue of climate change, for example, requires the development and deployment of technologies that can build resilience to climatic shocks of the existing farming systems. In the context of climate change AR4D is a facilitator of production, productivity, policy formulation, understanding the social, cultural and technical dynamics of the sector and providing essential elements for long-term planning.

Delivering agricultural development and showing impact in the form of improved food and nutrition security cannot be achieved through the activities of AR4D institutions alone. Other stakeholders, especially the private and public sectors, have significant roles to play. The two sectors are the key sources of investment in agriculture and their actions have significant impacts on food and nutrition security. The commitment of the SADC Heads of States and Government to the CAADP in 2003 and Malabo Declaration in 2014, for instance, were positive for the sector. However, AR4D in sub-Saharan Africa and the SADC region has registered mixed performance when it comes to investment in agricultural research and development (Stads, 2016).

African Heads of State and Government committed to spend at least 1% of agricultural GDP (AgGDP) on AR4D. During the period 2000-2014, out of the 13 SADC countries for which data were available, a total of eight (50%) countries allocated more than 1% of their AgGDP to agricultural research and development, while two (12.5%) spent 1% and three (18.75%) were below 1%. These low levels of investment in agricultural research are contrary to the high levels of return on investment documented from a number of studies. Nevertheless, these commitments place CCARDESA in the prime position to provide the inputs to countries and facilitate the efforts made at both national and regional levels.

The current situation in the region indicates large variations in the activity and maturity of agricultural value chains. Some commodities are heavily supported by public sector (e.g. Maize in some SADC countries) while others (e.g. Sugarcane, wheat, coffee) are mostly in the hands of the private sector, with minimal direct intervention from governments. On the other hand, some commodities are considered to have their main niches in the traditional food security systems rather than the commercial markets. Such commodities include some legumes (e.g. cowpeas) and cereals like millet. Similarly, the region shows huge variations in the importance attached to the categories of livestock, crops, fisheries and non-timber forest products.

Although these variations do exist, the past and future approach of CCARDESA is to support a broad range of commodities in order to contribute to reduction in food and nutrition insecurity. Between 2013 and 2018, most of the effort was towards livestock and crops. In the next 10 years, the period of this strategic plan, effort will be made to diversify the coverage to include fisheries and non-timber forest products.

## 2.3 Technical Foundation for the 2020-2029 Strategic Plan

The agricultural potential that exists in Southern Africa can be exploited to the maximum through a multi-sector approach to addressing the challenges that exist and introducing technologies that respond to the needs of the farmers and the prevailing political economy. AR4D is a key contributor to the envisaged agricultural-led development in Southern Africa. Southern Africa has adequate political commitment and a good appreciation of the fact that investment in agricultural research yields substantial returns although has not been translated into significant increase in investment in agricultural research.

This commitment and appreciation have however been practically demonstrated by the SADC Member States through the establishment of CCARDESA. The organisation has a unique position in the region and has delivered a number of important outputs since its establishment in 2010. The unique position of CCARDESA in the region is expressed through the following attributes:

- (i) it is owned and partly funded by SADC Member States;
- (ii) it has a clear and uncontested mandate from SADC;
- (iii) it has convening power;
- (iv) its status gives it an ability to achieve a regional multiplier effect;
- (v) its autonomy from SADC allows it to provide independent counsel on policy issues;
- (vi) it has a functional Information, Communication and Knowledge Management (ICKM) system that has good following and linkage to the SADC countries; and
- (vii) It has had 7 years' experience of programme implementation in the region, with significant lessons learned.

Since 2013, CCARDESA has performed its role in supporting fore sighting, providing technical evidence from research, supported the development and dissemination of agricultural technologies, facilitated the development, curation and sharing of knowledge products through its ICKM and community of practice, mobilised resources for research and development, managed a competitive research grant system, managed multi-country research and development projects, and carried out a number of capacity building activities to improve the capacities of the National Agricultural Research and Extension Systems (NARES) in the SADC countries.

Using positive environment within the NARES, support of the Cooperating Partners and the existing political will of the SADC Member States, CCARDESA has made good progress in the implementation of the combined MTOP/Strategy of 2014-2018. The achievements and the lessons learned in this period lay a strong foundation upon which the Strategy for 2020-2029 has been developed. The outputs of the first strategic plan will act as a starting point for the MTOP and annual work plans that will be developed and implemented in the next 10 years. Some of the key achievements of the 2014-2019 period are summarised in the following 8 categories:

### 1. Regional focal point of agricultural research

CCARDESA has successfully established itself as a regional focal point for agricultural research and development in Southern Africa. A number of international cooperating partners have successfully used the position of CCARDESA in the region to provide support to SADC countries. A number of regional projects supported by the World Bank, the European Union (EU), International Food Policy Research Institute (IFPRI), United States Aid for International Development (USAID) and other development partners are regionally coordinated by CCARDESA. CGIAR centres also identify CCARDESA as a strategic regional partner and have reached out for partnership or signed MoUs for collaboration for development and execution

of joint programmes. CCARDESA, therefore, acts as a hub for regional projects and its position enables cooperating partners to reach a number of countries through the provision of support to one central point i.e. CCARDESA.

## 2. Technology generation (Research)

In collaboration with stakeholders in Member States, CCARDESA has implemented a number of projects that have resulted in the development of more than 80 technologies. The approach of CCARDESA in the coordination of these multi-country projects has been based on fostering close collaboration among experts across political borders. This increases efficiency in the use of human and financial resources and also reduces duplications.

In 2014 CCARDESA successfully launched a competitive research grant system which is based on providing an opportunity to a consortium of research and development organisations to access funds on a competitive basis. In the first call for proposals, there was overwhelming response from the organisations in the region. At the end of the cycle seven (7) research grants were awarded to different organisations, each of which led a research consortium. A range of lessons were learnt from the grants that were disbursed, thereby positioning the organisation for more effective grant management in future.

## 3. Dissemination of technologies

CCARDESA places high priority on use of the developed technologies and management practices by the farmers. CCARDESA has supported the dissemination of more than 320 technologies, through various value chains, to the users. The dissemination has also taken place outside countries where the technologies were developed. For seed, this has been made possible by the use of regionally harmonised system that was developed and approved by SADC.

## 4. Capacity building

Starting from 2014 under the Multi Donor Trust Fund (MDTF) resources, CCARDESA has had a very active capacity building programme aimed at improving the skills of technical officers, farmers and women. A number of training programmes have been developed and delivered to different target groups. The Secretariat has trained at least 47,000 people in different fields, assisting them to improve their knowledge and skills in various areas. This includes short term training provided to farmers as well as staff in the public sector.

## 5. Resource mobilisation

Mobilisation of resources for regional agricultural projects has been one of the areas in which CCARDESA invested significant effort. Through its warm relations with ICPs, more than \$100 million was mobilised for the period 2014-2018. The resources came from various sources and were used to generate outputs of priority and relevance to the region.

## 6. Information and knowledge brokerage

CCARDESA has an active knowledge management system which was initially developed in 2014 and has undergone a series of improvements since then. There is an active website which is visited by clients from Africa, Europe, Asia, America, Canada and Australia. CCARDESA also leads an active social media component of communication which includes twitter and facebook. CCARDESA's Information, Communication and Knowledge Management (ICKM) system is operational and it is regularly updated with news and knowledge products. Users rate the system 3.5 on a scale of 1 to 5, with 5 being "very good". The number of visitors to the website is increasing. In the first half of 2019, for example, there were 3,108 additional visitors

to the website, while 114 additional people from 11 SADC countries downloaded documents from the CCARDESA website. Through the CCARDESA ICKM, 660 knowledge products from SADC Member States and beyond are accessible to the visitors to the website. This includes 134 CCARDESA-owned products and 512 curated content. This progress in the ICKM of CCARDESA has been made possible through the combined support of the MDTF, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the Technical Centre for Agricultural and Rural Cooperation ACP –EU (CTA).

### 7. Effective Governance

An effective governance system has been established and has undergone a number of improvements through learning. The system is documented in the Charter and Governance Manual. Its structures are all operational with clear mandates at each level. The learning process is an active part of the governance of CCARDESA and it has been used to increase effectiveness while maintaining a degree of free operating space for the different levels.

### 8. Partnerships and networking

Networking and collaborations constitute major approaches to the work culture of CCARDESA in the region. Formal relations have been developed with strategic partners through signing of memoranda of understanding (MoUs). A total of 10 MoUs have been signed, signifying the existence of formal partnerships. Institutions with which CCARDESA has signed MoUs include: Crops for the Future Research Centre, Regional Agricultural and Environmental Initiative Network-Africa (RAEIN-AFRICA), Common Market for Eastern and Southern Africa (COMESA), Chinese Academy of Agricultural Sciences, the French Agricultural Research Centre for International Development (CIRAD) and the Regional University for Capacity building in Agriculture (RUFORUM). CCARDESA has also forged and maintained several important collaborative links with the NARES and various organisations operating at national, regional and continental levels. These include the other Sub-regional organisations operating in the Eastern and Western Africa regions. The partnerships established by CCARDESA are very critical in the implementation of its programme, in resource mobilisation and in being kept informed about the new developments in the agricultural sector.

## **2.4 CCARDESA's Operational Environment**

The operating environment for any organisation provides opportunities as well as limits of flexibility and performance. The identified opportunities are utilised to the benefit of the clients while the limitations are addressed to ameliorate their effects. CCARDESA's legal mandate, which is derived from a decision of the SADC Committee of Ministers responsible for Agriculture and Food Security, gives CCARDESA a distinct advantage of regional political legitimacy. The fulfilment of financial contributions by SADC Member States demonstrates their commitment to the mandate of CCARDESA and also boosts the confidence of cooperating partners. Therefore, CCARDESA has strong political support from the SADC Member States, and this provides a favourable operating environment with Member States.

There are some key trends that have implications on the business of CCARDESA and will shape the actions and priorities of the organisation in the next 10 years. Key among these is the role of ICT in Agriculture and the impact of climate change to the farming systems of both the commercial and smallholder farmers. Indications are that the two will have significant influence on the agricultural sector. ICT and artificial intelligence are positive developments that have to be harnessed for better performance of the farming systems and the value chains. On the other hand, climate change is an undesirable development against

which measures have to be developed to minimise the negative impacts on the farming systems and value chains.

The potential and growth of ICT technologies is huge and is likely to dictate the operations and activities in this sector. In the post-2020 period, application of the ICT tools and artificial intelligence are likely to become the cornerstone of production and marketing efficiency in agriculture. Southern Africa and CCARDESA will, therefore, be active participants in using these tools to improve the performance throughout the value chains. CCARDESA will promote digital solutions and ICT tools to take advantage of the inherent potential to improve efficiency of the farming systems and the value chains in general. Capacity development for use of digital solutions and ICT tools will be done at different levels at CCARDESA Secretariat, in Member State institutions and other value chain actors, including input suppliers, farmers, local traders, processors and exporters.

Climate change presents both opportunities and threats to CCARDESA and the stakeholders as the impacts continue to increase in the region. This undesirable external factor will influence the actions of national, regional and global actors. Huge efforts will; therefore, be required in providing information and facilitating the development, adoption and use of technologies and approaches to strengthen the resilience of the farming systems of the smallholder farmers in Southern Africa. This will be critical in preventing the continuous decline of food security as a result of the increasing impacts of climate change. Learning and sharing of information on techniques that can be classified as indigenous knowledge will also play a big role in adaptation to climate change and improving the resilience of the farming systems.

Capacity development is a continuous process in the agricultural sector. It ensures that there is flow of younger experts to provide services and also equip staff and institutions with appropriate level of skills to maintain relevance in a dynamic environment. Capacity development also assists institutions in the NARES to maintain the right level of skills mix to remain relevant in providing a service to clients. The region will continue to require a well-designed capacity development that is fit for the mandates of the stakeholders at country level.

Youth unemployment and the lack of opportunities to the available labour within the national labour market is a serious issue in Southern Africa. The unemployment levels are very high in Southern Africa. The estimate of unemployment levels in the fourteen SADC countries that reported is at 13.25% (SADC, 2018). Agriculture, with its dominant position in the SADC countries, can create job opportunities for the youth and vulnerable groups. It is on this basis that the strengthening of capacity of NARES, Farmer Organisations and other stakeholders in the region is recognised as one of the key issues to be carried out in the next 10 years, building on the achievements and lessons learned from the past.

Implementation of activities by CCARDESA follows the principle of subsidiarity and is based on partnerships. CCARDESA will continue creating new effective partnerships and strengthen existing ones in order to deliver on its mandate. Each partner will perform the functions for which they have a competitive advantage and are best placed to perform that function. At the national level, for example, the NARES shall implement the activities and directly work with the farmers and other local stakeholders while CCARDESA will take on the coordination and facilitation roles. Therefore, the overall delivery of outputs and the intended outcomes in the region will depend on the extent to which each stakeholder is capacitated for the role they play in the CCARDESA programmes. Capacity development is required at all levels. A capacitated chain of partners results in a strong set of stakeholders who are adequately equipped to perform their roles in the collaborative arrangements.

Effective partnerships, collaboration and mutual alignment of activities calls for putting in place systems for sharing of information and pooling together the limited resources available in the region. This sets the appropriate foundation for guarding against duplication of efforts

by different organisations and sub-optimal utilization of resources. This strategy addresses this issue by providing for activities that encourage partnerships and collaborations among the organisations in the region. The CCARDESA Secretariat itself also actively subscribes to this approach and is used as one of the key working principles as described later in this document.

The internal environment is equally important for the successful operationalisation of this strategy. After 7 years of implementation of multi-country regional programmes, nurturing of various partnership and interaction with the cooperating partners, CCARDESA has gone through a learning process which will inform the implementation of the current strategic plan. The lessons learned point to the need to remain vigilant in maintaining and strengthening internal control systems, resource mobilisation efforts, annual planning and budgeting, procurement, human resources management, financial management, risk management as well as monitoring and evaluation. The internal operating environment will be assessed periodically to identify areas that need improvement and those that need to be maintained. This will be part of CCARDESA's effort to maintain high standards and follow international good practice.

## **2.5 CCARDESA's value to national, regional and global stakeholders**

CCARDESA has a constituency of stakeholders, most of whom are partners in the implementation of the programmes. These expect CCARDESA to facilitate their work and, therefore, assisting them to carry out their mandates. Some of the partners are direct beneficiaries of the CCARDESA activities while others are indirect beneficiaries. The main collaborators and direct beneficiaries at national level are the NARES who consist of a wide range of individual institutions such as agricultural research institutions, extension institutions, Universities, NGOs and farmers. There are also international research organisations operating at country level, private sector organisations, farmer organisations and other non-state actors. In addressing the needs of the partners at national level a number of activities will be carried out. These will generally fall into the following categories:

- i. Facilitating the convening of regional platforms on topical issues and documentation of the proceedings;
- ii. Coordinating regional multi-country research agenda and projects to address regional priority agricultural development issues;
- iii. Supporting the generation and dissemination of technologies and approaches to improve the farming systems of small-scale farmers;
- iv. Provide the services of a 'regional information broker' through generation, collation and curation of information and knowledge products in forms that can be of use by different categories of stakeholders;
- v. Facilitation of capacity development for the NARES at all levels, with a special focus on the youth, women and vulnerable groups;
- vi. Support NARES institutions in resource mobilisation at national and international levels, including improving access to global targeted financing sources; and,
- vii. Provide technical and socio-economic evidence based on quality science, to support policy and programme development at national and regional levels.

At regional level, SADC is a key stakeholder and expects CCARDESA to not only facilitate implementation of the regional policies but also spearhead the mobilisation of local and international resources to finance implementation of its regional priorities. In addition, SADC expects CCARDESA to provide evidence-based technical advisory reports to assist the regional body in formulating policies and advising the Member States on a range of issues within the agricultural sector.

At continental level, CCARDESA will continue to forge partnerships with various organisations such as African Forum for Agricultural Advisory Services (AFAAS), Association for Strengthening Agricultural Research in East and Central Africa (ASARECA),

West and Central African Council for Agricultural Research and Development (CORAF) and Forum for Agricultural Research in Africa (FARA). In the first 7 years of operation, CCARDESA forged strong partnerships with these organisations operating in different geographical regions of Africa. The collaboration with these organizations will be strengthened for enhanced sharing of information, collaborative development and implementation of programmes as well as learning. New partnerships with relevant organisations operating at regional and continental levels will be established. Similarly, CCARDESA will maintain, strengthen and establish partnerships with a range of relevant global organisations. This will include organisations dealing with global agricultural research, agricultural advisory services, climate change, policy analysis etc. In this regard, efforts will be made to also establish new South-South and North-South partnerships.

## CHAPTER 3: VALUE PROPOSITION

CCARDESA's mandate for coordinating AR4D in the SADC region is clear and well supported at the political and technical levels. CCARDESA intends to address regional agricultural research in the SADC through the following interventions:

- Coordinating implementation of regional AR4D programmes;
- Facilitating collaboration among stakeholders of the national agricultural research systems (NARS);
- Promoting public–private partnerships in AR4D;
- Improving agricultural technology generation, dissemination and adoption through collective efforts, training and capacity building; and,
- Providing information and knowledge products to stakeholders.

CCARDESA will continue to vigorously pursue and deliver on its mandate in order to enhance sustainable agricultural transformation and ensure that agriculture becomes the driver of relevant regional frameworks and SDGs in the SADC region. To deliver on this mandate, CCARDESA is well-placed to be a broker of AR4D knowledge and information, and act as an intermediary between research and extension, to ensure that the region successfully turns research results into use. This will drive agricultural transformation for Member States and the region. In order to meet the regional and global key stakeholders' expectations, CCARDESA will facilitate the delivery of the following key results:

- i. Increased agricultural productivity and food and nutrition security;
- ii. Sustainable management of natural resources and increased resilience to climate change and other emerging agricultural risks;
- iii. Increased commercialisation of smallholder agriculture and access to markets;
- iv. Gender equality, women empowerment and increased employment and participation of youth and vulnerable groups in agricultural value chains; and
- v. Strengthened capacity of regional and national AR4D institutions, farmers and other agricultural value chain actors.



## CHAPTER 4: VISION, MISSION AND VALUES

### Vision

“Sustainable agricultural growth and socio-economic development in the SADC.”

### Mission

“To set the regional research and development agenda, mobilise resources, support capacity development, foster collaboration and provide agricultural information and knowledge in the SADC”.

### Core Values

Integrity,  
Relevance,  
Respect,  
Professionalism,  
Team work,  
Innovation.

The Vision of CCARDESA under this strategy is: *Sustainable agricultural growth and socio-economic development in the SADC.* This will be achieved by delivering on its Mission, that is, ***To set the regional research and development agenda, mobilise resources, support capacity development, foster collaboration and provide agricultural information and knowledge in the SADC.*** In the implementation of this strategy under the vision stated above, CCARDESA will be guided by six core values, namely: Integrity, Relevance, Respect, Professionalism, Team work and Innovation. Below each value is clarified by a statement that explains the context and how CCARDESA will live the value.

#### *Integrity*

We commit to conduct ourselves in a transparent, impartial and honest manner in all our dealings and to be accountable to our stakeholders for the correct use of resources and delivery of results.

#### *Relevance*

Our programmes, services, knowledge products and information are inclusive and designed in a participatory manner to timely meet the needs of all our stakeholders.

#### *Respect*

We hold all our stakeholders in high esteem and commit to comply with international and regional conventions and protocols as well as all laws and regulations in our host country and Member States, while upholding the intellectual property rights of partners.

#### *Professionalism*

We commit to observe the highest ethical standards and to promote the use of appropriate skills and high quality science in our research and development initiatives.

### *Team work*

We believe in participatory, collaborative and inclusive approaches, building effective institutional arrangements and partnerships that deliver benefits to all agricultural stakeholders.

### *Innovation*

We are committed to delivering a cutting-edge regional research agenda and foster new approaches to agricultural research for development and dissemination, adoption and use of results, creating value for all our stakeholders.

## CHAPTER 5: THEORY OF CHANGE

CCARDESA will continue to use the partnership approach in the implementation of the activities of the Strategic Plan. CCARDESA's theory of change in Figure 1 shows the hierarchical progression and relation of actions, outputs and outcomes at different levels. Thematic areas at the bottom of the figure will be the basis upon which the interventions/activities will be planned and implemented. A set of interventions will lead to the generation of outputs that will lead to outcomes for each of the thematic areas. The combined effects of the outcomes will be the final impacts of CCARDESA's interventions, which is expressed in its vision of "*sustainable agricultural growth and socio-economic development in SADC.*"

The first area of the strategy is the institutional capacity strengthening for both CCARDESA and Member States AR4D institutions. 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).

All programmes at regional and national level will 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 women and vulnerable groups such as people with disabilities and those living with HIV/AIDS.

Having laid the institutional capacity base and ensured mainstreaming of cross-cutting issues, the main outwardly focused intervention areas will be aimed at supporting AR4D institutions to develop and promote the use of knowledge-based, gender-sensitive and youth-friendly technologies, innovations and management practices. The interventions will focus on improved agricultural productivity and food and nutrition security; sustainable management of natural resources and resilience to climate change and other emerging agricultural risks; increased commercialisation and access to markets for the agricultural sector, especially for smallholder farmers; and increased participation of youth in agricultural value chains.

The resultant information and knowledge products of AR4D will be packaged for different audiences and used to promote increased adoption of research results by agricultural value chain actors and development of enabling agricultural and AR4D policies. CCARDESA and AR4D institutions will promote the use of existing information and knowledge management systems, digital and ICT applications to ensure that all agricultural value chain actors have adequate information for decision making and action. As AR4D institutions increasingly deliver on their mandates, this will result in intermediate outcomes at the local community level.

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 milestones outlined in the regional strategic documents as well as the CAADP (and Malabo Declaration) targets and the global SDGs as shown in the theory of change in Figure 2 below.

# Theory of Change

**Sustainable agricultural growth and socio-economic development in the SADC**

**CCARDESA MISSION**  
**To set the regional research and development agenda, mobilise resources, support capacity development, foster collaboration and provide agricultural information and knowledge in the SADC**

**IMPACT**  
 SDGs, NEPAD,  
 SADC  
 FRAMEWORKS

**THEMATIC AREAS**

**OBJECTIVES**

**OUTCOMES (NATIONAL & REGIONAL)**

**OUTPUTS**

**Agricultural productivity and food and nutrition security**    **Resilience to emerging agricultural, environmental, climate change risks**    **Commercialisation of the agricultural sector and market access**    **Women, youth and social inclusion**    **Knowledge and information management, communication and policy support**    **Capacity strengthening of CCARDESA and AR4D institutions**

Increase agric. productivity, food & nutrition security    Increase the resilience of smallholder farmers to climate change & reduce production risks    Increase commercialisation of smallholder agricultural sector & improve their access to good markets    Empower women, youth & vulnerable to make them play a meaningful role in agricultural value chains    Provide information & knowledge to AR4D stakeholders for evidence based decision making    Strengthen the institutional capacity of CCARDESA & AR4D institutions to deliver on their mandates

Productivity and food and nutrition security increased    AR4D institutions & value chain actors capacitated to build resilience to emerging agricultural or environmental risks    AR4D institutions supported to improve investments & trade that will sustain market linkages & improve financing of smallholder farmers    Women, youth & vulnerable people empowered and play a meaningful role in agricultural value chains    Effective engagement & contribution of key stakeholders within national agricultural innovation system at regional level    CCARDESA & AR4D institutions capacity strengthened

**1.1** New & existing TIMPs developed & promoted by AR4D institutions & productivity increased  
**1.2** Nutrition-sensitive agriculture integrated into AR4D institutions programmes, national & regional food systems improved

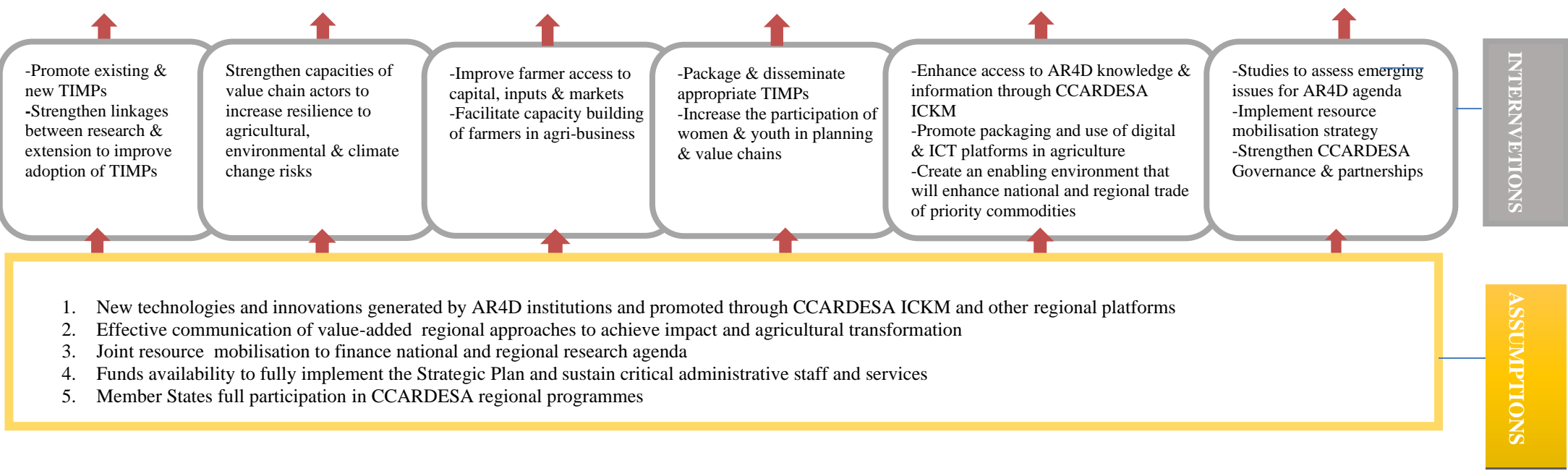
**2.1** Enabling regional environment for effective management of pests & diseases and natural resources  
**2.2** Farmers & other value chain actors supported to sustainably manage the environment & resilient value chains promoted  
**2.3** Impact of climate change & risks of pest & diseases on farmers and natural resources mitigated  
**2.4** AR4D institutions capacitated to support disaster risk reduction initiatives at national level

**3.1** Foresight on market trends for regional priority agricultural commodities provided to enhance market-driven production  
**3.2** Integration of smallholder into value chains & their capacity to access capital to invest in market-driven production supported  
**3.3** Value chain actors access to TIMPs improved  
**3.4** Participation of women & youth in commercialisation & markets linkages improved

**4.1** AR4D technologies & innovations specifically targeting women, youth & vulnerable people developed & promoted  
**4.2** AR4D institutions supported to increase participation of women, youth & vulnerable people in value chains  
**4.3** Principles of inclusiveness in planning & execution of AR4D interventions promoted

**5.1** Knowledge management hubs to foster collaboration & information sharing among stakeholders created  
**5.2** Access to audience-specific agricultural knowledge & information through CCARDESA ICKM enhanced  
**5.3** NARES institutions strengthen in information packaging and use of digital innovations & ICT with potential to transform agriculture

**6.1** Regional AR4D agenda developed & foresight provided to AR4D institutions  
**6.2** Governance, management, funding, & resource mobilisation systems at CCARDESA strengthened  
**6.3** New strategic partnerships established & existing ones strengthened



## CHAPTER 6: THEMATIC AREAS, OBJECTIVES, STRATEGIES AND OUTPUTS

The goal of implementing the R&D investments in this Strategic Plan is to deliver agricultural development and demonstrate impact in form of improved food and nutrition security in the SADC. The objective is to increase productivity through development and scaling up of market-oriented technologies and innovations; creating an enabling environment, brokering of AR4D knowledge and information in the region. This is expected to result in the adoption of good practices in the value chains of different agricultural products as well as improved market access by all value chain actors. This will contribute to:

- i. Increased rate of growth of the agricultural sector in the SADC and improved livelihoods of the rural population; and
- ii. Increased productivity of smallholder crop, livestock, fisheries and forestry enterprises thereby reducing the proportion of poor rural households.

CCARDESA will facilitate the delivery of five results which respond to the priorities expressed by key stakeholders. These results are:

- i. Increased agricultural productivity and food and nutrition security;
- ii. Sustainable management of natural resources and increased resilience to climate change and other emerging agricultural risks;
- iii. Increased commercialisation of smallholder agriculture and access to markets;
- iv. Gender equality, women empowerment and increased employment and participation of youth and vulnerable groups in agricultural value chains; and
- v. Strengthened capacity of regional and national AR4D institutions, farmers and other agricultural value chain actors.

These results reflect the comparative advantage of CCARDESA over national R&D institutions in developing agricultural public goods for the region. The above results will be achieved through implementation of activities in the following six thematic areas:

- Agricultural productivity and food and nutrition security;
- Resilience to emerging agricultural risks: environmental, climate change and transboundary pests and diseases;
- Commercialisation of the agricultural sector and market access
- Women, youth and social inclusion;
- Knowledge and information management, communication and policy support; and,
- Capacity strengthening of CCARDESA and AR4D institutions.

The medium-term activities and specific medium-term outputs under each theme are described in the Medium-Term Operational Plan (MTO). The following section gives details of the strategies that will be adopted to develop specific actions and outputs under each thematic area. It also gives the context, the challenges and opportunities for each thematic area. Summary of thematic objectives, outcomes, strategies and outputs for each thematic area is given in Annex 4.

### 6.1 Thematic Area 1: Agricultural productivity and food and nutrition security

#### 6.1.1 *The Context*

Agricultural productivity is far below potential in Southern Africa and the sub-region as a whole suffers from periodic food deficits and malnutrition. Productivity, rather than production, is an important factor in food security especially in situations where the population is growing and food production has to be increased with minimal or no increase in

the area of land under production. Research spurs productivity and production through the generation and release of improved technologies.

Production is determined by several factors such as the technologies applied, management practices, level of inputs applied, external production environment etc. Therefore, the performance of the input market also plays a key role in production. Inadequate access by farmers to key agricultural inputs and markets are still among the major underlying reasons for the prevalence of food insecurity in the region. To address food production, the entire value chain has to be targeted by appropriate interventions.

Nutrition security is as important as the broader food security which is usually restricted to the amount of food available to an individual or community. SADC countries are experiencing high rates of malnutrition and food insecurity. A study conducted by SADC shows that about 29.4 million people in the SADC were estimated to be food insecure in the 2018/19 consumption year. The number represented about 14.2% of the total population in 11 SADC countries, 13% higher compared to the previous year and about 3% higher than the five-year average for the 11 Member States that provided data (RVAA, 2018).

### **6.1.2 Challenges**

There has been a general decline in the level of investment in agricultural research and development. This has resulted in poor adoption of research results by farmers and other agricultural value chain actors. As a result, the yield gap for crops and livestock in the region remains very high compared to the world average, calling for more efforts towards sustainable intensification of agriculture. The weak linkage between research and extension continues to impede the transfer of research outputs to end-users. In addition, the challenges of food and nutrition security continue to persist.

### **6.1.3 Opportunities**

The SADC region is endowed with a wide range of climatic conditions that can support the production a very wide range of crops. The agro-climatic conditions, though variable in time and geographical space, are also favourable for production a variety of crops and livestock. The region also has abundant inland and marine water bodies that support a range of fishes. Overall the potential is very high and can be tapped.

The region is also not short of technologies that have been generated from research stations. There are crop varieties with high yielding potential under stress environments. These need to be disseminated to the farmers. On the other hand, the livestock breeds that are available in the region are highly productive. Therefore, the region generally has adequate technologies that can be deployed for immediate impact in food and nutrition security. Subsequent work would simply build on the current range of technologies.

Both at national and regional level, there are policy frameworks aimed at increasing agricultural productivity, production as well as food and nutrition security. Interventions in the region would be supported by these frameworks to which the CCARDESA strategy is already well aligned. In addition, there are good partners within the NARES of each country to implement any intervention from CCARDESA.

### **6.1.4. Thematic Intervention**

CCARDESA's effort will be in improving the use of existing and new agricultural technologies, innovations and management practices, while generating new technologies that respond to the current and future needs of the region. Partnerships with the NARES will be strengthened to achieve maximum outputs from the joint efforts.

The proposed interventions aim at making targeted contribution to the SADC Regional Indicative Strategic Development Plan's (RISDP) aspirations, as enunciated in the Regional Agricultural Policy, the Regional Agricultural Investment Plan (RAIP), the Food and Nutrition Security Strategy (FNSS) and the SADC Industrialisation Strategy and Roadmap (SISR).

These regional policy and strategic documents are aligned to the continental frameworks, such as: CAADP's Malabo Declaration, African Union Agenda 2063 and the global Sustainable Development Goals 1 and 2; end poverty and end hunger respectively.

**Thematic Objective:** The objective of this thematic area is ***to achieve increased agricultural productivity and food and nutrition security, with a special focus on smallholder farmers and priority commodities***. This will be realised by implementing the thematic strategy stated below.

**Thematic strategy 1:** *To support AR4D institutions to develop and promote adoption of existing and new technologies, innovations and management practices for increased productivity and nutrition-sensitive transformative agriculture.*

**Outcome 1:** Agricultural productivity and food and nutrition security in priority commodities increased.

**Outputs1.1:** New and existing technologies, innovations and management practices developed and promoted by AR4D institutions and productivity increase.

**Output 1.2:** Nutrition-sensitive agriculture integrated into AR4D institutions programmes and resilient national and regional food systems improved.

## **6.2 Thematic Area 2: Resilience to emerging agricultural risks: environmental, climate change and transboundary pests and diseases**

### **6.2.1 The Context**

Southern Africa is vulnerable to climate shocks, which have the potential to adversely impact the environment and the production of primary agricultural products which are dependent on climate. Agricultural productivity, especially in the smallholder sector, has been in decline. Sustainable agricultural production is predicated on the region's ability to manage the environment and natural resources such as land, water and biodiversity. In addition, the SADC region is experiencing an increase in average temperatures and reduced rainfall due to climate change. This has resulted in increased intensity and severity of droughts, floods, heat waves and mid-season dry spells. The risks posed by climate change-related events have put more pressure on a region that has high vulnerability to socio-economic shocks.

The changes to climatic variables lead to changes in the conditions for the breeding and activity of pests and diseases of crops, fish, forests and livestock. Some of the changes taking place become more favourable for pests and may lead to outbreak of new pests or increase in severity and impact of existing pests. The impact of new or existing pests and diseases that have reached economic injury levels is of concern to the region because of their trans-boundary nature. Generally, pests and diseases have the potential of covering a wide geographical area and can cause significant damage to agricultural commodities and fisheries.

### **6.2.2 Challenges**

Changes in temperature, atmospheric carbon dioxide (CO<sub>2</sub>), and the frequency and intensity of extreme weather could have significant impacts on primary production in agriculture, forestry and fisheries. Whereas the impacts of climate change are clear, the smallholder farmers in the region have made big strides in adapting to the changes. The production systems and the technologies in use do not adequately confer resilience to climate change. There is great need for the development, dissemination and adoption of specific technologies that can increase the adaptation of farming systems to climate change and make the commodity value chains resilient to climatic shocks such as droughts, high temperature, short growing season etc.



### 6.2.3 Thematic Intervention

The region requires production systems and value chains that are resilient to impacts of climate change. Unless this is done, there is high likelihood of serious disruption to food and nutrition security. Therefore, stakeholders within priority value chains will be capacitated with knowledge, information and tools to minimise the impact of adverse weather impacts.

Early warning and foresight technologies relevant to agriculture will be developed and promoted across the region. Regional stakeholders will be capacitated to acquire knowledge and skills to deal with emerging pests and diseases of economic importance. The region will take advantage of new innovations and environmentally acceptable options to timely control and manage the impacts of climate change on the agricultural production systems and the marketing of the primary products.

Through this thematic area, CCARDESA will contribute to the objectives of the SADC Climate Change Strategy and Action Plan, the environment and sustainable development commitments in the SADC RISDP and various multilateral environmental agreements, including the United Nations Framework Convention on Climate Change (UNFCCC).

**Thematic Objective:** The objective of this thematic area is *to increase the resilience of smallholder farmers to climate change and reduce the risks in their production systems through a cross-sectoral approach.*

**Thematic strategy 2:** *To strengthen early detection and rapid response to trans-boundary pests and diseases and increase resilience to climate change.*

**Outcome 2:** AR4D institutions and value chain actors capacitated in building resilience to climate change and sustainably manage natural resources as well as trans-boundary pests and diseases.

**Output 2.1:** Enabling regional environment for effective management of pests and diseases as well as natural resources created.

**Output 2.2:** Farmers and other value-chain actors supported to sustainably manage the environment and resilient value chains promoted.

**Output 2.3:** The impact of climate change and risk of pest and diseases on farmers and natural resources mitigated.

**Output 2.4** AR4D institutions capacitated to support disaster risk reduction initiatives at national level.

## 6.3 Thematic Area 3: Commercialisation of the agricultural sector and market access

### 6.3.1 The Context

Agriculture is a priority sector for economic growth, reducing poverty and improving food and nutrition security in Southern Africa. The new environment which is characterised by rising population, low incomes, urbanisation, policy reforms, low technology use, food industry restructuring and climate change calls for the transformation of agriculture. Commercialisation can alter the current production practices from highly subsistence level towards highly market-oriented level. The SADC Regional Agricultural Policy (RAP) recognises the importance of improved domestic and regional agricultural markets in determining the competitiveness of the region's agriculture and improving incomes for the farmers. Smallholder farmers currently are unable to effectively participate in lucrative and fair markets due to a range of challenges. Any effort towards clear identification and removal

of the market-related barriers to domestic and regional input and output agricultural markets would be a welcome move.

### **6.3.2 Challenges**

The barriers and marketing challenges faced by farmers in accessing lucrative markets start at the farm, with poor access to and incorrect use of inputs. The produce by smallholder farmers is also faced with serious challenges of small quantities scattered over a wide geographical area. This is unattractive to buyers who demand large volumes to make economic transactions. Unless such small quantities are bulked, there is always a significant loss of interest on the part of the buyers and a tendency towards low prices paid by the buyers. Apart from quantity limitations, smallholder farmers sometimes produce agricultural commodities whose quality is rather low, and they fail to meet the minimum acceptable sanitary and phytosanitary (SPS) standards.

Most smallholder farmers, by their nature, do not have a commercial or business approach to production. Their focus is more towards subsistence rather than business. There is need to move to specialized enterprises for crop, livestock, poultry and aquaculture products with changes in product mix and input uses determined largely by market forces. This is a serious challenge whose solution lies in the long-term mind-set strategies to assist the farmers change their approach and start moving on the path of business in agriculture. Women and youth bear the brunt of these barriers to trade as they tend to be marginalised when it comes to access to finance, other services and market linkages to support their agricultural enterprises.

### **6.3.3 Opportunities**

Agricultural commercialisation requires the input and participation of the public and private sector. Countries in the SADC region have expressed their desire to commercialise agriculture and uplift the performance of the smallholder farmers. This has been expressed in a number of policy and strategic documents both at national and regional levels.

Although the smallholder farmers lack business approach to their production, there is sufficient desire among them to raise their incomes through production of quality products and access to good markets. Some Smallholder farmers also aspire for commercialisation of their enterprises and entry into high earning bracket of the farmers. In addition, smallholder farmers have been very active and willing parties in capacity building activities that have clear potential to uplift them and improve their farming systems.

To address the problem of fragmentation of the smallholder farmers and low organisation, significant progress has been made in the use of existing community structures to deliver agricultural information and inputs to farmers. These structures have evolved over time and include cooperatives, Innovation platforms, and other similar structures that make up the local governance or interest groups within the communities. Interventions on commercialisation would not establish new local structures. Existing structures would be used to deliver the needs of the smallholder farmers.

The existence of supportive strategies/policies, willingness of smallholder farmers to improve their farming systems and presence of community structures that can be used for delivering commercialisation initiatives provides good opportunities for the success of the interventions under this theme.

### **6.3.4 Thematic Intervention**

Under this theme, CCARDESA and its partners will implement activities that will create a business culture among farmers so that they are able to relate production to the needs and expectations of the market. Agribusiness development initiatives will be promoted and

supported in order to create synergies, share lessons and good practices, and optimise resource allocation.

Concerted action to raise awareness amongst policy makers and the private sector on the agro-processing potentials for various commodities, and advocate for policy changes that will expand markets and attract investment will be explored. Both the private and public sectors will be galvanised and supported in playing their role in commercialisation of smallholder production systems.

There will be a number of activities on engaging with the different value chain actors and stimulating a shift away from subsistence approaches and assisting the players to see room for growth. The efforts will not disrupt the existing structures but will work with them and improve them for the purpose of providing for value chain players to work effectively. This will include the use of existing national and regional platforms which will continue to have important roles to play in the development of value chains and in stimulating mind set changes.

**Thematic Objective:** The objective of this thematic area is ***to increase commercialisation of the smallholder agricultural sector and improve their access to good markets.***

**Thematic strategy 3:** *To promote commercialisation of smallholder agriculture through increasing productivity, value addition, and marketing with emphasis on commodity chain development.*

**Outcome 3:** AR4D institutions supported to improve the investment and trade environment that will both deepen and sustain market linkages and improve financing of smallholder farmers.

**Output 3.1** Foresight on market trends for regional priority agricultural commodities to enhance market-driven production provided.

**Output 3.2** Integration of smallholder farmers into value chains and their capacity to access capital to invest in market-driven production supported.

**Output 3.3** Value chain actors access to technologies, innovations and management practices (TIMPs) improved.

**Output 3.4** Participation of women and youths in commercialisation and markets linkages improved.

## **6.4 Thematic Area 4: Women, youth and social inclusion**

### **6.4.1 The Context**

Women and youth make essential contributions to the agricultural and rural economies in the SADC region and play crucial roles in attaining each of the pillars of food security: availability, access, and utilisation. Women provide about 43% of the labour for agricultural production in sub-Saharan Africa, excluding other household work (FAO, 2011). Women are highly marginalised; skewed benefit sharing from their labour in favour of men, low participation in decision-making on productive resources, use of income from agriculture, forestry, non-forestry products and fisheries. Women experience the effect of gender inequality at both household and societal levels and carry the burden of unpaid care work. The degree of women empowerment is highly correlated with the household's wellbeing, especially children's nutrition and educational outcomes. The SADC Protocol on Gender Equality, other SADC frameworks (RAP and RAIP), the African Union Agenda 2063 and

Sustainable Development Goal 5, espouse gender equality and women empowerment as necessary conditions for equitable and sustainable development.

Youth are vital players in agricultural transformation and food systems and action is needed to enhance agricultural investments by and with young agro-entrepreneurs. In the SADC region, most of the member states recognise the role of the youth in agriculture, hence, the need to empower the youth to engage in the agricultural sector to create livelihood opportunities, achieve food security and stimulate economic growth in the region. In the Malabo Declaration, the members of the African Union have jointly committed to creating job opportunities for at least 30% of youth in agricultural value chains (FAO, 2018).

The SADC region has a very youthful population - with about 75% of its population under 35 years of age and those aged 15–35 years making up 35% of the population. Youth suffer relatively higher rates of unemployment and under-employment and are three times more likely to be unemployed than adults. According to the SADC Regional Vulnerability Assessment & Analysis (2018), unemployment rates remain in the range of 4% to 80% in the region. The SADC Youth Employment Policy Framework recognises the need for young men and women to be gainfully engaged in decent work and to participate in the region's economic activities, including in agriculture value chains.

#### **6.4.2 Challenges**

The average youth unemployment rate in Southern Africa is estimated at 21.6%. Statistics from the International Labour Organisation (ILO) indicate a wide variation among the countries, ranging from 2.7% in Madagascar to 53.6% in South Africa. Therefore, youth unemployment is one of the most significant challenges facing SADC countries and requires immediate solutions as it has the potential to lead to other challenges of serious consequences to the economies. Although the SADC countries have responded to the youth unemployment challenge by developing the necessary frameworks, i.e. the YEPPF, Labour Migration Action Plan (2016-2019) and the SADC Employment and Labour Protocol, regional implementation of these frameworks has remained weak and need to be accelerated.

The lack of infrastructure and opportunities in the rural areas has led to high rural-urban migration by the youth, in search of the missing opportunities as well as a better life in the urban areas. This migration puts extra pressure on the facilities on the cities and on the governments as they have to find solutions to minimise rural-urban migration through various ways such as job opportunity creation. Even though the average growth rate has been estimated at 4% in Africa, this has not been matched by similar levels of job creation.

#### **6.4.3 Opportunities**

The region has developed and agreed on targeted frameworks to address the youth unemployment challenges. The Member States developed the SADC Employment and Labour Protocol which aims at providing guidance to the countries on reducing unemployment and keeping it within acceptable levels. This is done through harmonisation of employment and labour standards. Apart from the protocol, the region has a detailed Youth Employment Promotion Policy Framework (YEPPF) which guides the countries on a harmonised approach for provision of sustainable and decent employment to the youth. There is also the Labour Migration Action Plan (LMAP) which provides a framework for promoting labour migration within the SADC region as part of the regional integration efforts of the countries.

The SADC countries are generally committed to implementing policies that bring about economic transformation. Within the agricultural sector, the countries are moving towards agricultural transformation. There is also broad agreement to use the agricultural sector as one of the key engines of growth by tapping into its potential to create jobs within its wide range of value chains. This includes the support to efforts of value addition to the primary

products of agriculture in order to create jobs at that level and also focus on exporting finished products instead of primary products.

Clearly, the youth unemployment challenges cannot be addressed through only regional efforts. The national policies and efforts for creation of job opportunities, engagement of the youth and women, economic growth and socio-cultural matters are equally important and may even be the determinants of the extent to which the regional initiatives will succeed. Implementation of regional frameworks has to be additional to what is already taking place at national level. Nevertheless, the existence of frameworks at the level of SADC provides a huge opportunity for successfully addressing the youth unemployment and gender equity challenges.

#### **6.4.4 Thematic Interventions**

CCARDESA will support development and promotion of interventions that improve effective participation and empowerment of women and other vulnerable groups. Technologies and innovations that reduce drudgery and meet the needs of women as important stakeholders in the agricultural development landscape will be promoted. CCARDESA will facilitate the regional implementation of the regional frameworks in order to create a strong bond between national efforts and the regional policies and frameworks on gender.

The untapped dividend of a youthful workforce will be harnessed strategically to transform agriculture in the region. CCARDESA and AR4D institutions will make a contribution to increased participation of women, youth and other vulnerable groups in agricultural value chains by promoting specially targeted technologies and innovations and to remove barriers that impede these groups from benefiting from agricultural initiatives. This in line with SDG 8 which articulates the need for full and productive employment and decent work for all, and SDG 10 which advocates for inclusion of vulnerable groups through reduced inequality within and among countries.

**Thematic Objective:** The objective of this thematic area is ***to empower women, youth and vulnerable people through actions that will make them play a meaningful role in agricultural value chains.***

**Thematic strategy 4:** *To promote the development and use of appropriate agricultural technologies and innovations for women, youth and vulnerable groups.*

**Outcome 4:** Women, youth and vulnerable people are empowered and play a meaningful role in agricultural value chains.

**Output 4.1** AR4D technologies and innovations specifically targeting women, youth and vulnerable groups developed and promoted.

**Output 4.2** AR4D institutions supported to develop interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains.

**Output 4.3** Principle of inclusiveness in the planning and execution of AR4D interventions promoted.

## **6.5 Thematic Area 5: Knowledge and information management, communication and policy support**

### **6.5.1 The Context**

Knowledge and information are the main products and tools of AR4D that enable farmers and other value chain actors to make informed decisions and take action. There are several players in agricultural research and information sharing which include development partners, non-governmental organisations as well as research and extension. Coordination among these players can be challenging despite the fact that their target beneficiaries are the same. This may lead to duplication of efforts, waste of resources and sometimes confusion as a result of communication of contradictory messages to farmers. The existence of a 'central' organisation that acts as a source and reservoir of a wide range of specialised information and knowledge products is of high importance where there are several countries with some common interest.

The agricultural sector is moving towards digitalisation which is the use of digital technologies, data and business model innovations to transform practices across the agricultural value chain. The use of technology cuts across the entire value chain and is envisaged to accelerate sustainable agriculture transformation by boosting productivity, profitability and building resilience to climate change. Similarly, there is fast growth and demand for e-extension and e-commerce. These require support in order to make the operating environment of the value chain actors conducive for their business activities.

Policy formulation and review are the key tasks of governments. In doing so, governments would like to develop and maintain policies that are supporting of the desires of the value chain actors and assist in progressing towards the targets committed at national, regional and global levels. Policy formulation and review has to be based on sound evidence provided by technocrats within the specific area. Agricultural experts are expected to guide the policy formulation through provision of clear evidence generated from well formulated studies. Policies that are formulated with a solid base of technical evidence stand the test of time and deliver the right results once implemented. Evidence based policy formulation is necessary both at national and regional levels.

### **6.5.2. Challenges**

The SADC region is often held back by poor or inadequate agricultural policies which sometimes are not aligned to current developments and to the regional trade and integration agenda. At national level, there are poor linkages between research, extension, farmers and other players and this hinders the flow of information.

The trend of agricultural digitisation will require capacity of the value chain actors to be enhanced to a level where Southern Africa can be an active player in this field in order to give dividend to the sector. Currently the agricultural sector is lagging behind in terms of skills and application of the digital technologies. In addition, the rate of collection, collation, processing, analysis and dissemination of information and knowledge products is low.

Formulation and review of policies in the region is not well supported by scientifically generated and presented technical evidence. This creates difficulties for policy makers who need to anchor the policies on sound evidence. This void also works against the experts whose value to the policy makers erodes with time.

### **6.5.3 Opportunities**

CCARDESA has developed Information, Communication and Knowledge Management (ICKM) system and other digital ICT platforms for sharing AR4D information to a broader group of stakeholders. It provides a robust tool for sharing relevant regional knowledge products, while connecting researchers, extension professionals, communications officers and policy makers. CCARDESA ICKM is the only regional agricultural knowledge hub that

covers all SADC Member States and leverages on existing national knowledge and information sharing initiatives.

There is also an expansion of use of ICT across the agricultural value chains, beyond researchers, to farmers via extension service providers. The region has the potential to develop and harness ICT tools that offer not only opportunities for managing and disseminating knowledge and information but also for enabling the transition towards next generation technologies necessary for agricultural transformation. The opportunities in digitisation and use of ICT tools in the agricultural sector are wide. On the other hand, the demand for evidence in the formation of policies will continue to grow.

#### **6.5.4 Thematic Intervention**

CCARDESA will provide knowledge and information brokering services to all agriculture stakeholders through its ICKM system and other digital and ICT platforms. CCARDESA will strengthen the use of E-Systems to facilitate efficient agricultural operations and ease the activities of the value chain actors. This will include promoting the use of e-Extension to bridge the gap between agricultural research, extension agents and farmers thus strengthening the linkages among the three actors. The use of e-Commerce to facilitate market access for inputs, products, marketing and trade will also be promoted at national and regional levels.

In order to keep pace with the trends in the sector and improve the business environment of the sector, the development and use of ICT tools will be supported. One of the areas of focus to be supported will be capacity development for the value chain actors as well as institutions within the sector.

**Thematic Objective:** The objective of this thematic area is ***to ensure that the regional agricultural research for development stakeholders is provided with information and knowledge to make informed decisions and support agricultural transformation.*** This will be achieved by implementing the thematic strategy below.

**Thematic strategy 5:** *To provide agricultural research for development stakeholders with information and knowledge to ensure evidence based policy making within the agricultural sector.*

**Outcome 5:** Effective engagement and contribution of key stakeholders within the national agricultural innovation system at regional level.

**Output 5.1** Knowledge management hubs to foster collaboration and information sharing among various stakeholders in different countries created.

**Output 5.2** Access to audience-specific agricultural knowledge and information through CCARDESA's ICKM and the Southern Africa Agriculture Information and Knowledge System (SAAIKS) enhanced.

**Output 5.3** NARES institutions strengthened in information packaging and use of digital innovations and ICT with potential to transform agriculture.

## **6.6 Thematic Area 6: Capacity strengthening of CCARDESA and AR4D institutions**

### **6.6.1 The Context**

The mandate of CCARDESA in the coordination of agricultural research in the region is premised on the existence a certain level of capacity both at its Secretariat and at national level. The capacity in this case is with respect to human capital, physical resources and financial resources. At the regional level (i.e. CCARDESA Secretariat) it is desirable to keep just enough human capital to deliver on the mandate; a bloated Secretariat is not desirable. Since its establishment, the Secretariat has maintained a lean structure.

At the national level, there is a wide variation among the Member States with regard to human capital. Some countries have more human capacity than others. Similarly, their financial capacity is also variable. Throughout the region, AR4D institutions have been facing a decline in their capacity to deliver on their mandates, largely due to low levels of investment, especially from the public sector and human capital flight to more rewarding economies or sectors. This has resulted in slow generation and release of technologies and low adoption of research generated technologies by farmers and other agricultural value-chain actors.

Human resource mobility is a normal phenomenon in organisations; the AR4D institutions are no exception. This mobility results in a continuous need for capacity development in order to keep the institutions relevant and effective in providing the goods and services expected. Therefore, capacity needs assessments need to be conducted regularly to establish the capacity development needs.

### **6.6.2 Challenges**

The combination of limited investment in the agricultural research subsector and the low capacity creates a formidable combination of challenges for research. This limits the extent to which the NARES can provide service to the clients and also limits the effectiveness of the value chain actors and volume of business.

The financial and human capital variations among countries can also make it difficult to forge good collaborative mutually supportive partnerships that are of equal benefit among the partners. It also makes it difficult to adopt certain approaches such as floating a Call for competitive research grants since the weak countries will always fail to win any of the grants. This can work against the desire of regional integration and may exclude some countries.

With regard to CCARDESA Secretariat, there are a number of lessons that have been learned in the area of programme management, finance, human resources and administration. Some of the actions that need to be taken are contained in the organizational capacity assessment reports as well as studies that have been conducted before. These can be considered as challenges that the organization needs to deal with. Furthermore, CCARDESA faces a challenge of increasing its programmes to adequately cover all the SADC countries in order to raise its value throughout the region, and also maintaining a high level of governance efficiency.

### **6.6.3 Opportunities**

The key opportunity in addressing this theme lies in the fact that CCARDESA has a well-articulated and regionally recognized mandate to deal with capacity strengthening of AR4D institutions as part of the mandate it has from SADC Member States. This mandate is clear from the fact that: (i) it is owned and partly funded by SADC Member States; (ii) it has a clear and uncontested mandate from SADC; (iii) it has convening power; and (iv) its status gives it an ability to achieve a regional multiplier effect.



Having worked with the Member States since 2012, there is a good working relationship between the CCARDESA Secretariat and the AR4D institutions in Member States. CCARDESA already has a good record of capacity building in the region. Therefore, it will be easy to build on the earlier achievements.

The partnerships established by CCARDESA with regional and global institutions will provide an opportunity for mobilization of information and resources for assisting the countries to develop their capacities. There is also good scope for joint project development with the wide range of regional, continental and global organisations within the area of agriculture and food security.

#### **6.6.4 Thematic Intervention**

The capacities of NARES and CCARDESA Secretariat will be assessed continuously and interventions developed to address the identified gaps. The available information will be used to continue with the capacity development activities based on the lessons learned and experiences from the past. The overall focus in this regard will be on strengthening the capacity of CCARDESA and Member States' AR4D institutions to effectively deliver on their mandates.

Significant effort will be channeled to regional advocacy for more national investment in agricultural research and innovation. This will be supported by resource mobilization through the use of existing partnerships with both regional and continental bodies to develop joint projects. To satisfy the anticipated increase in demand for services from SADC and Member States, CCARDESA will work with various partners to mobilise resources for the Secretariat and the NARES across the region.

CCARDESA will continue developing and improving its governance and management systems as a growing and maturing institution building from past achievements, lessons and good practices. This is important for sustaining the goodwill from Member States and development partners, facilitating resource mobilisation and enabling the institution to deliver on a larger programme portfolio.

**Thematic Objective:** The objective of this thematic area is ***to strengthen the institutional capacity of CCARDESA and AR4D institutions in Member States to deliver on their mandates.***

**Thematic strategy 6:** *To increase the effectiveness and capacity of NARES and CCARDESA Secretariat in governance, management, human and financial resources*

**Outcome 6:** Efficient functioning of governance, management, funding and resource mobilisation systems of CCARDESA and AR4D institutions capacitated.

**Output 6.1** Regional AR4D agenda developed and foresight provided to AR4D institutions.

**Output 6.2** Governance, management, funding and resource mobilisation systems for CCARDESA strengthened.

**Output 6.3** New strategic partnerships established and existing ones strengthened.

**Output 6.4** AR4D institutions' programmes supported and managed efficiently.

## CHAPTER 7: DELIVERING THE STRATEGY

### 7.1 Partnerships

Successful delivery of the Strategic Plan requires the CCARDESA Secretariat to strengthen partnerships, first with the SADC Secretariat through the FANR Directorate, then with bilateral and multilateral development partners, private sector organisations, appropriate UN agencies, the CGIAR institutions, commodity networks, agri-business associations, regional NGOs, regional and continental farmers' organisations and continental and Sub-regional Research Organisations (SROs) promoting AR4D.

The partnership with SADC Secretariat is necessary for policy guidance, technical support, joint planning and collaborative initiatives for resource mobilisation. This partnership also ensures the smooth flow of information and support in either direction. The partnership with development partners and private sector organisations investing in agriculture is essential for technical support, linkages with complementary initiatives in the region and CCARDESA's financial sustainability. Through the partnership with development partners, the CCARDESA Secretariat will remain informed about pipeline resources and projects that it can tap into to support its work.

The partnership with global technical assistance institutions, UN agencies and the CGIAR system is crucial for access to new technologies and innovations, and cutting edge approaches in AR4D, including socio-economic impact evaluation of new technologies and innovations. Such partnerships will facilitate linkages between CCARDESA and national AR4D institutions in the SADC region, on the one hand, and global players in agricultural innovation and technology generation. CCARDESA and national AR4D institutions will have the chance of benefiting from knowledge and skills transfer by accessing intellectual property on new technologies and innovations.

Collaborating with continental institutions such as AFAAS, ASARECA, CORAF and FARA is necessary for sharing information and lessons learnt and for joint planning for dealing with common issues of interest such as climate change. In addition, this level of partnership will be used to develop joint project proposals, mobilise resources and implement the projects jointly.

Strengthening of strategic partnerships with organisations within the mandate countries of CCARDESA provides a favourable platform for promoting joint delivery with national AR4D institutions, the private sector, farmer organisations, commodity networks, NGOs and any other organisations within the agricultural sectors of SADC countries. The impact of CCARDESA will be visible at national level, where the organisation will be strengthening the capacities of AR4D institutions to deliver services to the final target groups: farmers, input suppliers, marketing agents, processors, and other actors in the targeted agricultural value-chains. This partnership is crucial for dialogue, strategic planning, establishment of priority needs and the actual implementation of projects and programmes of CCARDESA. National AR4D institutions that have been identified as Centres of Excellence/Leadership will be important in extending capacity building support to their weaker counterparts.

Joint tracking and review of progress will be done with relevant partners. In addition, CCARDESA will facilitate learning among the stakeholders. In forging the partnerships, CCARDESA will ensure that responsibility for actions is delegated to the partners best placed to play this role. CCARDESA's role will remain within the areas and at levels of its competitive advantage.

From the previous phase of operation (2014-2019) there have been a range of partnerships established already in all these areas that have been described above. Therefore, the key

role of CCARDESA during the phase of implementing the current strategy will be to strengthen the existing partnerships, improving the operational value and ensuring that each partnership is making worthy contributions to the achievement's outputs of CCARDESA. In special need areas, new partnerships will be established, mainly for the purpose of filling some identified gaps. Figure 3 below illustrates CCARDESA's existing and potential partnerships.

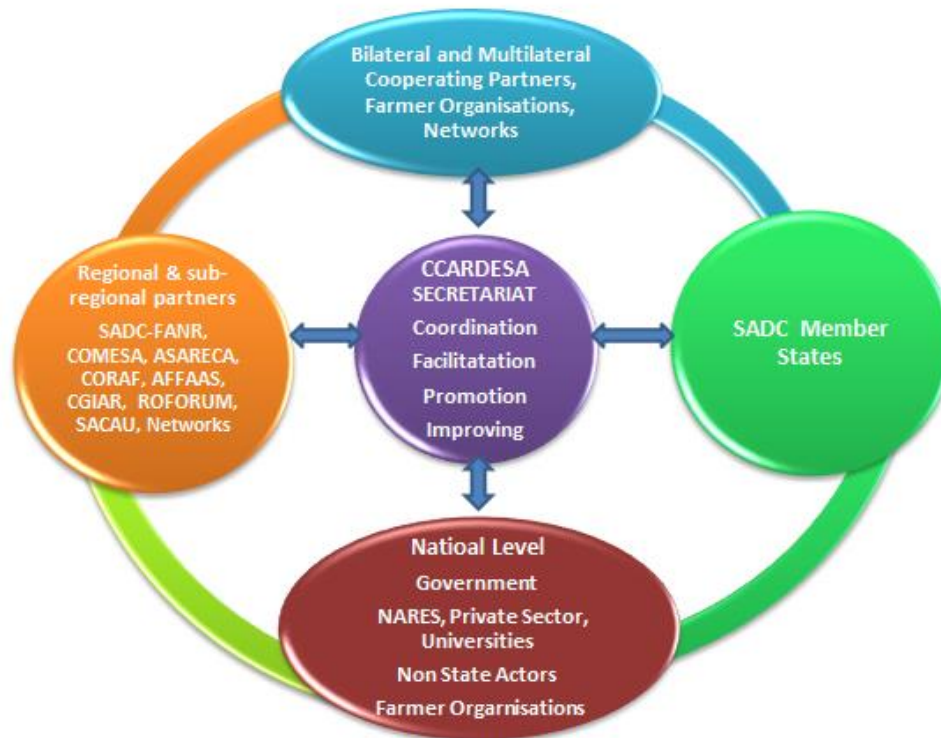


Figure 3: CCARDESA engagement with Partners and Stakeholders

## 7.2 Institutional Structure, Roles and Responsibilities

CCARDESA Secretariat will endeavour to maintain a lean structure that is just adequate to fulfil its role of coordination and facilitation. However, extra human resources may be recruited to meet the demand of delivering the outputs that will be described in the MTOPs and annual work plans. This will include short term consultants who will perform specific tasks, especially in areas where the in-house CCARDESA staff may not have the required expertise.

The CCARDESA Secretariat will lead and coordinate delivery of the Strategic Plan through the development of Medium-Term Operational Plans (MTOPs) and Annual Work Plans. In accordance with CCARDESA's implementation model of partnerships and the observance of subsidiarity principles, implementation will be done jointly with Member State AR4D institutions forming the NARES, technical partners operating at national, regional and continental levels, SADC Secretariat, Private Sector, Farmers Organisations and other relevant agricultural value-chain actors. Therefore, national AR4D institutions within the NARES will jointly implement activities with CCARDESA and participate in relevant regional AR4D agenda setting tasks. Non-state actors (NSA) are expected to also participate in the joint implementation of activities with CCARDESA, facilitate interface and collaboration between CCARDESA and national AR4D institutions and partner with CCARDESA in resource mobilisation.

To ensure value-for-money in implementation of the Plan, stakeholders will consultatively be assigned roles based on the principle of subsidiarity. In this respect, the CCARDESA Secretariat will not duplicate but complement the efforts of AR4D institutions in the NARES and key stakeholders. CCARDESA recognises the importance of creating synergies by linking the planned regional initiatives to continental and national efforts towards strengthening AR4D. Where possible, the NARES and partner institutions may be capacitated to enhance their ability to contribute to implementation of the CCARDESA Strategic Plan. Strong links to the SADC FANR Directorate will be maintained and strengthened, while fulfilling the obligations as specified in the MOU between CCARDESA and SADC.

The CCARDESA governance structure comprising SADC Ministers responsible for Agriculture and Food Security, the General Assembly and the Board of Directors will have important non-technical roles to play in the implementation of this Strategic Plan. The specific roles of these structures are described in the CCARDESA Charter and Governance Manual. The Secretariat will facilitate the full operation of these governance structures so that they perform their roles in the governance of CCARDESA. The efficient and effective performance of these governance structures is necessary and essential for CCARDESA to make good progress in its technical tasks. Therefore, Secretariat will prioritise the facilitation of the Board and General Assembly businesses, whose convening task is within the mandate of the CCARDESA Secretariat. Similarly, attendance of meetings and implementation of the decisions of Ministers responsible for Agriculture and Food Security will also receive high priority.

### **7.3 Implementation Plan**

This Strategic Plan will be implemented through two MTOPs lasting 5 years each. The first MTOP will be for the period 2020-2024, to be followed by another one for 2025-2029. These MTOPs will elaborate further the details of what CCARDESA will implement during the two phases and the main outputs to be achieved. Broad activities at that level will be described and linked to the outputs and outcomes. The activities will be directly linked to the results framework that will be developed.

The MTOPs will further be broken down to annual work plans that will provide detailed activities to be implemented every year starting in 2020. The annual plans will concentrate on describing specific activities and the outputs to be achieved within one year. At that level, there will be a clear presentation of what each output is intended to contribute to the milestones and targets stated in the Results Framework.

## CHAPTER 8: TRACKING IMPLEMENTATION

### 8.1 Results Framework

The result framework (Annex 3) of the Strategic Plan shows how the strategies link to the planned implementation resources, activities, outputs, outcomes and impact. It is a schematic hierarchy of the results. The vision of the strategic plan (*Sustainable agricultural growth and socio-economic development in the SADC*) will significantly contribute to the impact: *Resilient agricultural and food systems and improved incomes and nutritional status of rural farming communities and other value chain actors*. The six thematic area objectives of the strategic plan translate into six outcomes, each delivered through one or a number of outputs.

### 8.2 Monitoring and Evaluation

CCARDESA will develop a robust Monitoring, Evaluation, Reporting and Learning (MERL) system. Based on the results framework, CCARDESA will also develop an M&E plan which will enable CCARDESA to track, evaluate and report on the implementation of this Strategic Plan at regional and national levels. The M&E plan will describe the following: (i) theory of change and critical assumptions; (ii) results framework; (iii) learning agenda and questions; (iv) performance data methodologies, quality assurance measures, roles and responsibilities and dissemination plan; (v) detailed indicator reference sheets/tables; (vi) Donor standards custom indicators with baseline values and targets by year, indicator definition, unit of measure, data source, data collection tools and frequency of reporting. CCARDESA Secretariat will take a lead in M&E planning and coordination. Three levels of M&E are envisaged: the 10-year Strategic Plan in its entirety; the 5-year MTOP implementation report; annual reports; and specific donor-funded project reports. In all cases, monitoring and evaluation will track and assess progress at regional and national levels.

It is expected that projects that will be developed and funded to implement this Strategic Plan will have specific M&E requirements to facilitate decision-making processes and ensure efficient use of resources. M&E requirements of funding partners will be accommodated in the design and operationalisation of the M&E Plan. M&E will take various approaches, to maximise the learning effect; including, joint annual planning and review sessions for common visioning, joint lesson learning and participatory project adjustment.

The ability of CCARDESA, AR4D institutions and funding partners to strategically use M&E outputs and processes to increase visibility of their work will be paramount for the success of resource mobilisation efforts. Therefore, special attention will be paid to identifying, documenting, packaging and communicating the achievements of CCARDESA and its partner institutions at regional and national levels, as a central part of the M&E strategy.

Outcome harvesting and reporting will be an integral component of all M&E work of CCARDESA. A learning platform will, be created and strengthened to facilitate sharing of lessons between stakeholders. Peer support, experience exchange and lesson learning will be mainstreamed into M&E activities.

M&E outputs will inform decision-making at four levels: (i) periodic review of organisational strategy to better achieve CCARDESA's foundational institutional mandate, align to changing SADC priorities and adapt to the changing global, regional and national social and economic contexts, (ii) adapting the MTOP actions to respond to new opportunities and correct the course towards achieving the 5 year targets, (iii) informing day-to-day implementation of projects (by devising solutions to challenges and scaling up what has been proven to work), and (iv) holding CCARDESA and partner institutions to account for the use of resources in implementing M&E activities.

### **8.3. Risk Management**

The types of risks, likelihood of occurrence, potential impact, mitigation measures, residual risk and risk owner are highlighted in Annex 2.

## Annex 1: CCARDESA Background

### 1.0 Establishment of CCARDESA

CCARDESA was formally established by SADC Member States in order to contribute to the goal of reducing food insecurity and poverty in the SADC region by increasing agricultural productivity. It was established as a SADC regional research and development (R&D) institution operating under the principle of subsidiarity, i.e., it sources and manages its own financial and human resources while maintaining a formal linkage with SADC Secretariat through an MOU which explains the relationship between the two institutions as well as the roles and responsibilities of each. Under this MOU the SADC Secretariat has the responsibility of providing policy guidance and priorities for agricultural R&D of the Region. The SADC Secretariat also receives regular reports from the CCARDESA Board of Directors.

### 1.2 Objectives of CCARDESA

The overall objectives of CCARDESA are:

- i. To promote coordination and collaboration among NARS and Farmer Organisations through regional and international cooperation;
- ii. To facilitate the exchange of information and technology among the agricultural R&D institutions;
- iii. To promote partnerships in the SADC region between public, private, civil society and international organisations in agricultural R&D;
- iv. To improve agricultural technology generation, dissemination and adoption in the region through collective efforts, training and capacity building; and
- v. To mobilise human, financial and technological resources to implement demand-driven regional R&D activities that will contribute to the strengthening of national-level institutions/research agencies and individuals.

#### 1.2.1 Specific Objectives of CCARDESA

The general objectives of CCARDESA stated above express the organisation's intentions on the key areas in which systematic milestones will be set in pursuit of delivering on its mandate. The specific objectives of CCARDESA are to:

- i. Establish and strengthen the administrative, institutional, governance, financial, procurement and technical structures necessary for supporting all the activities that fall within the identified thematic areas;
- ii. Mobilise resources for implementation of the technical activities of CCARDESA in relation to research and technology generation, farmer empowerment and market access, information and knowledge management, capacity development of NARS and Farmer Organisations, and strengthening of CCARDESA Secretariat's role in coordinating research and development in the region;
- iii. Establish and maintain effective collaborations and partnerships with regional and continental stakeholders, in order to collectively work on R&D issues in the region using the key principles of FAAP;

- iv. Carry out advocacy work with regard to Pillar 4 of CAADP<sup>1</sup> and work with Southern African countries to ensure that research and development are adequately addressed in the national CAADP compacts and investment plans;
- v. Facilitate the development and application of practical ways of sharing information and out-scaling of demand-driven innovations that contribute to food security, income generation, sustainable production and reduce carbon footprints of agricultural products; and
- vi. Develop and implement programmes that address cross cutting issues of environment, youth participation, and gender equity and nutrition security.

### **1.3 Institutional Arrangement and Governance of CCARDESA**

CCARDESA is governed by a General Assembly of regional R&D stakeholders from SADC Member States. All issues to do with CCARDESA operations are determined at the General Assembly. Members of the General Assembly are stakeholders drawn from the SADC countries. In addition to the General Assembly, the Ministers responsible for Agriculture and Food Security of countries that are party to the Charter receive reports of CCARDESA and also perform functions of appointing Board Members as well as attending to other issues of long-term strategic nature. The Board of Directors of CCARDESA, composed of 13 members, provides oversight and guides the CCARDESA Secretariat on its general direction and programmes.

The roles of the CCARDESA governance structure are illustrated below (Figure 1).

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<sup>1</sup> CAADP Pillar 4: Agricultural Research, Technology Dissemination and Adoption



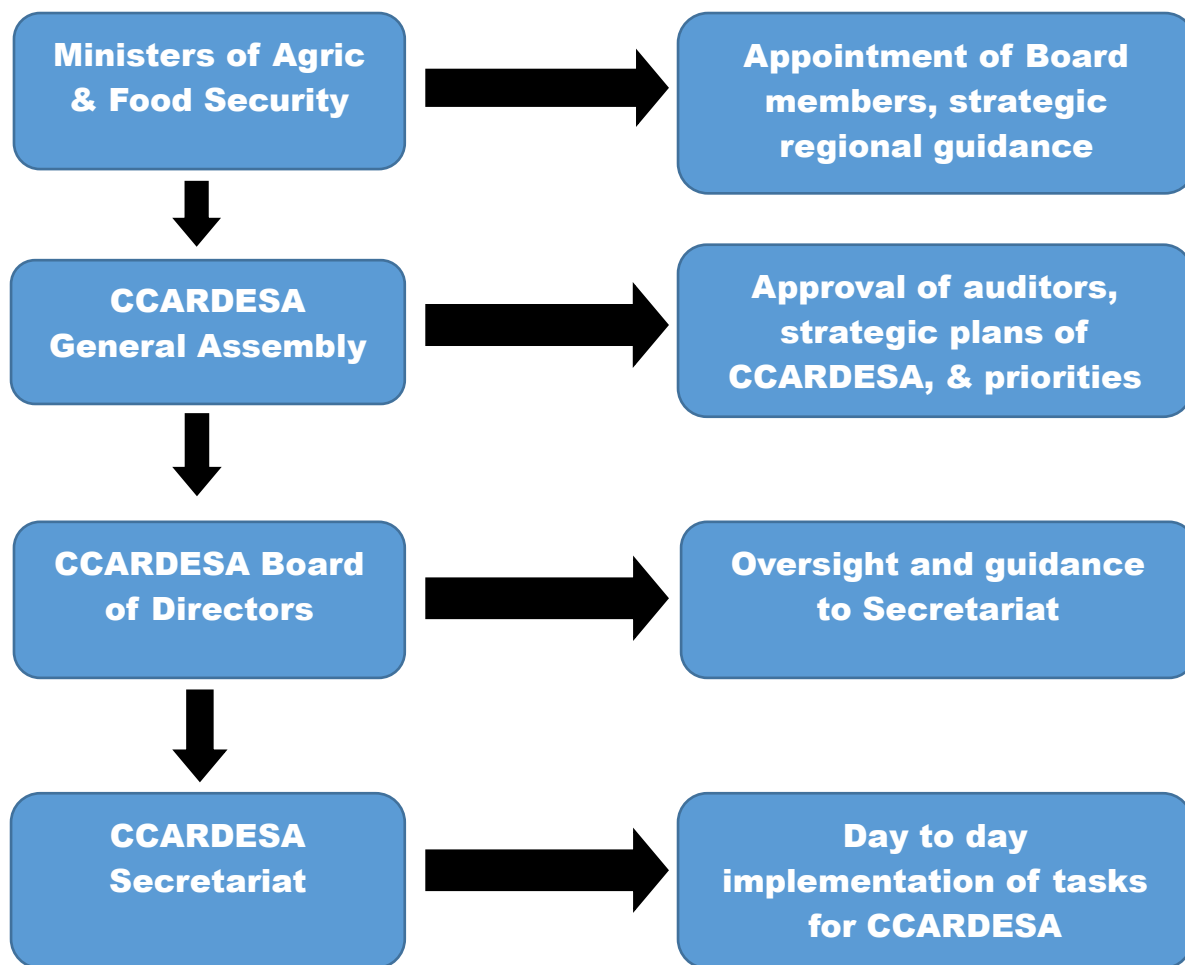


Figure 4: CCARDESA governance structure

The CCARDESA Secretariat is answerable to the Board of Directors of CCARDESA, through its Executive Director. It performs the day-to-day functions of CCARDESA by managing and implementing the programmes of CCARDESA, as approved by the Board, and performing all tasks of coordination of agricultural research and development in the SADC region. The CCARDESA governance manual summarises the institutional arrangement, composition and functions of each structure of the governance of CCARDESA.

The Board provides oversight and guidance to the Secretariat and reports to the General Assembly, which also has specific responsibilities such as appointing the External Auditors of CCARDESA. Both the Charter and Governance Manual of CCARDESA provide full descriptions of the responsibilities of the four governance structures.

## Annex 2: Risk Matrix

Risk	Likelihood	Impact Description	Impact Level	Risk Response (to mitigate)	Residual Risk Level (after response)	Risk Owner
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
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
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
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
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
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

### Annex 3 Results Framework

Results	Indicators	Means of Verification	Assumptions	Links to Development Frameworks
<b>Impact</b>				
<ul style="list-style-type: none"> <li>▪ Resilient agricultural and food systems</li> <li>▪ Improved incomes and nutritional status of rural farming communities and other value chain actors</li> </ul>	Prevalence of malnutrition	<ul style="list-style-type: none"> <li>▪ DHS, National Nutrition Surveys</li> <li>▪ Global Hunger Index</li> </ul>	<ul style="list-style-type: none"> <li>▪ Favourable government Policies</li> <li>▪ Political stability</li> </ul>	SDG 2; SDG 5; AU Agenda 2063; Malabo Declaration 3; RAP 21.5; RAIP 5; SADC FNSS SO3
	Reduced hunger and food insecurity	Poverty Income and Expenditure Survey Reports		SDG 1; SDG 5; SDG 10; AU Agenda 2063 67a; Malabo Declaration 4;
<b>Outcomes</b>				
1. Improved agricultural productivity and food and nutrition security	Population at risk of food insecurity annually	Regional and National Vulnerability Assessment Committee Reports	Farmers willingness to adopt improved technologies, good management practices and climate smart agriculture	SDG 2; AU Agenda 2063-67.d; Malabo Declaration 3; RAP 9.1, 10.1 and 10.2; RAIP 3.3.5; SADC FNSS SO1;
	Dietary Diversity Scores (women and children)	National Nutrition Surveys		
	Annual crop yield in each participating country	Crop Production Survey Reports		
	Annual rate of livestock and fish yield in each participating country	Livestock Production Survey Reports		
2. Natural resources managed sustainably, increased resilience to transboundary pests and	Proportion of crop and livestock farmers practicing one or more climate-smart farming methods	<ul style="list-style-type: none"> <li>▪ Agricultural Census Report</li> <li>▪ Crop focus survey reports</li> </ul>	Climate change impacts are not too catastrophic to wipe out smallholder farming	SDG 13; SDG 15; AU Agenda 2063 67c and d; RAP 10.3-10.6; RAIP 3.3.1, 3.3.4 and 3.3.5;

Results	Indicators	Means of Verification	Assumptions	Links to Development Frameworks
diseases and adverse impacts of climate change and contribution to climate change mitigation	Proportion of farmers practicing recommended land, soil and water management measures		SADC Regional efforts towards trade integration continue	SADC Climate Change Strategy and Action Plan
	Proportion of input suppliers practicing one- or more environmentally sustainable measures	Rural Vulnerability Assessment Reports	Agricultural industrialisation remains a top priority for SADC countries	
	Proportion of agricultural marketing agents practicing one or more environmentally sustainable measures in their businesses	Baseline, mid-term and end-of-term surveys to evaluate CCARDESA's Strategic Plan.		
	Proportion of agro-processors practicing one or more environmentally sustainable measures in their businesses			
3. Increased commercialisation and participation of farmers in lucrative agricultural markets	Proportion of smallholder farmers engaged by CCARDESA through AR4D institutions selling their agricultural produce to lucrative markets	Agricultural Export Statistics	Global fair-trade campaigns continue and expand to create opportunities for more smallholder farmers	RAP 14.1 and 15.1; RAIP 3.3.2;
	Quantity and value of agricultural exports to niche markets supplied by smallholder farmers	Crop and livestock production focus survey reports		AU Agenda 2063 67c; RAP 17.1;

Results	Indicators	Means of Verification	Assumptions	Links to Development Frameworks
	(disaggregated by type of commodity)			
	Proportion of smallholder farmers (especially women, youth and vulnerable groups) with access to finance for their enterprises	Agricultural Census and Survey Reports		RAP 18.1, 21.1 and 24.1; RAIP 3.3.3;
4. Women, youth and vulnerable groups are empowered and play a meaningful role in agricultural value chains	Proportion of female farmers producing and selling cash crops, livestock and other agricultural commodities	<ul style="list-style-type: none"> <li>▪ Crop and livestock production estimate survey reports</li> <li>▪ Annual National Vulnerability Assessment Committee Reports</li> <li>▪ Agricultural Marketing Survey Reports</li> <li>▪ Agricultural Export Statistics</li> </ul>	<ul style="list-style-type: none"> <li>▪ Women, youth and other vulnerable groups are willing to take up agricultural activities</li> <li>▪ Agricultural marketing policies remain supportive of investment in various parts of the value-chain</li> </ul>	RAP 11.3; RAP 14.1;
	Number of women, youths and other vulnerable groups engaged in agricultural value chains that have been supported by participating AR4D institutions	<ul style="list-style-type: none"> <li>▪ Agricultural Census Reports</li> <li>▪ Labour Force Survey Reports</li> <li>▪ Global Value Chain Reports</li> </ul>		RAP 24.1;
	Number women, youth and other vulnerable groups running agri-business enterprises			RAP 14.1; RAP 17.1; RAP 21.1; RAIP 3.3.2

Results	Indicators	Means of Verification	Assumptions	Links to Development Frameworks
5. Agricultural research for development stakeholders at sub-national, national, regional and global levels are provided with information and knowledge to make informed decisions and contribute to agricultural transformation	Number of national food and agricultural policies developed/reviewed with CCARDESA's support	Crop and livestock production focus survey reports  Agricultural Census Reports	Governments continue to support agricultural stakeholders through the national budget and market-friendly programmes and Policies	RAP 17.1
	Number of AR4D institutions supporting the adoption of improved agricultural practices, strategies and technologies derived from CCARDESA's ICKM/SAAIK Systems			RAP 11.2; RAIP 3.3.5;
6. Institutional capacity of CCARDESA and AR4D institutions in Member States strengthened to deliver on their mandates	Amount of financial resources mobilised by CCARDESA for AR4D initiatives in the region	CCARDESA financial reports	Member States commitment to continue to support the mandate of CCARDESA  Development partners are willing to partner with CCARDESA to achieve its agenda	Malabo Declaration 1; RAP 11.1; RAP 11.3; RAIP 3.3.1;
	Level of disbursement by Member States to fund core mandate of CCARDESA			
	Level of stakeholders' satisfaction with services rendered to them by AR4D institutions	Client Feedback Statistics received through CCARDESA's Knowledge Management		

Results	Indicators	Means of Verification	Assumptions	Links to Development Frameworks
		Platform.		
<b>Outputs</b>				
<b>Thematic area 1: Agricultural productivity and food and nutrition security</b>				
1.1 AR4D institutions supported to develop and promote adoption of new and existing technologies, innovations and management practices by farmers and other value chain actors.	Number of new technologies, innovations and management practices developed by each AR4D institution per year	Programmes Reports of AR4D institutions	Government funding of R&D institutions remains in acceptable margins	
	Number of new and existing technologies, innovations and management practices promoted by each AR4D institution for adoption by value chain actors per year			
1.2 Capacity of AR4D to promote nutrition-sensitive agriculture and food systems strengthened	Number of AR4D institutions that have integrated nutrition-sensitive agriculture into their R&D programmes	Programme Reports of AR4D institutions	The regional emphasis on the importance of the multi-sectoral approach driven by a food systems concept is sustained and becomes well-known by policy makers in the region	

Results	Indicators	Means of Verification	Assumptions	Links to Development Frameworks
<b><i>Thematic area 2: Resilience to emerging agricultural risks: environmental, climate change and transboundary pests and diseases</i></b>				
2.1 Incidences of trans-boundary pest and diseases managed effectively	Incidences of transboundary pest and diseases managed effectively	<ul style="list-style-type: none"> <li>▪ Programme Reports of national AR4D institutions</li> <li>▪ Emergency Transboundary Outbreak Pest (ETOP) Situation Reports</li> <li>▪ SADC Animal Health Year books</li> <li>▪ OIE Regional Office Annual Reports for Southern Africa</li> </ul>	SADC countries remain committed to collaborative efforts to fight outbreaks and spread of transboundary diseases and pests affecting crop and livestock farming	
2.2 AR4D institutions strengthened to support farmers and other value-chain actors to sustainably manage the environment	Number of farmers and other value-chain actors capacitated by AR4D institutions to sustainably manage the environment	Programme Reports of AR4D institutions	Governments continue to prioritise sustainable management of the environment	
2.3 AR4D institutions strengthened to support farmers and other value-chain actors to adapt to and mitigate climate change	Number of farmers and other value-chain actors capacitated by AR4D institutions to manage climate change risks		Climate change and other agricultural risks remain high on national Government priorities	



Results	Indicators	Means of Verification	Assumptions	Links to Development Frameworks
2.4 AR4D institutions strengthened to support disaster risk reduction management initiatives in their countries	Number of AR4D institutions that have increased their technical support to disaster risk reduction management initiatives in their countries		Disaster risk management remains a key objective on the national development agenda with resource allocation	
<b>Thematic area 3: Commercialisation of the agricultural sector and market access</b>				
3.1 Inter- and intra-regional trade in priority agricultural commodities promoted	Number of SPS certificates issued on agricultural commodities by category	Programme Reports of AR4D institutions	Governments continue to prioritise regional trade	
	Proportion of trade processes and procedures harmonized through CCARDESA support			
3.2 Smallholder farmers, especially women, youth and vulnerable groups have access to lucrative markets	Number of smallholder farmers, disaggregated by gender, age and vulnerability, engaged by AR4D institutions accessing lucrative markets	Programme Reports of AR4D institutions	Conditions of doing business in agriculture remain conducive to private sector investment	
3.3 Women, youth and vulnerable groups access	Number of women, youth and vulnerable people			

<b>Results</b>	<b>Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>	<b>Links to Development Frameworks</b>
finance for their enterprises	supported by financial institutions in their agricultural enterprises			
<b><i>Thematic area 4: Women, youth and social inclusion</i></b>				
4.1 AR4D technologies and innovations specifically targeting women, youth and vulnerable groups identified and promoted	Number of AR4D technologies and innovations specifically targeting women, youth and vulnerable groups	Programme Reports of AR4D institutions	Member States are committed to fulfilling their regional and national goals on gender equality, women's economic empowerment, youth employment, and addressing the needs of vulnerable groups	
<b><i>Thematic area 5: Knowledge and information management, communication and policy support</i></b>				
5.1 Knowledge products disseminated through CCARDESA's Information, Communication and Knowledge Management (ICKM) System	Number of knowledge products disseminated through the ICKM/SAAIK Systems	CCARDESA Programme Reports	Agricultural value chain actors willing to invest time to access and utilise knowledge and information products	
5.2 AR4D institutions adopt in the use of digital innovations and ICT tools with potential to transform agriculture	Number of people trained in the use of digital innovations and ICT tools to disseminate agricultural information	CCARDESA Programme Reports	Private sector ICT companies willing to use their infrastructure to support agriculture value chain actors	
6 National Agricultural Policies harmonised with CCARDESA support	Number of National Agricultural Policies reviewed/developed with	<ul style="list-style-type: none"> <li>▪ CCARDESA M&amp;E Reports</li> <li>▪ National AR4D Policy</li> </ul>	Commitment by Member States to continue improving food and	

Results	Indicators	Means of Verification	Assumptions	Links to Development Frameworks
	CCARDESA support	Documents	agricultural policies for maximum effectiveness and impact	
<b>Thematic area 6: Capacity strengthening of CCARDESA and AR4D institutions</b>				
6.1 Effective and efficient governance, management, funding and resource mobilisation systems for CCARDESA	Proportion of CCARDESA staff posts filled	CCARDESA Programme Reports	Environment remains enabling for CCARDESA to retain staff and mobilise resources	
	Proportion of projects managed with no more than 10% deviation from plan		The political and economic environment remains supportive of implementation and budget absorption	
	Amount of financial resources mobilized by CCARDESA per year	CARDESA Financial Reports	Member States committed to continue support to CCARDESA Funding partners willing to support CCARDESA's programmes	
6.2 Functional CCARDESA business development unit and partnerships established	Number of new businesses established	CCARDESA Programme Reports		
	Number of functional partnerships established			
6.3 Member State AR4D institutions' programmes managed efficiently	Number of new technologies and innovations generated and released to the market by AR4D	Programme Reports of NARES	AR4D institutions able to retain key staff and research facilities	

Results	Indicators	Means of Verification	Assumptions	Links to Development Frameworks
	institutions for adoption by value-chain actors per year			
6.4 Regional AR4D agenda developed and periodically reviewed	Number of regional agenda and foresight documents produced	Regional AR4D agenda and foresight documents	AR4D institutions and other agricultural value chain actors value a regional approach to AR4D	

## Annex 4: Summary of thematic areas

Thematic Area	Thematic Objective	Thematic Strategy	Outcome	Output
1 Agricultural productivity and food and nutrition security	To achieve increased agricultural productivity and food and nutrition security, with a special focus on smallholder farmers and priority commodities.	To support AR4D institutions to develop and promote adoption of existing and new technologies, innovations and management practices for increased productivity and nutrition-sensitive transformative agriculture	Agricultural productivity and food and nutrition security in priority commodities increased	<ul style="list-style-type: none"> <li>• New and existing technologies, innovations and management practices developed and promoted by AR4D institutions and productivity increase</li> <li>• Nutrition-sensitive agriculture integrated into AR4D institutions programmes and resilient national and regional food systems improved.</li> </ul>
2 Resilience to emerging agricultural risks: environmental, climate change and transboundary pests and diseases	To increase the resilience of smallholder farmers to climate change and reduce the risks in their production systems through a cross-sectoral approach.	To strengthen early detection and rapid response to trans-boundary pests and diseases and increase resilience to climate change	AR4D institutions and value chain actors capacitated to build resilience to climate change and sustainably manage natural resources as well as trans-boundary pests and diseases.	<ul style="list-style-type: none"> <li>• Enabling regional environment for effective management of pests and diseases as well as natural resources created.</li> <li>• Farmers and other value-chain actors supported to sustainably manage the environment and resilient value chains promoted</li> <li>• The impact of climate change and risk of pest and diseases on farmers and natural resources mitigated</li> <li>• AR4D institutions capacitated to support disaster risk reduction initiatives at national level.</li> </ul>
3	The objective of this	To promote	AR4D institutions	<ul style="list-style-type: none"> <li>• Foresight on market trends for</li> </ul>

Commercialisation of the agricultural sector and market access	thematic area is to increase commercialisation of the smallholder agricultural sector and improve their access to good markets	commercialisation of smallholder agriculture through increasing productivity, value addition, and marketing with emphasis on commodity chain development	supported to improve the investment and trade environment that will both deepen and sustain market linkages and improve financing of smallholder farmers	<p>regional priority agricultural commodities to enhance market-driven production provided</p> <ul style="list-style-type: none"> <li>• Integration of smallholder farmers into value chains and their capacity to access capital to invest in market-driven production supported</li> <li>• Value chain actors access to technologies, innovations and management practices (TIMPs) improved</li> <li>• Participation of women and youth in commercialisation and markets linkages improved</li> </ul>
4 Women, youth and social inclusion	To empower women, youth and vulnerable people through actions that will make them play a meaningful role in agricultural value chains.	To promote appropriate agricultural technologies and innovations for women, youth and vulnerable groups.	Women, youth and vulnerable people are empowered and play a meaningful role in agricultural value chains.	<ul style="list-style-type: none"> <li>• AR4D technologies and innovations specifically targeting women, youth and vulnerable groups developed and promoted.</li> <li>• AR4D institutions supported to develop interventions that will increase participation of women, youth and other vulnerable groups in agricultural value chains</li> <li>• Principle of inclusiveness in the planning and execution of AR4D interventions promoted.</li> </ul>
5 Knowledge and information management, communication	To ensure that the regional agricultural research for development stakeholders is provided with information	To provide Agricultural research for development stakeholders with	Effective engagement and contribution of key stakeholders within the national	<ul style="list-style-type: none"> <li>• Knowledge management hubs to foster collaboration and information sharing among various stakeholders in different countries</li> </ul>

and policy support	and knowledge to make informed decisions and support agricultural transformation	information and knowledge to ensure evidence based policy making within the agricultural sector	agricultural innovation system at regional level	<p>created</p> <ul style="list-style-type: none"> <li>• Access to audience-specific agricultural knowledge and information through CCARDESA's ICKM and the Southern Africa Agriculture Information and Knowledge System (SAAIKS) enhanced</li> <li>• NARES institutions strengthened in information packaging and use of digital innovations and ICT with potential to transform agriculture</li> </ul>
6 Capacity strengthening of CCARDESA and AR4D institutions	To strengthen the institutional capacity of CCARDESA and AR4D institutions in Member States to deliver on their mandates.	To increase the effectiveness and capacity of NARES and CCARDESA Secretariat in governance, management, human capital and finance	Efficient functioning of governance, management, funding and resource mobilisation systems of CCARDESA and AR4D institutions capacitated	<ul style="list-style-type: none"> <li>• Regional AR4D agenda developed and foresight provided to AR4D institutions</li> <li>• Governance, management, funding and resource mobilisation systems for CCARDESA strengthened</li> <li>• New strategic partnerships established and existing ones strengthened.</li> <li>• AR4D institutions' programmes supported and managed efficiently</li> </ul>

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