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INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED MULTI DONOR TRUST FUND

IN THE AMOUNT OF US\$26.04 MILLION

TO THE

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

June 3, 2014

Agriculture, Rural Development, and Irrigation (AFTA2)
Africa Regional Integration Department (AFCRI)
Africa Region

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CURRENCY EQUIVALENTS

Currency Unit = US\$

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AET	Agricultural Education and Training
AFAAS	African Forum for Agricultural Advisory Services
AFAPP	African Food and Agricultural Policy Platform
AIMS	Agricultural Information Management System (SADC)
APPSA	Agricultural Productivity Program for Southern Africa
ASARECA	Association for Strengthening Agricultural Research in East and Central Africa
ASTI	Agricultural Science and Technology Indicator
AU	African Union
AWP&B	Annual Work Plan and Budget
CAADP	Comprehensive Africa Agricultural Development Programme
CCARDESA	Centre for Coordination of Agricultural Research and Development for Southern Africa
CGIAR	Consultative Group on International Agricultural Research
CIDA	Canadian International Development Agency
COMESA	Common Market for Eastern and Southern Africa
CORAF/WECARD	<i>Conseil Ouest et Centre Africain Pour la Recherche et la Développement Agricole</i> (West and Central African Council for Agricultural Research and Development)
CYMMIT	<i>Centro Internacional de Mejoramiento de Maiz y Trigo</i> (International Maize and Wheat Improvement Center)
DfID	Department for International Development (UK)
EC	European Commission
EIA	Environmental Impact Assessment
ESMF	Environmental and Social Management Framework
FAAP	Framework for African Agricultural Productivity
FANR	Food, Agriculture and Natural Resources (Directorate of SADC)
FARA	Forum for Agricultural Research in Africa
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GMU	Grant Management Unit
HIV/AIDS	Human Immuno-deficiency Virus/Acquired Immune Deficiency Syndrome
IARC	International Agricultural Research Centre
IAR4D	Integrated Agricultural Research for Development
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICT	Information and Communication Technology
IDA	International Development Association

IEI	Invitation for Expression of Interest
IFPRI	International Food Policy Research Institute
IFR	Interim Unaudited Financial Report
IITA	International Institute of Tropical Agriculture
ILRI	International Livestock Research Institute
IP	Innovation Platform
IPM	Integrated Pest Management
IPMP	Integrated Pest Management Plan
IR4D	Integrated Research For Development
ISP	Implementation Support Plan
M&E	Monitoring and Evaluation
MDTF	Multi-Donor Trust Fund
MTOP	Medium Term Operational Plan
MTR	Mid Term Review
NARES	National Agricultural Research and Extension System
NARS	National Agricultural Research Systems
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organization
NPCA	NEPAD Planning and Coordinating Agency
PAC	Project Appraisal Committee
PAD	Project Appraisal Document
PDO	Project Development Objective
PMP	Pest Management Plan
R&D	Research and Development
ReSAKSS-SA	Regional Strategic Analysis And Knowledge Support Systems for Southern Africa
RIAS	Regional Integration Assistance Strategy (World Bank)
SACCAR	Southern African Centre for Cooperation in Agricultural Research and Training
SADC	Southern African Development Community
SDC	Swiss Development Cooperation
SOE	Statement of Expenditure
SRO	Sub-regional Organization
SSA	Sub-Saharan Africa
TOR	Terms of Reference
TSG	Technical Support Group
USAID	United States Agency for International Development

Regional Vice President:	Makhtar Diop
Country Director:	Colin Bruce
Sector Director:	Jamal Saghir
Sector Manager:	Severin Kodderitzsch
Task Team Leaders:	Melissa Brown David Nielson

AFRICA
CCARDESA Multi-Donor Trust Fund

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PAD DATA SHEET

Africa

*Centre for Coordination of Agricultural Research and Development for Southern Africa
(CCARDESA) (P113629)*

PROJECT APPRAISAL DOCUMENT

AFRICA

AFTA2

Report No.: PAD644

Basic Information			
Project ID P113629	EA Category B - Partial Assessment	Team Leader Melissa Brown	
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints []		
	Financial Intermediaries []		
	Series of Projects []		
Project Implementation Start Date 03-June-2014	Project Implementation End Date 31-Dec-2018		
Expected Effectiveness Date 06-June-2014	Expected Closing Date 31-Dec-2018		
Joint IFC No			
Sector Manager Severin L. Kodderitzsch	Sector Director Jamal Saghir	Country Director Colin Bruce	Regional Vice President Makhtar Diop
Borrower: CCARDESA			
Responsible Agency: CCARDESA			
Contact: Telephone No.:	Title: Email:		
Approval Authority			
Approval Authority RVP Decision			
Given that the CCARDESA MDTF may include sub-grants to public, private, or civil society institutions undertaking agricultural R&D activities (R&D institutions) located in Zimbabwe, approval of the Executive Directors was sought under BP 14.40 Trust Funds, paragraph 4, footnote 7, which requires Executive Directors to approve any Bank-administered Trust Fund where it would provide assistance to a member not in good standing			

with the Bank. A Board Paper (Report 87057) was approved on an absence of objection basis by the Executive Directors on May 28, 2014. In particular, the Board approved: (a) the CCARDESA MDTF to finance activities in Zimbabwe through CCARDESA; and (b) delegated to the Vice President, Africa Region, authority to approve grants to CCARDESA.

Project Financing Data(in USD Million)									
<input type="checkbox"/>	Loan	<input checked="" type="checkbox"/>	Grant	<input type="checkbox"/>	Guarantee				
<input type="checkbox"/>	Credit	<input type="checkbox"/>	IDA Grant	<input type="checkbox"/>	Other				
Total Project Cost:			26.04		Total Bank Financing:			0.00	
Financing Gap:			0.00						
Financing Source				Amount					
Borrower				0.00					
CAADP Pillar 4 institutions				26.04					
Total				26.04					
Expected Disbursements (in USD Million)									
Fiscal Year	2014	2015	2016	2017	2018	2019	0000	0000	0000
Annual	1.00	2.33	6.30	5.25	6.45	4.71	0.00	0.00	0.00
Cumulative	1.00	3.33	9.63	14.88	21.33	26.04	0.00	0.00	0.00
Proposed Development Objective(s)									
The objective is to facilitate integrated agricultural research for development within the SADC region with the aim of contributing to increased productivity of small holder crop, forestry, fish and livestock enterprises in the region.									
Components									
Component Name						Cost (USD Millions)			
CCARDESA Thematic Programs						13.43			
CCARDESA Management and Governance						11.52			
Management, Administration and Supervision of the MDTF						1.09			
Institutional Data									
Sector Board									
Agriculture and Rural Development									
Sectors / Climate Change									
Sector (Maximum 5 and total % must equal 100)									
Major Sector			Sector		%	Adaptation Co-benefits %		Mitigation Co-benefits %	

Agriculture, fishing, and forestry	Agricultural extension and research	90	40	
Education	Tertiary education	10		
Total		100		
<input type="checkbox"/> I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.				
Themes				
Theme (Maximum 5 and total % must equal 100)				
Major theme	Theme	%		
Rural development	Rural services and infrastructure	67		
Rural development	Rural policies and institutions	33		
Total		100		
Compliance				
Policy				
Does the project depart from the CAS in content or in other significant respects?		Yes []	No [X]	
Does the project require any waivers of Bank policies?		Yes []	No [X]	
Have these been approved by Bank management?		Yes []	No []	
Is approval for any policy waiver sought from the Board?		Yes []	No [X]	
Does the project meet the Regional criteria for readiness for implementation?		Yes [X]	No []	
Safeguard Policies Triggered by the Project		Yes	No	
Environmental Assessment OP/BP 4.01		X		
Natural Habitats OP/BP 4.04			X	
Forests OP/BP 4.36			X	
Pest Management OP 4.09		X		
Physical Cultural Resources OP/BP 4.11			X	
Indigenous Peoples OP/BP 4.10			X	
Involuntary Resettlement OP/BP 4.12			X	
Safety of Dams OP/BP 4.37			X	
Projects on International Waterways OP/BP 7.50			X	
Projects in Disputed Areas OP/BP 7.60			X	
Legal Covenants				
Name	Recurrent	Due Date	Frequency	

Procurement Officer		15-Nov-2014	
Description of Covenant			
Dated Covenant: The Recipient shall no later than six months after the Effective Date, recruit a procurement officer for the Project, with qualification, experience and terms of reference satisfactory to the World Bank.			
Name	Recurrent	Due Date	Frequency
Procurement Committee		15-Aug-2014	
Description of Covenant			
Dated Covenant: The Recipient shall no later than three months after the Effective Date, operationalize a procurement committee to oversee the procurement activities under the Project.			
Conditions			
Source Of Fund	Name	Type	
CDP4	Final Sub-Grant Manual	Disbursement	
Description of Condition			
Disbursement condition: No withdrawal shall be made under Category (2) until the Recipient has presented evidence satisfactory to the World Bank that the Sub-Grant Manual referred to in Section I. D. of Schedule 2 to the Agreement has been prepared and adopted.			
Source Of Fund	Name	Type	
CDP4	Retroactive financing	Disbursement	
Description of Condition			
Retroactive Financing: No withdrawal shall be made for payments made prior to the date of this Agreement except that withdrawals up to an aggregate amount not to exceed US\$600,000 may be made for payments made prior to this date but on or after January 1, 2014 for Eligible Expenditures under Category (1).			
Team Composition			
Bank Staff			
Name	Title	Specialization	Unit
Syed I. Ahmed	Lead Counsel	Lead Counsel	LEGAM
David J. Nielson	Lead Agriculture Services Specialist	Lead Agriculture Services Specialist	AFTA2
Alexandra C. Sperling	Legal Analyst	Legal Analyst	LEGAM
Luis M. Schwarz	Senior Finance Officer	Senior Finance Officer	CTRLA
Melissa Brown	Economist	Team Lead	AFTA2
Pauline McPherson	Senior Operations Officer	Senior Operations Officer	AFTA2
Mei Wang	Senior Counsel	Senior Counsel	LEGAM
Patrice Sade	Program Assistant	Program Assistant	AFTA2
Chitambala John	Procurement Specialist	Procurement Specialist	AFTPE

Sikazwe					
Tandile Gugu Zizile Msiwa	Financial Management Specialist	Financial Management Specialist	AFTME		
Herbert Oule	Environmental Specialist	Environmental Specialist	AFTN3		
Non Bank Staff					
Name	Title	Office Phone	City		
Matt McMahon	Consultant				
Locations					
Country	First Administrative Division	Location	Planned	Actual	Comments
Botswana	South East	Gaborone		X	CCARDESA HQ

I. STRATEGIC CONTEXT

A. Regional Context

1. ***Agriculture underpins the economy throughout much of southern Africa.*** The countries of southern Africa¹ are home to about 277 million people and generate total Gross Domestic Product (GDP) of around US\$575 billion.² Agriculture varies in importance from country to country, but across the entire region it is the primary source of subsistence, employment, and income for most of the population. Particularly in the lower income countries, agriculture is the largest contributor to GDP, and the performance of the agricultural sector has a strong influence on growth, employment, food security, and poverty. Agricultural growth contributes to overall economic growth not only because agriculture makes up a significant share of GDP, but also because growth in the agricultural sector has a strong multiplier effect on non-agricultural sectors through production and consumption linkages.

2. ***Food crops production is the dominant agricultural activity.*** Agriculture in southern Africa is dominated by production of food crops, including cereals (e.g., maize, sorghum, rice), roots and tubers (e.g., cassava, sweet potato), and food legumes (e.g., groundnuts, beans, soybeans). The largest contributors to agricultural revenue in the Southern African Development Community (SADC) region are maize, fruits, beef, roots, tubers, milk, and poultry (not including forestry and fisheries). While livestock production has over the years gained prominence, the dominant sub-sector remains crops which contribute on average 65 percent of total agricultural revenue (SADC, 2012).

3. The performance of the food crops sub-sector significantly affects the performance of the agricultural sector overall, as well as incomes and poverty levels throughout the entire economy, not only because of the scale effect (millions of poor rural households benefit directly from increased production of food crops through their own consumption and sales), but also because of price effects (poor households in rural and urban areas benefit indirectly from increased production of food crops, through lower food prices).

4. ***Agricultural productivity is far below potential.*** Agricultural productivity has increased in recent years throughout sub-Saharan Africa (SSA) and within southern Africa in particular, but most of the growth has come from bringing previously uncultivated land into production, rather than from intensification made possible by technical change. Comparisons of total factor productivity growth have shown that during the past decade, technical change accounted for a large share of agricultural productivity growth in Asia and Latin America, but a very small share of agricultural productivity growth in Africa. Southern Africa has experienced more technology-driven productivity growth than other regions in Africa, but the gains have occurred mainly in middle income countries. Analysis has identified a number of yield gaps (the difference between actual and potential yields) that could be narrowed with additional investments in technology adaptation and dissemination.

¹ The region referred to in this document as “southern Africa” includes Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mozambique, Mauritius, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

² Source: www.sadc.int (accessed April 22, 2014).

5. ***Food and nutrition insecurity is widespread.*** Even though the performance of agriculture in southern Africa has improved recently, the sub-region as a whole suffers from periodic food deficits and recurring food price crises, as well as some of the worst nutrition indicators in the world. According to UNICEF (2012), southern Africa has shown no improvement since 1990 in reducing the proportion of children who are underweight and the absolute number of underweight children has actually increased, due mainly to recurring food crises associated with drought, and rising levels of poverty. At the same time, HIV/AIDS has posed serious challenges to nutrition development.

6. ***Improving adaptation to more extreme temperatures and changing variability in rainfall patterns is a key issue for the region.*** Southern Africa is vulnerable to climate shocks, which have the potential to impact food security adversely. Recent analysis has revealed that shifts in climate patterns are likely to expose many countries in southern Africa to greater variability and more pronounced extremes of temperature and rainfall. Adaptation measures, particularly the adoption of climate-smart agricultural practices, will be needed to maintain productivity and ensure resilience in the face of more frequent and more severe shocks.

7. ***Agriculture has the potential to drive growth and poverty reduction.*** The *World Development Report 2008: Agriculture for Development* (World Bank, 2007) concluded that agricultural growth is the key to achieving overall growth, reducing poverty, and increasing food security for the rural poor. Growth originating in agriculture is four times as effective in reducing poverty as growth originating outside of the agricultural sector. Agricultural growth depends greatly on improvements in agricultural productivity, and investments in agricultural research and technology are among the most important determinants of agricultural productivity. The World Development Report emphasized that agricultural growth in Africa has been driven mainly by expanding cultivated area, a strategy that is far from sustainable. An alternative strategy is to create the conditions that enable agricultural productivity to increase.

8. ***Southern Africa's changing demographics underscore the need for broad-based agricultural development.*** Although urbanization is increasing—urban areas are expected to account for half of the population in the SADC region—trends in population growth mean SADC will still experience an estimated 20 percent increase in the rural population by 2030 (SADC 2012). SADC estimates employment in agriculture will need to grow by over 21 percent in the SADC region between 2010 and 2020 to absorb the increase in the rural population.

9. ***An increasingly integrated regional market presents opportunities for agriculture.*** Southern Africa includes both low income and middle income countries and hosts two well-established pan-African institutions covering agriculture and commerce, SADC and the Common Market for Eastern and Southern Africa (COMESA). The presence within the region of seven middle-income countries,³ including South Africa, provides a large regional market for agricultural products. The extensive area falling within the so-called Guinea Savannah zone shows strong potential for highly productive commercial agriculture, similar to that found in similar zones of Latin America and Asia (World Bank, 2006). Reforms instituted at both regional and national levels have resulted in a more conducive policy environment for growth in the agriculture sector. While some exceptions exist, reforms have reduced barriers to trade in agricultural commodities, addressed taxation and price policies that provided negative incentives

³ Angola, Botswana, Mauritius, Namibia, Seychelles, South Africa, and Swaziland.

of producers and improved the availability of improved agricultural technologies—particularly inputs.

B. Sectoral and Institutional Context

10. *Investment in agricultural research and development (R&D) is needed to get agriculture going.* Improvements in agricultural productivity come from investments in agricultural R&D. Hundreds of published studies have confirmed that the returns to investments in agricultural R&D are consistently very high. For a number of reasons, however, investment in agricultural R&D, both in the private sector and in the public sector, is frequently well below optimal levels. Private firms tend to underinvest in R&D because of the difficulty of appropriating the benefits of research. Governments tend to underinvest in R&D because some of the benefits spill over to other countries.

11. *Agricultural research is underfunded, particularly in Africa.* A recent assessment by the Agricultural Science and Technology Indicators (ASTI) initiative shows low levels of investment throughout Africa in agricultural R&D, as well as a high degree of fragmentation. Public agricultural R&D investment in Africa—estimated to total about US\$1.7 billion in 2008—is similar to that in Brazil, but in Africa the same level of investment supports more than twice as many full-time-equivalent scientists, implying that operating budgets are much lower in Africa. Meanwhile, although Africa, India, and the United States have roughly the same cropped area, Africa has approximately 390 public research institutes, compared to 120 in India and only 51 in the United States. The dispersion of R&D investment and agricultural scientists in Africa across so many small institutes makes it difficult to assemble in the same location the critical mass of researchers needed to address the generally more complex problems of African agriculture.

12. *Regional integration can help agricultural R&D pay off.* Regional integration has proven to be an effective strategy that can allow groups of countries facing common research challenges to increase the efficiency of their investments in agricultural R&D. Adoption of a regional approach to research based on the concentration of resources within a reduced number of large, specialized research institutes serving an expansive shared technology space can deliver a number of benefits. First, it can reduce duplication by allowing a single regional research institute to undertake work that otherwise would be done in parallel within multiple national research institutes. Second, it can help capture economies of scale by concentrating resources within a single institute, where they can achieve a critical mass. Third, it can increase the payoffs to research by facilitating dissemination of improved technologies across national borders, thereby vastly increasing the number of beneficiaries. Fourth, it can mitigate the isolation that frequently occurs in small, fragmented research institutes by creating effective mechanisms for facilitating knowledge exchange and technology transfer.

13. *The potential for regional spillovers is strong.* Groups of countries within southern Africa share similar agro-ecological zones and farming systems, suggesting that there is potential for finding shared solutions to common problems. Technology spillover is already occurring within the sub-region, and a number of high-yielding crop varieties and improved crop and livestock management practices have been successfully disseminated across borders. Significant unrealized potential remains, however, for expanding spillovers. Recent analysis undertaken by the International Food Policy Research Institute (IFPRI) identified opportunities for technology

spillover between SADC countries based on trends in regional demand for major crop and livestock products, characteristics of local agricultural production environments, and current patterns of production. The analysis revealed numerous instances in which SADC countries could take advantage of existing technologies that are well adapted to their production environments to increase production of crop and livestock products for which there is unmet demand within the sub-region.

14. ***Agricultural technology generation and dissemination systems in southern Africa can be more effective and more efficient.*** The policy conditions needed to facilitate the movement of agricultural technology within the sub-region are in place, but national systems face challenges in improving their technology and service delivery systems, including a lack of capacity to implement technology transfer, ineffective extension services, and bottlenecks in information systems for innovation. National systems for generating and disseminating agricultural technology are operating well below their potential, constrained by inadequate facilities, shortages of qualified staff, and low levels of overall investment and budget support. These factors, in turn, are linked to the high degree of fragmentation in the deployment of resources within the sector, as limited financing is spread over a range of priorities. Given the small size of many countries and economies in the sub-region, few can afford fully elaborated technology development systems capable of addressing all of the crops and livestock breeds in their highly diversified production systems.

15. ***Regional approaches to the R&D are needed to address shared priorities—including increasing climate variability.*** The SADC region's research agenda will need to address a number of shared priorities—regional priority commodities such as cereals, legumes, fruit/vegetables, livestock that demonstrate the highest potential for contributing to agricultural growth—as well as the climate adaptation agenda. A focus on both small and large scale farming systems is needed to meet the needs of smallholder commercial enterprises and their limited access to resources and asset endowments (land, capital, knowledge, and agro-ecology).

16. ***Regional integration is part of the CAADP productivity agenda.*** The majority of African countries, including many of the countries in southern Africa, are pursuing national agricultural development strategies within the framework of the Comprehensive Africa Agriculture Development Programme (CAADP).⁴ CAADP has identified lagging agricultural productivity growth as a central constraint that must be overcome if countries are to achieve desired rates of agricultural production increases. CAADP has articulated a set of priorities and best practices needed to boost agricultural productivity growth. These are embodied in the Framework for African Agricultural Productivity (FAAP), which among other things calls for significantly scaling up regional collaboration in agricultural R&D as a way to efficiently address capacity constraints and increase technology spillovers.

17. ***Support for a regional approach to agricultural R&D is growing.*** SADC has taken a proactive role in pursuing the agricultural productivity agenda. It has expressed strong ownership of a regional approach to agricultural research focusing on programs that are of strategic importance to the region and that have large potential for spillovers across country borders. Public proclamations concerning the commitment to a regional approach are being backed up by

⁴ CAADP is an African-owned initiative under which African countries are being encouraged to improve the quality of their agricultural planning and policy making, so as to provide the basis for scaled-up investment in the sector.

concrete actions. For example, SADC Member States have adopted a common seed certification policy, with the aim of increasing the movement of improved germplasm across national borders. More importantly, SADC is in the process of finalizing a regional agricultural policy initiative that would put in place mechanisms to support policy harmonization, improved flow of agricultural information, and increased integration of input and output markets.

18. ***The SADC region has recognized the need for new institutional mechanisms to support agricultural R&D.*** Until 2001, SADC's main instrument for strengthening agricultural technology development was the Southern African Centre for Cooperation in Agricultural Research and Training (SACCAR), a sub-regional organization (SRO) that had been established to coordinate the research programs of common interest to the national agricultural research systems (NARS) in the SADC sub-region, organize systematic knowledge sharing and human resource development, and strengthen partnerships with CGIAR centers and other advanced research institutions. In 2001, SACCAR was phased out as part of the SADC restructuring process. The closing of SACCAR was due in part to the general consolidation of all SADC's decentralized sector programs into one location within the SADC Secretariat as well as to the perceived lack of efficiency and cost-effectiveness of SACCAR by some Member States.

19. Between 2001 and 2011, agricultural technology development within the SADC sub-region was led by the Agricultural Research and Training Unit within the Food, Agriculture and Natural Resources (FANR) Directorate of SADC. The achievements of the Unit were limited by a lack of human resources (the Unit had only one staff position) and by weak linkages with NARS and with international partner institutions. As a result, SADC Member States called for a new institutional mechanism to scale up regional R&D coordination and move beyond a focus solely on agricultural research to encompass the full range of systems affecting agricultural productivity.

20. ***CCARDESA has emerged as a new institution with the strong support of SADC countries.*** The establishment of CCARDESA and its proposed program of activities was provisionally approved by the SADC Ministers responsible for Agriculture and Food Security in November 2008; the approval process was formally completed by mid-2011, when 14 of 15 SADC Member States had signed on to the charter. CCARDESA became fully operational in 2012 and its charter identifies five major objectives for the institution: (i) to coordinate and promote collaboration among regional and national agricultural research and extension systems through regional and international cooperation; (ii) to facilitate the exchange of information and technology among the SADC regional R&D institutions; (iii) to promote SADC region partnerships between public, private, civil society and international organizations in R&D; (iv) to improve agricultural technology generation, dissemination and adoption in the region through collective efforts, training and capacity building; and (v) to strengthen national R&D institutions by mobilizing human, financial and technological resources to implement and sustain demand-driven activities.

C. Higher Level Objectives to which the Project Contributes

21. ***CCARDESA will contribute to the highest level objectives of CAADP—general economic development, and eradication of poverty and hunger, by contributing to the sustainable improvement of agricultural productivity, competitiveness and markets.*** This will be done by scaling up the level of investment in agricultural research, extension, and education at

the regional level in the SADC region with the aim of accelerating the development and adoption of improved technology and practices in agriculture and agribusiness; by improving institutional effectiveness at the level of the national agricultural research and extension systems (NARES); and by supporting policy reforms and innovation related to regional approaches—including better integrated and coordinated programs at the national level.

22. ***The proposed MDTF is part of a larger initiative among development partners to provide long term, harmonized support to CAADP Pillar IV.***⁵ A core group of development partners (the World Bank, Canadian International Development Agency (CIDA), the United Kingdom’s Department for International Development (DfID), European Commission (EC), and the United States Agency for International Development (USAID)) has been instrumental in supporting agricultural technology and Pillar IV of CAADP at the sub-regional level. They have provided leadership in donor coordination and harmonization and have contributed to strengthening African capacity in the area of agricultural innovation. African capacity and ownership are crucial in an environment in which external support is both large and, often, fragmented. Thus far, four individual multi-donor trust funds (MDTFs) have been established at the World Bank for two other SROs: Association for Strengthening Agricultural Research in East and Central Africa (ASARECA), and Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricole/West and Central African Council for Agricultural Research and Development (CORAF/WECARD); as well as for two apex institutions: the Forum for Agricultural Research in Africa (FARA); and for the African Forum for Agricultural Advisory Services (AFAAS), which have responsibility for supporting CAADP Pillar IV at the continental level. The proposed MDTF for CCARDESA will provide more comprehensive support for Pillar IV activities within the SADC sub-region.

23. ***CCARDESA’s focus on enlarging the regional agricultural technology space is well aligned with the objectives of the World Bank’s Africa Strategy.*** The Africa Strategy emphasizes the need for investments to improve the competitiveness and resilience⁶ of African agriculture, and it identifies regional integration as an important mechanism to achieve higher rates of growth and poverty reduction. The Africa Strategy also highlights the scope for drawing important lessons from middle income countries and taking advantage of opportunities for them to serve as catalysts for growth and development to the rest of Africa. CCARDESA’s activities are also consistent with the World Bank’s Regional Integration Assistance Strategy (RIAS), specifically with the third pillar, which calls for interventions to boost agricultural productivity; improve preparedness to analyze and respond to trans-boundary pandemics, other infectious diseases, and pests; and the rationalization of regional research and tertiary education efforts.

24. ***Linkage to country strategies.*** The MDTF is consistent with the strategic priorities identified within individual SADC countries and will work closely with other relevant World Bank instruments operating in various countries.

⁵ CAADP Pillar IV aims to improve agricultural research and systems in order to disseminate appropriate new technologies.

⁶ Africa Strategy: Pillar 1 – Competitiveness and Employment; Pillar 3 – Vulnerability and Resilience.

II. PROJECT DEVELOPMENT OBJECTIVE

A. PDO

25. CCARDESA's overall development goal is to sustainably reduce food insecurity and poverty in the SADC region by increasing the productivity of smallholder crop, livestock, fisheries and forestry enterprises through the adoption of improved agricultural technologies, husbandry and marketing practices.

26. The project development objective for the MDTF is *to facilitate integrated agricultural research for development⁷ within the SADC region with the aim of contributing to increased productivity of smallholder crop, forestry, fish and livestock enterprises in the region*, as outlined in the CCARDESA Medium Term Operational Plan (MTOP). This would be achieved through:

- Promoting regional coordination and collaboration among NARS and Farmer Organizations;
- Facilitating the exchange of information and technology among agricultural R&D institutions;
- Promoting partnerships in the SADC region between public, private, civil society and international organizations in agricultural R&D;
- Improving agricultural technology generation, dissemination and adoption in the region through collective efforts, training and capacity building; and
- Mobilizing 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.⁸

B. Project Beneficiaries

27. The ultimate beneficiaries of CCARDESA R&D activities are farmers, livestock producers, agro-processors, and other potential end users of the improved technology and knowledge generated and/or disseminated by through CCARDESA financed activities. CCARDESA will engage directly with a subset of these beneficiaries—farmers or end users of technology—through their direct participation in R&D priority setting, and R &D sub-grants that will involve their participation in on-farm trials, technology demonstrations, or training. CCARDESA will work most directly with actors in the NARS: agricultural researchers; extension agents and advisory services providers; and seed producers and suppliers. These groups will benefit by leading and participating in R&D sub-grants and training activities, or by using technology and knowledge made available through the Project.

⁷ The integrated agricultural research for development (IAR4D) concept encourages the engagement of multiple actors along the commodity value chain with the aim of generating innovation in the agricultural system rather than mere research products or technologies. IAR4D promotes continuous interaction among researchers, service providers, farmers/end users; and the utilization of feedback, analysis and incorporation of lessons learned between different R&D processes.

⁸ These are the five overall objectives for CCARDESA established in the CCARDESA MTOP.
http://fara.webfactional.com/library/browse/fara_publications/IAR4D_concept_paper.pdf

C. PDO Level Results Indicators

28. CCARDESA supported activities are expected to contribute to more effective use of resources devoted to agricultural research among the member countries and promote wider access to the results of research throughout southern Africa. The MDTF is expected to generate the following primary and intermediate results:

- Improved access to and greater uptake of productive, profitable, and environmentally sustainable technologies in participating SADC countries;
- Increased generation or adaptation of technology within the sub-region;
- More effective sub-regional and national technology dissemination based on increased smallholder farmer participation in priority setting;
- Strengthened relationships between national, sub-regional, and international R&D institutions;
- Provision of effective support to national systems of participating countries;
- Enhanced adoption of pluralistic approaches, participatory mechanisms and empowered farmer support systems within the sub-region.

29. The primary PDO level indicators are:

- Percentage of projects funded by CCARDESA that generate technologies judged by NARS to have potential for dissemination to farmers (disaggregated by type of technology);
- Percentage of validated technologies made available to NARS and other stakeholders in the region;
- Number of collaborative research or extension projects under implementation;
- Direct Project beneficiaries, disaggregated by gender.

30. *Expected outcomes/outputs after 5 years.* The support would achieve the needed economies of scale in agricultural research effort across the SADC region to contribute needed technical solutions to regional challenges (such as climate change and plant disease) that inhibit productivity growth of smallholders. The project would support the operational establishment of CCARDESA that will help leverage additional financing for regional research from other donors, facilitate the adaptation and adoption of improved technologies, establish a longer-term competitive mechanism for identification of regional research priorities, and provide a demonstration of impact to member states for their future financial contributions.

III. PROJECT DESCRIPTION

A. Project Components

31. The MDTF will support two main areas of the CCARDESA MTOP: (i) CCARDESA Thematic Programs, and (ii) CCARDESA Management and Governance.

32. **Component 1: CCARDESA Thematic Programs (proposed MDTF Financing: US\$13.43 million).** CCARDESA activities will be organized around a set of priority thematic

areas developed out of a regional priority setting and consultation process. In the implementation of its thematic programs, CCARDESA will focus on challenges of a regional nature and will institute measures to address these challenges in conjunction with stakeholders (NARS, the Consultative Group on International Agricultural Research (CGIAR) centers, and regional and international partners). In line with the principle of subsidiarity, CCARDESA will concentrate on regional activities. Table 1 includes a list of CCARDESAs' main intervention areas of work along with primary implementation modalities.

Table 1: List of CCARDESA's Core Intervention Areas

Core intervention areas	Primary implementation modalities
Establishing and maintaining 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.	<ul style="list-style-type: none"> • Convening stakeholders across research, extension and education sub-sectors within the region to facilitate dialogue, prioritization and identification of joint activities • Competitive and commissioned sub-grants to facilitate regional activities that increase the inclusiveness and relevance of R&D activities to farmers/producer organizations, private sector and other actors within the value chain • Facilitating information flow and linkages between international and continental institutions and R&D stakeholders in the region
Mobilizing and deploying resources for implementation of regional activities in relation to research and technology generation, farmer empowerment and market access, access to quality information, capacity development of NARS and Farmer Organizations.	<ul style="list-style-type: none"> • Competitive and commissioned sub-grants to address regional technology generation and dissemination priorities • Regional training and capacity building • Needs assessment and technical assistance to identify capacity gaps or facilitate institutional strengthening for R&D stakeholders
Carrying out advocacy work with regard to Pillar 4 of CAADP and working with southern African countries to ensure that R&D is adequately addressed in the national CAADP compacts and investment plans.	<ul style="list-style-type: none"> • Provision of technical assistance and peer review to national CAADP processes • Contributions to or convening of dialogue around policy and institutional reform issues
Facilitating 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.	<ul style="list-style-type: none"> • Competitive and commissioned sub-grants for regional or multi-country out-scaling and dissemination activities • Convening of regional knowledge exchange events, hosting of regional electronic platforms or publications • Generating regional assessments or facilitating exchange of national diagnostics on pest and disease prevalence or natural resource management
Developing and implementing regional programs that address cross cutting issues of environment, youth participation, gender equity, and nutrition security.	<ul style="list-style-type: none"> • Support to new program design or development targeting regional priorities • Provision of regional coordination and collaboration services • Identification and dissemination of best practices through targeted studies, analytical work

33. Many thematic activities supported under CCARDESA will be financed through agricultural productivity and capacity building sub-grants within the context of sub-projects. A small number of activities will be executed by the CCARDESA Secretariat. Sub-grants will be

executed by partnerships or consortia of sub-regional institutions and will address agreed sub-regional technology generation and dissemination priorities and focus on solutions to problems that are common across the sub-region. Eligibility for financing will be open to a wide range of R&D actors within the SADC region. Financing will also be provided for the planning, priority setting, management and monitoring of sub-grants, including support to (a) overall thematic planning and programming process; (b) sub-grants management for the award, management and coordination of the competitive and commissioned grants for thematic programs; (c) monitoring and evaluation of sub-projects including evaluation of the outcomes and impacts of sub-grants; and (d) capacity development for sub-grant development and implementation (see section on institutional arrangements below for greater detail). It is projected that roughly US\$5 million in sub-grants will be generated over the MTOP period.

34. **Theme 1: Farmer empowerment and market access.** CCARDESA will support regional efforts to build the capacity of farmer groups and their national or regional associations to participate more effectively in the formulation of the regional R&D agenda and generate knowledge and evidence around enhancing farmer access to markets and key technical/business management services. Youth and gender will also be given special priority and will be provided with special programs to empower them in their participation in agricultural R&D. In particular, CCARDESA will support regional activities⁹ that focus on:

- Generating new evidence and disseminating good practices at the regional level on: (i) farmer and producer organization development; and (ii) models for agribusiness linkages;
- Supporting regional exchange visits to promote good practice (involving farmers together with service providers and advisory services);
- Developing a regional internship program that will provide work experience to youths through which they will be motivated to take up careers in agricultural research and development;
- Disseminating good practices and experiences through workshops, publications and newsletters;
- Supporting capacity building activities to enable regional farmer organizations to actively engage with their members;
- Conducting targeted training to promote good practice for agribusiness linkages and private sector development;
- Supporting innovative pilot activities such as IAR4D and the innovation platform (IP) that is likely to contribute to improved agribusiness linkages.

35. **Theme 2: Research, technology generation, and farmer demand driven advisory services.** The second theme, which constitutes the largest thematic program in CCARDESA, will finance regional sub-grants that generate technologies responding to the identified priority needs of farmers. A key principle will be collaboration among the NARS and partnerships with relevant universities and international agricultural research centers (IARCs) in the region. These partnerships and collaboration will promote the principle of subsidiarity in R&D and the need to strengthen and to build the capacity of weaker research institutions. Financing will be provided

⁹ In line with the principle of subsidiarity, regional activities would focus on activities that involve multiple countries and respond to an identified regional priority.

to strengthen (or establish where needed) networks and partnerships whose main functions will be to carry out the agreed priority research and advisory services activities of common interest between countries, to share knowledge and to disseminate research outputs generated for the benefit of the entire region. In particular CCARDESA will support:

- Capacity-building activities in: (i) developing research and extension networks and partnerships; and (ii) training NARS staff in proposal writing;
- Financing networks and partnerships to carry out research and extension sub-projects;
- Supporting regional piloting and scaling up/out of good practices and technologies;
- Supporting annual regional conferences where scientists and networks present their research findings. Funds would be made available for the publication and distribution of the conference proceedings;
- Supporting the dissemination of research and extension information/findings through conferences, publications, existing journals in the region;
- Supporting regional research on production, processing and use of traditional and underutilized crops of existing farming systems;
- Supporting exchange visits between research scientists and advisory service providers sharing common interests.

36. The particular focus will be demand driven through a call for proposals and continuous updating of the regional agenda of R&D priorities. Several “quick win” priority activity areas have been identified for initial implementation as part of the MTOP development. They are agricultural technologies for maize, sorghum, cassava, groundnut, soybean, forestry, livestock (cattle, sheep and goats), and fisheries systems and include cross cutting issues of youth, gender and climate change adaptation.

37. **Theme 3: Knowledge, information and communication.** Empowering smallholders to improve their production efficiency and to generate higher income through increased market engagement will require better access to appropriate information and the use of local knowledge to shape existing and new technologies to suit local situations. CCARDESA’s third thematic program will support regional efforts to increase and improve knowledge and information-sharing through more effective use of communication methods, media channels and processes. CCARDESA priority setting has identified a range of opportunities to better utilize digital, internet-based and traditional forms of information and communication technologies (ICTs) at the regional level. A detailed situation analysis will be carried out in order to identify more detailed thematic activities. Financing is expected to focus on:

- Identifying ICT information needs and assessing the state of use of ICT in the region to dissemination of information to farmers and other stakeholders;
- Conducting studies or reviews to determine ICT tools and network linkages best suited for different stakeholders including promoting the packaging of information into appropriate knowledge sharing products for farmers and other stakeholders and the use of ICTs and methods for education and learning;
- Supporting regional sub-projects, networks and partnerships among ICT practitioners with linkage to R&D stakeholders with a likely focus on:
 - Regional ICT interventions that benefit the research/extension, private sector and smallholder farmers to make informed decisions and strengthen their negotiation position with service providers and markets;

- Possible new ICT applications to improve smallholder commercialization, and market access.
- Supporting capacity building in the use of ICTs in the agricultural information systems;
- Developing and maintaining regional ICT information systems relevant for different stakeholders (institutions, frontline extension staff and farmers, etc.); and building the capacity of CCARDESA to serve as platform for sharing of information;
- Promoting knowledge sharing and providing regional training focusing on ICT tools and network linkages best suited for specific national and regional needs.

38. **Theme 4: Institutional Development and Capacity Building.** The generation of appropriate technology and its dissemination requires effective R&D institutions and programs. Analysis of the individual NARS institutions within the region indicates the need for strengthening their capacity to undertake institutional reform and change processes; to improve R&D planning and programming, particularly as part of CAADP; and capacity building to enable NARS scientists and extension agents to effectively participate in regional research and extension activities through the competitive grant and other schemes which will be the vehicle for funding sub-projects under the CCARDESA MTOP. There is also scope for developing new institutional models at the regional level—such as regional centers of excellence or leadership—in order to create opportunities to achieve a critical mass of knowledge and skills, reduce duplication and increase spillovers. CCARDESA is already supporting this through the IDA financed Agricultural Productivity Program for Southern Africa (APPSA) in three IDA eligible countries and could explore opportunities for involving additional countries or using a different focus.

39. Under this theme, CCARDESA MDTF financing will support :

- Studies on capacity for research planning, management and funding in NARS and a survey on agricultural education in the region to identify best practices, their impact and relevance on the agriculture sector;
- Linking of weaker and stronger systems around shared problems and exchanges;
- Regional workshops and dialogue to share experiences and promote best practices and FAAP principles such as market-oriented and demand-driven R&D policies promote partnerships mainstreaming AET activities; and promote use of mass media and ICTs, etc.;
- Training of NARS in proposal writing and competitive grants' procedures; and in design and use ICT-based communication strategies and campaigns;
- Sub-projects that contribute to institutional reform; and mainstreaming good practices, including gender and HIV/AIDS;
- Exchange visits of NARS to share experiences; promote networks and partnerships between educational systems, R&D and farmer organizations. Promote sabbatical visits;
- Identification and support mechanisms for regional centers of excellence/leadership (primarily in terms of design, technical assistance and regional facilitation);

- Provision of technical assistance to SADC countries in the implementation of CAADP Pillar IV, especially the development of CAADP investment plans or programs in the R&D sub-sector.

40. **Component 2. CCARDESA Management and Governance (proposed MDTF Financing: US\$11.52 million).** The second component will finance the operational costs of CCARDESA, including the management functions (through a small Secretariat) and the governance functions (through a Board of Directors). Activities to be funded will include: (a) operational costs including CCARDESA staff salaries and CCARDESA Headquarters costs; (b) program management costs including cost of steering committees, task force meetings, coordination meetings, stakeholders meetings, consultant fees, and operational costs and activities of the technical staff of CCARDESA Secretariat and other variable costs such as indirect costs, travel expenses and other cost related to the implementation of programs; (c) capacity building in administration, financial management/accounting, procurement, and safeguards; (d) establishment and maintenance of an M&E system; and (e) governance costs for CCARDESA including the General Assembly, and the activities of the CCARDESA Board and its associated committees.

41. **Management, Administration and Supervision of the MDTF (proposed MDTF Financing: US\$1.09 million).** This MDTF will also finance the costs incurred by the World Bank in its management, administration, and supervision of the trust fund. This would include staff costs including salaries and benefits, other variable costs such as travel expenses, indirect costs, consultant fees and meeting-related expenses and other cost items as agreed between the World Bank and contributing MDTF donors.

B. Project Financing

42. **MTOP Budget.** The five year MTOP budget totals US\$42.13 million and will be financed by CCARDESA Member State contributions, international and sub-regional partner organizations, and donors. The portion of the MTOP budget to be financed by the proposed MDTF is approximately 60 percent during an initial five-year period. The MDTF will cover much of CCARDESA's operational costs during its establishment phase, which is expected to allow CCARDESA to leverage resources from other donors or external partners whose funding is generally more restricted to direct financing for thematic programs. The mid-term review (MTR) will be used, however, to re-assess the size and dimension of funding for CCARDESA management and governance costs, if full co-financing of CCARDESA thematic programs is not forthcoming.

43. **Projected MDTF Financing.** A core group of development partners including CIDA, DfID, EC, and USAID are funding CAADP Pillar IV continental institutions and sub-regional institutions in Eastern and Western/Central Africa. Discussions with these donors on funding for the CCARDESA MDTF have taken place and are expected to continue. The first donor to make a firm commitment to the CCARDESA MDTF is the EC with a commitment amount of 5 million euro (approximately US\$6.7 million). The EC has also indicated an increase in funding may be possible in the next few years. Despite this, the MDTF faces a substantial financing gap. The experience of other similar operations (ASARECA and CORAF MDTFs) has shown that funding gaps can be filled over time and that donor funding is often staggered due to different donor

approval processes and timelines. The MTR will be used to re-assess funding levels for the CCARDESA MDTF, and restructuring within the existing financing envelope will take place if required.

44. While most funds will be passed on to CCARDESA in the form a recipient-executed grant, a portion of the funds will be retained to finance the World Bank's costs related to supervision, trust fund administration and program management. The MDTF will operate under a customized cost recovery arrangement, providing for full cost recovery of trust fund administration and program management costs.

45. **Retroactive financing.** Retroactive financing of up to US\$600,000 may be made for eligible expenditures made prior to the date of Grant signing but on or after January 1, 2014.

46. **Funding to R&D institutions in countries not eligible to receive financing out of World Bank resources.** Recipients of sub-grants under the proposed MDTF shall be drawn from institutions in CCARDESA member countries and will be institutions who meet the criteria for eligibility established under the CCARDESA Sub-Grant Manual subject to consistency with the World Bank's policies and procedures and provisions of MDTF Administration Agreements. This may include institutions in countries that are not currently eligible to receive financing out of resources of the World Bank such as Zimbabwe. Any sub-grants to R&D institutions in Zimbabwe will require prior review by the World Bank. Fiduciary arrangements will follow standard Bank practices for Trust Fund financed operations in Zimbabwe. These include the Board-approved Zimbabwe Analytical Multi-Donor Trust Fund (A-MDTF), the Multi-Donor Trust Fund for Health Results Innovation (MDTF-HRI), the Global Food Crisis Response Program (GFRP) in response to the 2008 food crisis, and others.

Table 2: Project Cost and Financing (US\$ million)

Project Components	MTOP Budget	MDTF Financing	% of Total MDTF Financing
Component 1: CCARDESA Thematic Programs	25.02	13.43	54
<i>of which sub- grants</i>	<i>12.0</i>	<i>5.0</i>	
Component 2: CCARDESA Management and Governance	12.79	11.52	46
Price and physical contingencies	4.32	-	
CCARDESA Grant Total	42.13	24.95	100
Management, administration and supervision of the MDTF (Bank executed costs)	N/A	1.09	
Total Project Costs	42.13	26.04	

C. Lessons Learned and Reflected in the Project Design

47. **Competitive research grant systems.** The competitive agricultural research grant system is an efficient vehicle for financing new research areas, demand-driven adaptive research reflecting user perspectives, and research and development that requires public-private partnerships. The design of the proposed activities to be funded under the MDTF reflects these

lessons and recommendations. Lessons learned in improving the effectiveness of research systems include: (i) awarding research grants based on explicit economic, eco-regional, social, and technical criteria; (ii) external review of research programs and sub-projects at least once during the project life; (iii) active involvement of strong research institutions and universities; (iv) effective linkages with international, regional, and national research centers of excellence or leadership; and (v) training of participants at all levels of the production chain.

48. **Regional program implementation.** Lessons have also been incorporated from other similar MDTFs and regional World Bank-financed operations in western and eastern Africa such as the West Africa Agricultural Productivity Program (WAAPP) and the East Africa Agricultural Productivity Program (EAAPP). These lessons include: (i) the need for stakeholder consultation during design; (ii) early development of implementation mechanisms and identification of the possible problems in the interface between national and regional arrangements; (iii) comprehensive training plans and objectives to guide long-term training initiatives; (iv) strong support from regional institutions; (v) appropriate allocation of resources for preparation and supervision due to the higher costs associated with regional programs; (vi) the need to include dissemination of technology; and (vii) knowledge management to identify emerging key results and outcomes to feed strategic thinking.

49. **Lessons learned from other Sub-regional Research Organizations.** A number of lessons learned from ASARECA and CORAF have also informed CCARDESA's development of its MTOP and its organizational and governance structure. These include: (i) adoption of more performance-driven governance and management structures and systems that focus on accountability, are responsive to a diverse set of stakeholders, and comprise a lean and effective Technical Secretariat to manage day-to-day activities; (ii) support to generation and uptake of demand-driven agricultural technologies and innovations with a focus on improving technology dissemination; (iii) greater focus on developing policy options for enhancing the performance of the agricultural sector; (iv) capacity building networks and support for implementing agricultural research in the AR4D approach; and (v) scaling up availability of information on agricultural innovation. A key lesson learned has been that the role of an SRO is not only to fund sub-programs but to learn from the results and contribute to building sound regional strategies.

50. **Productive partnerships across the value chain and inclusion of cross-cutting areas.** ASARECA's second Operational Plan (OP2) 2014-18 also stresses a number of key lessons learned, including partnerships between different stakeholders within the value chain as key to successful project implementation. In particular, product diversification and value chain addition are more likely to benefit project stakeholders if business incubation is incorporated at different levels of the process. The use of Innovation Platforms and communities of practice have also been found to be useful mechanisms to promote the sharing and exchange of information, experiences and lessons learned among stakeholders. Lessons learned from ASARECA's first OP also demonstrate targeted funding mechanisms such as enterprise and innovation funds can be used to further enhance knowledge sharing; and cross-cutting issues such as environmental and social safeguards, gender mainstreaming, and capacity building need to be explicitly built into projects and activities to ensure significant impact.

51. **Support to agricultural technology dissemination systems.** A large body of global experience indicates that development and dissemination of agricultural technology is much more likely to succeed when agricultural research, extension, and training activities are well integrated. Measures that can help ensure strong linkages between research, extension, and

training include: (i) establishment of a two-way feedback system between extension and research to ensure that the technologies made available for transfer to beneficiaries are appropriate; (ii) use of flexible, decentralized, and demand-driven technology delivery systems that involve local professionals and beneficiaries in extension activities; and (iii) creation of responsive training programs that can provide extension staff with the skills necessary to do their jobs effectively, while at the same time sensitizing them to emerging technologies.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

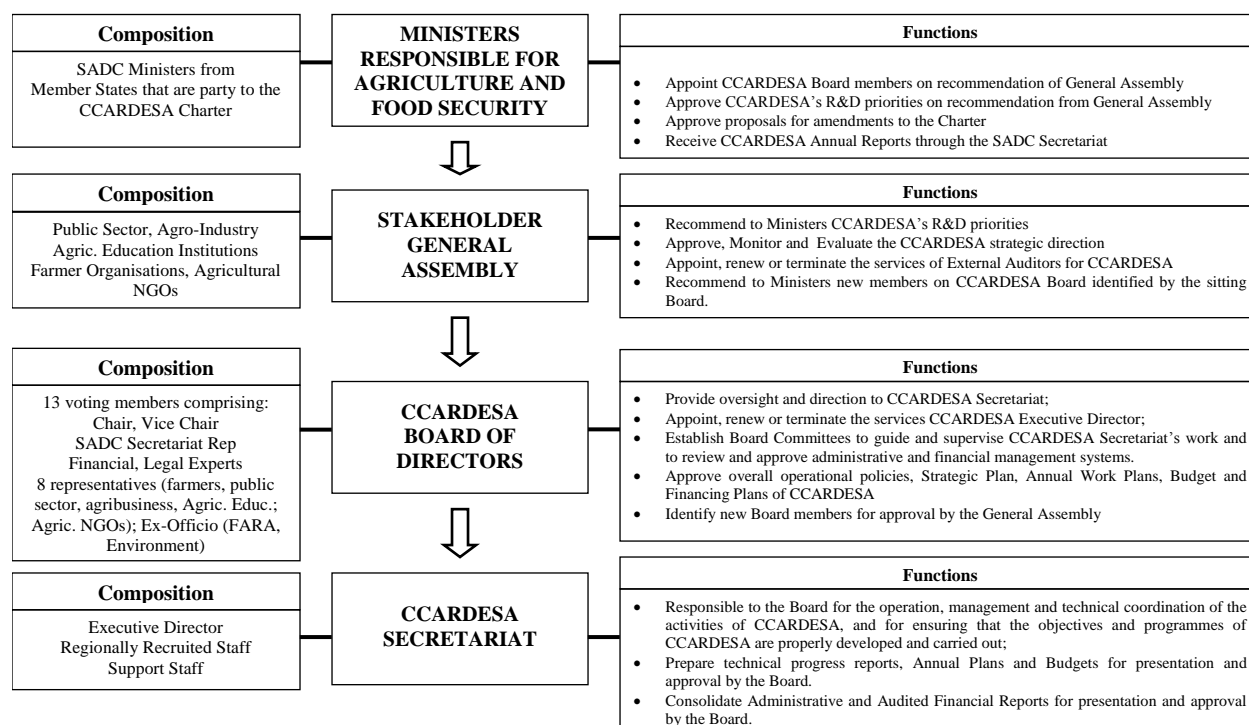
52. **CCARDESA MTOP.** The CCARDESA MTOP will form the basis for MDTF implementation. As a regional institution, CCARDESA's mission and MTOP have been developed with its partners and stakeholders (including AU/NEPAD, SADC, FARA, other SROs, CGIAR centers, farmers' groups and civil society organizations, private sector). The MTOP is fully consistent and harmonized with the priorities and principles of CAADP and FAAP. Implementation of programs follows the subsidiarity principle to facilitate ownership and responsibility of actors on a comparative advantage basis.

53. **CCARDESA Institutional structures.** CCARDESA was established by a charter endorsed at SADC level and signed by individual SADC member countries. CCARDESA is governed by a General Assembly of regional R&D stakeholders from SADC Member States and a Board of Directors drawn from a cross section of R&D stakeholders. Members of the General Assembly are stakeholders drawn from the SADC countries who meet every two years. In addition to the General Assembly, as a SADC subsidiary organization, CCARDESA also provides reports on its activities to the SADC Council and to the SADC Ministers responsible for Agriculture and Food Security, who may also perform functions related to approving specific issues where required. The Board of Directors of CCARDESA, composed of 13 members, provides the primary oversight and governance mechanism to guide CCARDESA on its general direction and programs. The first CCARDESA Board was appointed by the SADC Ministers of Agriculture and thereafter has become a self-generating Board.¹⁰

54. The day-to-day operations of CCARDESA are run by a Secretariat based in Gaborone, Botswana. The Secretariat is responsible for managing and implementing CCARDESA's programs, as approved by the Board, and will perform all tasks relating to the coordination of agricultural R&D in the SADC region. The CCARDESA governance manual summarizes the institutional arrangements, composition and functions of each structure of the governance of CCARDESA.

¹⁰ Board members are term limited and are replaced based on a nomination process by Member States and confirmed by the outgoing Board.

Figure 1: CCARDESA Governance Framework



55. The Secretariat is led by an Executive Director and currently, a staff of 12 is in place comprising the Executive Director, Program and Grants Manager, Research and Advisory Thematic Coordinator, M&E Coordinator, APPSA Coordinator, Finance Officer, Finance Assistant, HR and Administration Manager, Information Officer, and 3 administrative assistants. Interim Procurement support is currently being provided through a FARA secondee. The Secretariat's staffing complement is expected to increase over time with the recruitment of a permanent Procurement Officer, a number of technical specialists: Farmer Empowerment Thematic Coordinator, Knowledge, Information and Communication Thematic Coordinator, Capacity Building Thematic Coordinator, Finance Manager (should the level of responsibility increase), Internal Auditor, and Legal Officer. Funding for staff are expected to be split between the MDTF and other project or partner funds. The anticipated number of regionally recruited staff at full staffing levels to be paid for under the MDTF include the Executive Director, Program & Grants manager, the four thematic coordinators, M&E specialist, Internal Audit, Finance Manager, Finance officer, HR & Administration Manager, and Procurement officer. Additional locally recruited staff paid under the MDTF will include a complement of administrative and finance assistants and a legal officer. Downward adjustments to staff size will be made based on funding committed to the MDTF if required.

56. The CCARDESA Secretariat will have overall implementation responsibilities for the MDTF. Responsibilities will also include safeguards monitoring, and monitoring for both financial management (FM) and procurement aspects. (See discussion of FM and Procurement below). Implementation of activities under the MTOP will be guided by an AWP&B process which will be approved by CCARDESA's Board. MDTF financing will be based on a

comprehensive AWP&B which will describe CCARDESA's activities for the year, distinguishing among different funding streams.

57. **Competitive and commissioned sub-grant system.** Implementation of CCARDESA's thematic programs will take place primarily through commissioned or competitive sub-grants. Management of this process will be carried out transparently and based on an agreed upon Sub-Grant Manual, which provides detailed procedures for management of grants. A final draft of the Sub-Grant Manual has been approved by the CCARDESA Board. A final version of the manual satisfactory to the World Bank will be a condition of disbursement against sub-grants.

58. Competitive sub-grant projects will be selected following calls for research proposals, to be launched by the CCARDESA Secretariat. These calls will be published on the CCARDESA website and widely disseminated by appropriate means. The main contribution of the competitive grant system is to follow a stringent and effective selection process, thereby assigning scarce resources to the most technically sound and highest priority proposals, and to provide incentives to implementing agencies to make efficient use of such resources and achieve the most outputs as possible.

59. Calls for project proposals will be based on the identification of needs and research constraints within CCARDESA thematic programs. Each thematic program will undertake a process of in-depth priority setting involving a participatory study that will consist of consultations with key partners and stakeholders—both the private sector (industries, enterprises, processors, Producer Organizations, NGOs) and the public sector (extension services, research organisations)—and analysis of research for development opportunities and potential partnership arrangements.

60. *Commissioned grants.* Commissioned grants will be used in situations where competitive grants are not considered to be the best funding mechanism or to support specific short term studies/work across the range of themes. Examples include exploratory work and identification of potential initiatives or programs or national and regional workshops and training events. Applications for grants will be restricted to a short list of selected institutions with known specialist skills or expertise. The criteria for short listing will depend on the specialization required, such as knowledge of the subject matter or laboratory or other facilities/technology that the short-listed institution can provide. Competition among the short-listed institutions will however follow the same process as for the competitive grants. Where appropriate, the shortlisted institutions will be required to work with other institutions in developing the Concept Notes and the Full Proposals and in implementing the sub-grant. This will contribute to building the capacity of weaker institutions and to transferring of skills.

61. In the exceptional cases where there is extremely limited capacity to work on a particular priority problem, grant-financed sub-grants could also be directly commissioned on a "sole source" basis to a single provider or consortium with a well-proven track record. Sole-source providers will be transparently selected and such sub-grants will still be subject to the normal appraisal and grant approval procedures.

62. *Project cycle for competitive and commissioned grants.* The project cycle includes three stages: formulation, evaluation and implementation. Responsibility for project formulation and quality of design will reside with the respective implementing agencies of the project proposals. Each part of the project cycle—the call for proposals, the selection of projects for funding, and

their implementation—would be done in a public and open manner based on the guidelines and criteria detailed in the approved Sub-Grant Manual, in line with international standards.

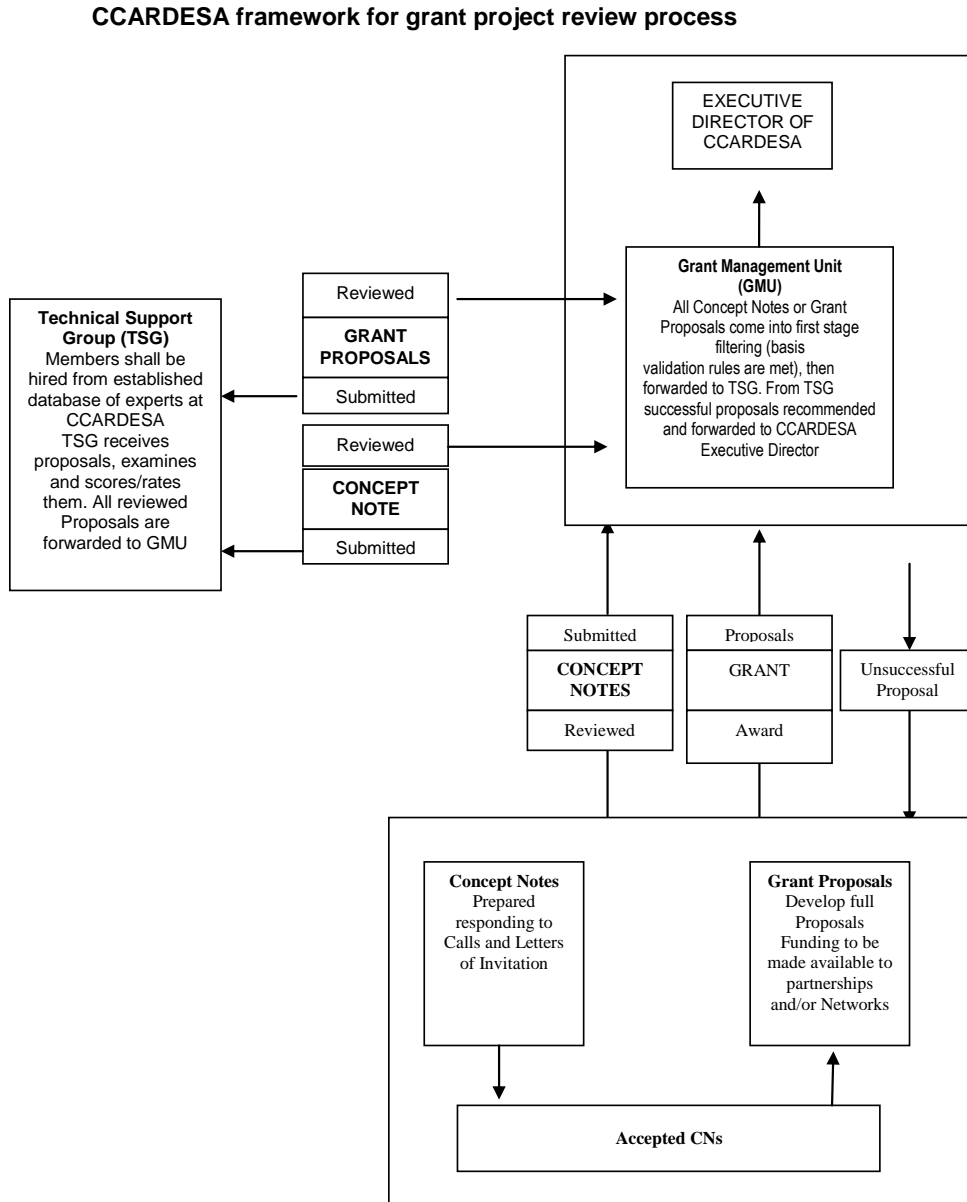
63. Project proposals that involve at least two countries and which could be executed by institutions in these countries will then be further developed by the respective partners and submitted to CCARDESA. Eligibility for sub-grants will be open to institutions operating within CCARDESA member states - public, private and civil society institutions active in R&D¹¹. International partnerships are welcome as part of a consortium but sub-grants would be led by a NARS institution.

64. CCARDESA will organize a peer review process for quality control that will assess proposals based on the following criteria among others: (i) coherence with the CCARDESA MTOP; (ii) evidence of inter-institutional partnership; (iii) identification of the Project Coordinator and consortium; (iv) compliance with minimum technical and scientific quality standards; (v) potential for dissemination and replication across the sub-region; (vi) a plan for the dissemination and use of results; (vii) social and environmental standards that are consistent with the Environmental and Social Management Framework (ESMF) and Pest Management Plan (PMP); and (viii) compliance with minimum financial and budgeting standards. Sub-grant agreements will conform to World Bank procedures for fiduciary, environmental and social safeguards as well as the anti-corruption guidelines.

65. The first five sub-grant agreements approved by CCARDESA will be reviewed and receive a no-objection from the World Bank prior to implementation. Any sub-grant awarded to an institution in Zimbabwe will also require a no objection from the Bank and specific funds flow arrangements to institutions in Zimbabwe will be adopted in line with World Bank practices currently in place. These measures will be described in detail in the Sub-Grant Manual.

¹¹ See <http://www.asti.cgiar.org/countries> for a indicative list of agricultural R&D institutions active in each country covered by the review.

Figure 2: CCARDESA Sub-Grant Review Process



66. In general the governance and management structure for sub-grants will include:

- The CCARDESA Executive Director will be charged with governance, policy guidance and strategic oversight of the grant system;
- A Technical Support Group (TSG) will be established to review, evaluate and grade both technically and financially the project proposals submitted in response to Calls and invitations for expression of interest (IEIs). The TSG will be a database of high profile experts of the respective CCARDESA Thematic Areas;
- A Grant Management Unit (GMU) within CCARDESA will be responsible for (a) grant system management, including overall planning, budgeting and financial

management, (b) organizing and processing the Calls and IEs, (c) hiring of consultants to undertake approved studies and workshops, and (d) supervising the implementation of all approved sub-grants, studies and workshops and overseeing their orderly completion.

67. **Linkages to SADC policy organs.** CCARDESA is recognized officially as a SADC subsidiary organization, which provides an opportunity for CCARDESA to table issues for consideration by SADC decision making bodies at the Ministerial and Heads of State level. While CCARDESA will be active in providing input to regional policy dialogue around R&D issues, the SADC Secretariat retains the primary institutional mandate for overall policy dialogue within the region. CCARDESA will work closely with SADC to analyze relevant policies and legislation relevant to the R&D agenda.

68. **Cross-regional linkages and partnerships.** Linkages between CCARDESA and ASARECA, CORAF and FARA have already been well established and will continue under implementation of the MTOP. All three sub-regional entities (ASARECA, CCARDESA and CORAF) sit on the FARA Board and are active in exchanging experiences and lessons learned. Collaboration on cross-continental R&D programs is also taking place and all four institutions are participating in the definition of a new Agricultural Science Agenda for Africa and strengthening collective partnerships with the CGIAR.

B. Results Monitoring and Evaluation

69. CCARDESA's MTOP identifies a plan for developing and implementing a comprehensive M&E system. Initial work has already taken place as part of the MTOP development and through the identification of a detailed results framework/log frame. Further work will take place in the first year of implementation to fully operationalize the M&E system. Lessons learned from ASARECA have demonstrated the need to get baseline work, results framework, indicators, and associated ICT support done early in implementation and that this process often takes time. ASARECA's experience in developing an ICT system for managing and storing M&E data from sub-program teams will be useful experience for CCARDESA.

70. The CCARDESA M&E system will encompass the M&E requirements of CCARDESA as a regional institution focused on regional R&D coordination as well as on the individual M&E requirements for each sub-projects financed by CCARDESA. CCARDESA's M&E system will also generate information and data to meet a range of information needs and reporting requirements in relation to the Executive Board, the General Assembly, donors, and stakeholder organizations. In the case of the latter in particular, the CCARDESA M&E system will be linked to other M&E systems that either have been or are being developed to address elements of CAADP Pillar IV.

71. In line with the above, the M&E system will define the data collection process requirements, including reporting requirements (format, frequency and distribution), in order to collect relevant information and data related to the performance of the five Thematic Areas and to provide feedback to improve performance and learning in terms of program/project relevance, efficiency and effectiveness; identifying weaknesses and providing solutions on the way forward; and providing lessons learned for replication of best practices. The M&E system will

identify a learning process to be managed at the national level and will serve as an important tool to provide information that will guide national programs.

72. Indicators used in the M&E system include both outcomes and results indicators, as well as output and input level indicators. Data will be disaggregated in terms of gender wherever possible. Baseline studies will also be required for all sub-projects so as to assess the situation prevailing prior to the implementation of a sub-grant, and form the basis for M&E and impact assessment. Depending on the nature of the sub-project, baseline studies will include all quantitative and qualitative variables that can be tracked and monitored as the sub-project progresses and that can be used to assess the impact of, and evaluate the sub-grant.

73. The CCARDESA Secretariat will be responsible for monitoring CCARDESA activities through AWP, field visits, systematic reporting during implementation on a quarterly and annual basis (including M&E related reports/updates), and periodic stakeholders meetings. The M&E Unit at CCARDESA will be responsible for compiling the overall results and monitoring of the MTOP's intermediate outcomes. At specific points in time, purposely designed studies and reviews will be carried out to assess outcomes (both expected and unexpected), effectiveness, efficiency, long-term impact, relevance and sustainability of the interventions, and also to draw lessons for future interventions. An in depth MTR and MTOP review will be undertaken in the middle of year 3 of the MDTF and a final evaluation at the end of the five year MTOP period.

C. Sustainability

74. As an SRO supporting the generation of public goods, CCARDESA is unlikely to achieve financial self-sufficiency and will require financial contributions from its member NARS and donors over the medium to long term. As a result, CCARDESA's long term sustainability will depend on its ability to demonstrate and deliver benefits to its partners and member countries—in terms of relevance and quality of technology outputs generated through sub-projects, capacity building services, or shared information and knowledge. CCARDESA's adoption of an IAR4D paradigm and the implementation of a thematic structure are expected to increase the impact of its activities by making them more responsive and effective in meeting stakeholder needs. A strong M&E system will help CCARDESA to demonstrate the results it generates and estimate the return on investment for the funding it controls. This will be a key ingredient into seeking continuity in funding.

75. As part of an effort to promote sustainability, the SADC Council of Ministers required CCARDESA to develop a sustainability plan. Stakeholders also called for the establishment of a reserve fund made up of Member State contributions. SADC Member States subsequently agreed in the CCARDESA Charter to create a US\$1.5 million reserve fund financed out of Member State contributions. This fund has been launched, and initial contributions have been provided by a first set of countries. CCARDESA is also pursuing other elements in its sustainability plan including generating some revenue through management of regional programs. For example, CCARDESA is currently providing facilitating services for the implementation of APPSA, which will channel funds to CCARDESA through country IDA allocations.

V. KEY RISKS AND MITIGATION MEASURES

A. Risk Ratings Summary Table

Risk Category	Rating
Stakeholder Risk	M
Implementing Agency Risk	
- Capacity	S
- Governance	M
Project Risk	
- Design	M
- Social and Environmental	M
- Program and Donor	M
- Delivery Monitoring and Sustainability	M
Overall Implementation Risk	M

B. Overall Risk Rating Explanation

76. The following key risks have been identified for implementation of the CCARDESA MTOP:

- Regional policy and institutional environment may change in ways that affect CCARDESA's ability to operate as a sub-regional institution;
- Delays may be experienced in developing and implementing a strong pipeline of diverse stakeholder-driven sub-grants which respond to SADC R&D strategic priorities;
- Rigorous standards and review mechanisms of grant-funded projects may not be applied adequately and consistently;
- Use of funds may be inefficient or inappropriate, and specific internal control mechanisms may be deficient, and not identified and rectified in a timely and sound manner;
- Program may be highly dependent on continued support for CCARDESA from outside the MDTF and individual national programs that support/underpin national systems.

77. Mitigation measures have been included in the MDTF to monitor effective governance arrangements, ensure appropriate design and effective implementation of activities—in particular sub-grants—and develop a robust M&E system. Strong consultative processes will be built into identification and implementation of CCARDESA's thematic activities and sub-grants. Consultation and accountability mechanisms built into priority setting and sub-grant design will be reinforced during MTOP implementation. In addition, high level (e.g., Permanent Secretary) participation in CCARDESA's regional steering committee can support buy-in and raise awareness of the regional approach. To mitigate the risk of delays in implementing a pipeline of activities, CCARDESA will engage in a priority setting process based on an informed commodity focus of the MTOP and definition of quick wins in which regular consultation on benefits and impact will be important. Mitigation measures to monitor fiduciary capacity risks in

CCARDESA will be addressed through increased fiduciary staff numbers and provision of training. Fiduciary implementation support mission to be carried out biannually. To address the risk of sustainability, the MTOP includes a range of scenarios and programming which will be developed slowly to allow for adjustment based on overall financing. The MDTF's support to CCARDESA's core operations will be monitored throughout implementation. A summary of the risks and risk management measures is described in Annex 4 - ORAF.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

78. A specific ex-ante economic analysis of MDTF financing for CCARDESA was not undertaken, given previous analytical work that demonstrates the generally high rates of return for investments in agricultural research and the detailed analysis undertaken by IFPRI/RESAKSS in the sub-region in 2011. The work included an ex ante economic analysis of the potential impact of investments in agricultural research within southern Africa. This latter analysis was commissioned by SADC and served as the basis for determining their priority commodities and focus under the CCARDESA MTOP.

79. The IFPRI/RESAKSS study generated a prioritized list of the most attractive opportunities to generate technology spillovers in the SADC region. Table 3 shows the priority ranking based on the study—with maize, cassava, rice, cattle, fruits and vegetables in the top five priorities for technology generation and dissemination.

Table 3: R&D priorities based on growth and technology spillover potential

Commodity	Potential contribution to agricultural growth (% share in higher agricultural growth scenario)		Regional spillover potential (share of total regional spillover gains)		Final ranking (weighted ranking based on contribution to growth and spillover potential)	
	all SADC countries	low income countries	all SADC countries	low income countries	all SADC countries	low income countries
Maize	25.6	31.4	39.1	39.1	1	1
Cassava	14.5	13.7	8.4	8.6	2	3
Rice	8.9	13.3	13.6	13.9	3	2
Cattle	5	3.5	9.4	9.5	4	4
Fruit and Veg.	10.2	10	0.9	0.9	5	5
Beans	3.2	2.2	5.9	6.0	6	7
Fisheries	7.3	7.3	0.9	0.9	7	6
Sorghum	1.6	0.9	6.1	6.0	8	8
Wheat	4.3	0.9	2.3	2.3	9	13
Potato	3.5	3.7	2.5	2.6	10	9

Source: IFPRI, 2011

80. Although CCARDESA supported activities will be demand driven, initial “quick-wins” have been identified based on the IFPRI/RESAKSS study and further analysis by CCARDESA. These give a picture of anticipated intervention areas and associated economic benefits.

Table 4: Potential intervention areas identified in MTOP “quick wins” exercise

Theme 1: Farmer empowerment and market access	
Cereals, especially Sorghum	Develop reliable seed supply and marketing systems in major cereals (sorghum) growing countries (Farmer Empowerment)
Soybean	Improve market access in the value chain (Agribusiness Linkages)
Poultry, Eggs	Promote commercialization of indigenous local chicken (Agribusiness Linkages)
Forestry	Analyze policy incentives for investments in small holder plantation development (Farmer Empowerment and Agribusiness Linkage)
	Analyze policy incentives for investments in small-scale value added processing (Agribusiness Linkages)
Theme 2: Research, technology generation, and farmer demand driven advisory services	
Maize	Adapt and validate available soil fertility interventions in similar environments in the region
	Enhance agro-ecosystem resilience through minimum tillage, use of farm available organic matter and improved water harvesting and soil management in drier environments
Sorghum	Develop, adapt and promote appropriate gender-sensitive smallholder equipment for processing and value addition at household level
Cassava	Identify and develop alternative uses of cassava in livestock feed
Groundnut	Develop improved farm level post-harvest handling and storage infrastructure to reduce aflatoxin infestation and other losses
Soybean	Up-scale the rhizobium inoculation technology production and use in major soybean growing areas in the region
Forestry	Research on the properties and potential applications of reconstituted wood products
	Analyze policy incentives for investments in small holder plantation development
Livestock	Conduct studies to support sustainable water supply & utilization of rangeland resources
	Undertake control and eradication of Transboundary Animal Disease
	Improve access to adapted quality heifers by farmers
	Stabilize supply of improved day-old chicks through village/district level low cost hatcheries & cock-circles
Fishery	Enhance productivity of aquaculture through fish processing, food safety, value addition
	Carry out socioeconomic research on marine fisheries to underpin sustainable management and harvesting
Theme 3:	
Maize	Develop cost-effective and harmonized regional surveillance systems (forecasting, monitoring and management) of migratory pests (armyworm, locusts, etc.)
Rice	Map out areas of high disease prevalence in the region to develop combined management and control efforts
Wheat	Revise/develop temperature and planting dates suitability maps for major wheat producing countries in the region in response to changes in climate
	Enhance regionally integrated surveillance and management systems for Quelled birds
Irish & sweet potato	Develop / strengthen accessible information systems for linking producers to fresh produce markets for both sweet potato and potato
Cotton	Develop input/ output market information systems that are accessible to smallholders
Fruit & Vegetables	Update an inventory of available indigenous fruit and vegetables in the region to guide conservation actions
Forestry	Analyze policy incentives for investments in small holder plantation development
	Analyze policy incentives for investments in small-scale value added processing
Livestock	Improve marketing intelligence & information system
	Synthesize and disseminate existing knowledge on indigenous breeds to promote their utilization
Fishery	Carry out socioeconomic research on marine fisheries to underpin sustainable management and harvesting

81. In general many ex-post economic analyses have shown high rates of return to investments in agricultural research and extension. The most comprehensive review of literature was conducted by Alston et al. (1999).¹² The study reviewed 294 studies (including extension) reporting 1,858 estimates of returns on investments in agricultural research and development. After eliminating extremes, the report found that the remaining 1,760 estimates indicated an

¹² Alston et al., 2000, “A Meta-Analysis of Rates of Return to Agricultural R&D” Research Report 113, IFPRI, Washington, DC.

average return of 73 percent, with lower returns reported in Africa (average return of 50 percent). Spillover of benefits of research across national borders can be important and can raise rates of return even higher. Abdulai *et al* (2005)¹³ showed that investments yielding regional benefits in African agriculture delivered as much as three to four times the gain over and above the direct benefits in the country of origin. Similar rates could likely apply to the MDTF funded efforts in agricultural research and adoption.

82. ***Public sector provision and financing as an appropriate vehicle.*** Important aspects of agricultural research and agricultural extension are public goods in the sense that they have large returns that cannot be captured by the private sector. This is particularly true for research related to staple and non-commercial crops that are particularly important for the welfare of poor households (farming and otherwise). For this reason, public sector financing of agricultural research and agricultural extension at the national level has long been understood as well-justified in order to overcome underinvestment in these activities that would obtain in the absence of public sector funding. Collaborative public sector financing of regional R&D efforts is also needed at the regional and continental level to address the failure of national or sub-national systems to create R&D spillovers. Since many of the actual benefits of agricultural research spill across borders, individual countries planning on their own substantially underinvest in programs that are relevant beyond their own borders. Further, without collaboration, there is significant overlap (and re-inventing the wheel) between national programs and failure to take advantage of possible economies of scale in R&D efforts where it would be beneficial. Without collaborative public funding at the regional and continental levels, the impact of research programs will be well below what it could otherwise be. The creation of larger shared technology spaces (i.e., spaces larger than the geographic boundaries of individual countries) has proven to be an effective solution for increasing efficiency in the face of common problems, reducing duplication and addressing issues of the fragmentation associated with small country systems.

83. CCARDESA is a not-for-profit international organization which coordinates the efforts of national R&D programs and makes additional resources available to them to collaborate in their priority setting as well as in the implementation of their programs. These programs encourage and nurture private sector R&D initiatives, and sometimes employ private sector actors in the implementation of programs that have public sector financing. It should be noted that at present private sector involvement in agricultural research remains relatively limited in Africa and often targets a narrow range of commercial crops and focuses almost exclusively on new varietal development. Staple food crops – which are key to addressing food security and nutrition issues – are often not part of the private R&D research agenda, which focuses on maximizing sale of commercial seed. Private sector research does not address the wider technology space which includes of agronomic practices, socio-economic studies and the issues of gender and climate change adaptation.

84. ***World Bank value added.*** The World Bank has been instrumental in identifying the need for investment in regional and continental approaches to R&D in African agriculture and in the design of programs to address this need as well as in the mobilization of resources to launch and

¹³ Awadu Abdulai, Xinshen Diao, and Michael Johnson, 2005, “Achieving Regional Growth Dynamics in African Agriculture,” Development Strategy and Governance Decision Discussion Paper No. 17, International Food Policy Research Institute, Washington, DC, p. v.

fund these programs. The Bank has played a key convening role with a core group of development partners (the World Bank, CIDA, DfID, EC, and the USAID) as well as with African institutions at every level (including the key CAADP lead organizations). The Bank has also provided critical support toward building the capacity of CCARDESA and other SROs to be able to develop and implement their programs effectively. These are roles that no other actor or institution would have been able to play, and this continues to be the case.

B. Technical

85. ***Relevance of CCARDESA's MTOP and thematic programs.*** The creation of CCARDESA thematic programs, which encompass the range of major commodities and key policy and capacity gaps, is in line with priorities identified in the analysis and demonstrates the relevance of CCARDESA's new regional research agenda. Continued stakeholder validation of the region's top priority areas, based on quantitative analysis, will ensure the technical soundness and relevance of the projects. Proposals for funding in these priority areas will also follow clear guidelines to ensure relevance of projects in addressing sub-regional agricultural growth challenges.

86. ***Implementation capacity.*** CCARDESA is a newly established institution in the region. While this may pose implementation challenges, CCARDESA has attained a relatively high level of regional ownership and has demonstrated progress in creating a solid institutional structure maturity that should allow it to grow and adjust to the new programmatic priorities. Since early 2013, CCARDESA has demonstrated its value by playing an active role in supporting APPSA implementation and by helping to facilitate the launching of the first cycle of regional R&D projects involving Malawi, Mozambique and Zambia.

87. ***Support to innovation.*** CCARDESA will build on ongoing initiatives within the NARES to address institutional bottlenecks to innovation. Many national systems in the region are in the process of implementing lessons learned with regard to improving the effectiveness of technology generation and dissemination systems, as well as training programs. This includes: (i) establishing close linkages and feedback mechanisms between extension and research to ensure that appropriate technologies are available for transfer to beneficiaries; (ii) putting in place flexible, decentralized, and demand-driven delivery systems; (iii) building pluralistic research systems that facilitate increased involvement of private sector and university systems in addition to traditional public research bodies; and (iv) introducing competitive, rigorously reviewed research programs linked to international, regional and national knowledge sources. CCARDESA is expected to strengthen these efforts and to provide financing to extend them within the regional landscape of R&D actors.

88. ***Underlying policy conditions.*** CCARDESA will be actively engaged in policy dialogue around R&D issues, which will include intellectual property rights' systems, operationalization of the SADC harmonized seed regulatory system (which will allow agricultural technologies to move more freely within the region), implementation of biosafety regulations, and other similar topics. CCARDESA will also participate in the larger SADC Regional Agricultural Policy (RAP) process which was initiated in 2008 and endorsed by SADC Ministers in 2012. The RAP is an extensive regional policy, planning, and programming initiative which will provide a framework for formulating a comprehensive set of regional programs to advance sustainable agricultural development and food security in the region. The RAP is framed around three inter-

related and mutually re-enforcing core pillars: Pillar I, Production, Productivity and Competitiveness; Pillar II, Trade and Markets; and Pillar III, Financing and Investments that are complemented by three cross-cutting themes - social, institutional and environmental. Specific policies relating to the following areas have been identified: (i) land use management; (ii) water resources management; (iii) energy for agriculture; (iv) plant and animal genetic material (including biotechnology in crop and livestock development); (v) soil-fertility enhancement; (vi) management of trans-boundary threats including pests and diseases; (vii) forestry; (viii) fisheries; and (ix) farm support systems and services. R&D issues cut across most of the sub-sectors or policy priorities, and CCARDESA is expected to engage through provision of analytical work on policy options and the direct financing of relevant technology generation and dissemination that underpin policy efforts.

89. ***Uptake pathways needed to reach farm level.*** A number of R&D priorities are management practices that are best linked with extension services in order to promote widespread uptake. CCARDESA sub-grants will include a focus on partnerships with extension and advisory systems and should explore a variety of uptake pathways—including information communication technologies such as radio programs. More work on the extent of engagement with national extensions systems is expected over the course of implementation.

C. Financial Management

90. An assessment of CCARDESA's FM capacity was undertaken during project preparation of APPSA under which CCARDESA would receive funds from a regional IDA grant and IDA Credit resources. CCARDESA's FM capacity was found to be acceptable as required under OP/BP10.00. The FM risk rating is Moderate.

91. The newly acquired accounting system (Oracle) is still being stabilized and customized to meet all the stakeholders' reporting requirements. However the system is judged sufficiently reliable to record, report and account on uses of the financing proceeds. The accounting and reporting functions will be handled by the Finance Officer, who has experience in donor reporting and requirements. The project will report on the uses of funds on a quarterly basis by submitting Interim Financial Reports (IFRs). Audited annual financial statements will be submitted to the World Bank six months after the end of the fiscal year. Disbursements to the project will be based on Statements of Expenditure (SOEs). The overall FM residual risk rating is **Moderate**.

92. For the small sub-grants, CCARDESA will establish a simple reporting mechanism and put in place a simple monitoring and control system for each grant. These mechanisms will be detailed in the Sub-Grant Manual. The grants will be subject to external audit processes.

93. ***Arrangements for sub-grants to institutions in Zimbabwe.*** Fiduciary supervision and funds flow arrangements for sub-grants to institutions located in Zimbabwe will be developed in line with World Bank practices in place at the time of the sub-grant award subject to consistency with any donor Administration Agreements and based on a fiduciary capacity assessment of the sub-project grantee undertaken by CCARDESA and reviewed by the Bank. Special arrangements – such as the channeling of funds through a third party – may be used if the capacity of the recipient institution is insufficient.

D. Procurement

94. A Procurement risk assessment of the CCARDESA Secretariat was undertaken during preparation of APPSA in November 2012. The assessment was in line with the World Bank's Procurement Risk Assessment Management System (P-RAMS). Under APPSA, the procurement assessment rating was deemed to be High primarily due to limited staff capacity and unfamiliarity with World Bank procurement policies and procedures. A Procurement Specialist subsequently came on board, and the Procurement Manual was developed and found to be acceptable. Project procurement will follow "Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" published by the World Bank in January 2011 ("Procurement Guidelines"), in the case of goods, works and non-consulting services; the World Bank's "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" published by the World Bank in January 2011 ("Consultant Guidelines") in the case of consultant services; and the provisions stipulated in the Grant Agreement. Further, the World Bank's "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants", dated October 15, 2006, and revised in January 2011 will apply.

95. During the November 2013 visit to the Secretariat, CCARDESA's procurement capacity was again reviewed, taking into account the previous assessment under APPSA and recognizing also the higher volume of procurement activities that is envisaged under the proposed MDTF. The Procurement Officer who came on board in early 2013 has left CCARDESA, so there currently exists a capacity gap at the Secretariat which will need to be quickly filled¹⁴. In addition a recent internal audit of CCARDESA revealed the need for increased oversight over procurement activities and payment approval processes. Risk mitigation measures were discussed which included (i) quick replacement of the Procurement Officer, along with provision of training on World Bank's procurement policies and procedures; (ii) strengthening procurement oversight through the operationalization of a procurement committee to promote more scrutiny over procurement decisions, verifying the cost of services through periodic independent reviews and establishing a credible vendor register that has been sourced by placing advertisements in the media; (iii) enhancement of the payment approval process; and (iv) implementation of the updated Procurement Manual which captures recommendations from the internal audit on procurement activities. The procurement risk rating for the proposed MDTF is **High**.

96. Dated covenants tied to the recruitment of a Procurement Officer with terms of reference, qualifications, and experience acceptable to the World Bank and the operationalization of the above mentioned procurement oversight measures, will be included in the CCARDESA MDTF Grant agreement.

¹⁴ An assigned Procurement Specialist, with qualifications satisfactory to the World Bank, has been seconded from FARA to provide interim support.

E. Social (including Safeguards)

97. Implementation of the activities proposed under the MDTF is not expected to have any significant negative social impacts. Proposals for sub-grant funding will not be allowed to involve land acquisition or resettlement. Given the importance of women and youth in agriculture and poverty reduction, and recognizing the different needs of women, men and youth, CCARDESA will work to integrate gender issues in all of its activities, programs and policies. CCARDESA will also systematically consider gender equality issues in policy development, the identification, formulation and implementation of its development programs; and in its administrative and financial management. CCARDESA will report on progress achieved towards integrating gender equality into its operations as a part of its regular reporting schedule.

F. Environment (including Safeguards)

98. Implementation of the CCARDESA MTOP is expected to have a positive impact on the environment by supporting the development and dissemination of agricultural technologies that promote sustainable use of land and water. The MTOP will also contribute towards reducing the vulnerability of poor rural households to climate shocks by promoting the adoption of climate smart agricultural practices.

99. The proposed MDTF is rated category B (partial assessment) as there are no large-scale, significant or irreversible environmental impacts anticipated with any of CCARDESA's proposed activities. There are, however, potential risks or negative impacts including potentially increased use of fertilizers, herbicides and pesticides that could arise from implementation of sub-grants that support generation and dissemination of agricultural technologies. In particular, these could include:

- Increased vulnerability to pests due to poor pest management or introduction of new cultivars;
- Localized agro-chemical soil and water pollution and reduction of water quality from agro-chemical use or poor handling of pesticides and disposal of empty chemical containers; and
- Unintended movement or transmission of plant varieties within or between countries as a result of field trials or other research activities.

100. The following safeguard policies in the areas of environmental assessment and pest management are triggered: *Environmental Assessment OP/BP 4.01* and *Pest Management OP/BP 4.09*. Because specific environmental risks and associated management plans will be identified during implementation as part of sub-project funding proposals, a combined environmental and social management framework (ESMF) and Pest Management Plan (PMP) have been developed. The ESMF and PMP provides clear guidance on environmental and social screening of all sub-projects and eventual development of Environmental and Social Management Plans (ESMPs) and Integrated Pest Management Plans (IPMPs) where necessary, including implementation procedures, relevant institutional roles, institutional arrangements and collaboration. The ESMPs and IPMPs will be used to document any likely impacts and provide appropriate mitigation measures that will be implemented in order to avoid or minimize the potential impacts associated with the respective sub-projects.

101. In the unlikely event of displacement of land-use in institutional land, ample notice time will be given to the workers who may be utilizing such land to harvest their crops. CCARDESA has limited experience in using and applying World Bank safeguard policies. However, some training is anticipated as part of their participation in the Bank financed regional IDA program APPSA (P094183). The task team will continue to work with the recipient throughout implementation of the MDTF to ensure capacity to apply safeguards policies is strengthened. In the short term CCARDESA will build capacity amongst staff and contract in expert services. In the medium term permanent safeguards staff may be hired.

102. **Disclosure.** An ESMF and PMP has been prepared and disclosed. Implementation of the ESMF and PMP and any related ESMPs and IPMPs would be monitored by CCARDESA's M&E Unit.

AFRICA
CCARDESA Multi-Donor Trust Fund

Annex 1: Results Framework and Monitoring

PDO: To facilitate integrated agricultural research for development¹⁵ within the SADC region with the aim of contributing to increased productivity of smallholder crop, forestry, fish and livestock enterprises in the region												
PDO Level Results Indicators	Core	Unit	Baseline (2013)	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Comments
				Y1	Y2	Y3	Y4	Y5				
1. Percentage of projects funded by CCARDESA that generate technologies judged by NARS to have potential for dissemination to farmers (disaggregated by type of technology)	<input type="checkbox"/>	%	0	0	10	20	40	70	Annual	CCARDESA & NARS reports	CCARDESA	Measures the success rate of CCARDESA financed projects in generating technologies
2. Percentage of validated technologies made available to NARS and other stakeholders in the region.	<input type="checkbox"/>	%	0	10	20	50	70	90	Annual	CCARDESA & NARS reports	CCARDESA	Measures the extent to which proven technologies are being scaled up or multiplied
3. Number of collaborative research or extension projects under implementation	<input checked="" type="checkbox"/>	No.	0	5	13	21	25	25	Annual	CCARDESA & NARS reports	CCARDESA	Measures success in financing collaborative R&D programs
4. Direct Program beneficiaries ¹⁶ (number)	<input checked="" type="checkbox"/>	No.	0	0	100,000	2600,000	420,000	500,000	Annual	CCARDESA & NARS reports	CCARDESA	See footnote
<i>of which female (percentage)</i>	<input checked="" type="checkbox"/>	%	0		30%	30%	30%	30%	Annual	CCARDESA & NARS reports	CCARDESA	

¹⁵ The integrated agricultural research for development (IAR4D) concept encourages the engagement of multiple actors along the commodity value chain with the aim of generating innovation in the agricultural system rather than mere research products or technologies. IAR4D promotes continuous interaction among researchers, service providers, farmers/end users; and the utilization of feedback, analysis and incorporation of lessons learned between different R&D processes.
http://fara.webfactional.com/library/browse/fara_publications/IAR4D_concept_paper.pdf

¹⁶ This measure includes Lead Farmers, contact farmers and other farmers who will benefit from the program knowledge, information, materials transfer.. Targets are calculated based on an assumption of 25 sub-grants under Component 1 which each reach at least 4,000 households directly for a total of 30,000 individuals based on average household size of five.

Intermediate Results Indicators	Core	Unit	Baseline (2013)	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibi- lity for Data Collection	Comments
				Y1	Y2	Y3	Y4	Y5				
Intermediate Result 1: Farmer participation in agricultural research priority-setting, in developing technologies and in advisory services, enhanced												
5. Number of SADC countries practicing the principle of inclusiveness in the planning and execution of research projects as a result of CCARDESA’s interventions.	<input type="checkbox"/>	No	0	0	5	8	10	12	Bi-annual	CCARDESA & NARS reports	CCARDESA	Measures results of CCARDESA capacity building support - to be based on qualitative assessments
6. Number of non-state actors and private sector organizations involved in the implementation of CCARDESA supported projects.	<input type="checkbox"/>	No	0	3	7	10	12	15	Annual	CCARDESA & NARS reports	CCARDESA	Measures the extent to which IAR4D principles are being met
Intermediate Result 2: Capacity of NARS strengthened												
7. Number of research proposals written by people trained under CCARDESA increases by at least 50%, by Year 5 (disaggregated by gender)	<input type="checkbox"/>	%	0	0	0	10	15	23	Annual	CCARDESA & NARS reports	CCARDESA	Measures effectiveness of capacity building support
8. At least four training programs for researchers, service providers and farmers in the region, drawn-up and implemented, by Year 2 of CCARDESA’s operation.	<input type="checkbox"/>	No	0	3	4	7	9	10	Bi-annual	CCARDESA Annual reports	CCARDESA	Measures if capacity building support is being provided
9. Regional centers of leadership in agricultural education & training identified by end 2014	<input type="checkbox"/>	No	0	1	1	2	3	3	Annual	CCARDESA annual reports	CCARDESA	Measures level of regional collaboration and partnership in education and training
10. Number of consultative w/shops on partnerships in year 2	<input type="checkbox"/>	No	0	2	5	8	10	12	Annual	CCARDESA annual reports	CCARDESA annual reports	Measures extent to which CCARDESA is building partnerships
11. Number of empowerment strategies and policy opportunities that promote development of farmer	<input type="checkbox"/>	No	0	1	2	4	8	10	Annual	CCARDESA annual reports	CCARDESA	Measures output of farmer empowerment

Intermediate Results Indicators	Core	Unit	Baseline (2013)	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Comments
				Y1	Y2	Y3	Y4	Y5				
organizations identified by yr1												support
12. Number of project partnerships/ networks identified and developed	<input type="checkbox"/>	No	0	4	6	8	10	12	Bi-annual	CCARDESA annual reports	CCARDESA	Measures effectiveness in developing partnerships/networking
Intermediate Result 3: Use of innovative ICT in technology generation and adoption, enhanced												
13. Number of ICT based tools developed and made available to NARS and stakeholders for supporting agricultural production and productivity	<input type="checkbox"/>	No	0	1	2	3	5	6	Annual	CCARDESA annual reports	CCARDESA	Measures the degree to which ICT has been incorporated in R&D agenda and CCARDESA's capacity to deliver
Intermediate Result 4: Coordination of research & development strengthened in SADC												
14. Number of stakeholders accessing regional management information system (disaggregated by gender)	<input type="checkbox"/>	No	0	3	5	7	10	12	Annual	CCARDESA annual reports	CCARDESA	Measures the extent to which regional ICT systems are in place
15. Number CAADP backstopping missions undertaken annually	<input type="checkbox"/>	No	0	4	8	12	16	20	Annual	CCARDESA annual reports	CCARDESA	Measures the extent to which CCARDESA is providing TA support to CAADP processes
16. Number of consultative and joint planning meetings held annually	<input type="checkbox"/>	No	0	4	7	10	12	14	Annual	CCARDESA annual reports	CCARDESA	Measure of collaborative processes
Intermediate Result 5: Production of improved and market relevant technologies increased												
17. Number of user facts sheets/brochures/technical bulletins developed	<input type="checkbox"/>	No	0	5	10	15	20	25	Annual	CCARDESA annual reports	CCARDESA	Measures output of information and knowledge exchange

Supplemental adoption indicators¹⁷

Adoption indicators where CCARESA has a shared contribution together with NARS	Core	Unit	Baseline (2013)	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Comments
				Y1	Y2	Y3	Y4	Y5				
1. Percentage of improved agricultural production and processing technologies and management practices developed using CCARDESA sub-grants, adopted by 4% farmers in year 5 of the program, and progressively increases annually thereafter	<input type="checkbox"/>	%	0	0	1	2	3	4	Annual	CCARDESA & NARS reports	CCARDESA	Measures rate of adoption of CCARDESA supported technologies
2. Proportion of farmers regularly accessing technologies and marketing information (including prices) increases from 1% in 2013 to 4% in Year 4.	<input type="checkbox"/>	%	1	1	2	3	4	5	Annual	CCARDESA annual reports	CCARDESA	Impact measure to assess level of sustained adoption and overall availability of technologies

¹⁷ Supplemental adoption indicators track technology adoption and farm level impact, which depend on a number of factors that lie outside the control of CCARDESA, such as farmer knowledge and skill, the availability and costs of inputs, and the availability and cost of labor, land tenure systems, weather and prices. As a result, these indicators are not part of the main performance indicators of the Project but represent an important set of indicators to monitor given the shared responsibility CCARDESA has in supporting the production of improved technologies for use by end-users.

AFRICA
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Annex 2: Detailed Project Description¹⁸

Sub-regional Research Organizations as a means to facilitate regional coordination on Agricultural R&D

1. SROs have proven effective at providing a responsive institutional structure that allows stakeholders within a region to benefit from the shared stock of knowledge and resources that a formal institutional structure can mobilize. However, experience within the SADC region (particularly with SACCAR) has shown the need for careful design and operation of a SRO. Lessons learned from SROs supporting agricultural technology generation and dissemination within the SADC region and elsewhere have shown the importance of:

- Ownership by and responsiveness to key stakeholders, including stakeholders within NARS, farmers and farmer groups, and private sector and civil society;
- Governance and management arrangements that focus on accountability, are responsive to a diverse set of stakeholders and a lean and effective Technical Secretariat to manage day-to-day activities;
- Proactive leadership in promoting partnerships and alliances;
- A focus on viability and financial sustainability through various strategies, including increased contributions from diverse stakeholders, increased cost sharing on regional research agenda; and establishing endowment funds but with a recognition that most SROs are highly dependent on donor funding, recognizing that they are providing essentially a regional public good, which market forces would not supply.

2. Ensuring institutional relevance and effectiveness, both as a means to improve impact and to ensure overall sustainability and support from stakeholders, are essential elements of an SRO.

Role of CCARDESA in Southern Africa

3. CCARDESA was developed as an agency of SADC upon recognition that the region lacked a coordinating center dedicated to agricultural research and development. Inadequate support for regional R&D coordination had resulted in the following:

- Inadequate attention given to challenges that are regional in nature and that cannot be dealt with on an individual country basis;
- Fragmentation of research and development efforts between countries;
- Lack of a formal and effective strategy for sharing of information of common interest to the countries in the region;

¹⁸ This annex is drawn from the core description of CCARDESA activities from its Medium Term Operational Plan 2014-2018

- Duplication of research and development efforts resulting in the inefficient employment of resources;
- Low levels of resource flow to the region in support of research and development;
- Inadequate partnerships and collaboration among stakeholders and poor linkages between public and private organisations in agricultural value chains.

4. In establishing CCARDESA stakeholders established the following mandate for CCARDESA in the charter establishing the institution:

- (i) To coordinate and promote collaboration among global, regional, and national agricultural R&D systems;
- (ii) To facilitate the exchange of information and technology among the SADC regional agricultural R&D institutions;
- (iii) To promote partnerships in the SADC region between public, private, civil society and international organizations 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 strengthen national agricultural R&D institutions by mobilizing human, financial and technological resources to implement and sustain demand-driven activities.

CCARDESA's Medium Term Operational Plan (MTOP)

5. CCARDESA's operations are governed by a Medium Term Operational Plan that identifies the main priorities and operational modalities for CCARDESA as an institution. The process of developing the MTOP was consultative with a focus on the key stakeholders - smallholder farmers of the southern African region – and whose representatives have been consulted in identifying the priority commodities and activities as articulated in the CCARDESA MTOP. Other important stakeholders include the NARS, in their entirety, i.e. encompassing research institutions, extension/advisory services, academic institutions and the private sector, SADC FANR, other SROs in SSA, FARA and IARCs. CGIAR centers and cooperating partners will also constitute vital stakeholders with whom CCARDESA will liaise with very closely as it operationalizes its MTOP and rolls out its programs and projects.¹⁹

6. The consultation process identified the following expected outputs of CCARDESA as an effective SRO:

- (i) Institutional platform for regional coordination and participation of research scientists and advisory service providers in agricultural R&D established and strengthened;
- (ii) Institutional platform for coordinated regional farmer participation in agricultural R&D established and strengthened;
- (iii) Coordination and collaboration among NARS through regional and international cooperation promoted;
- (iv) Exchange of information and technology among the agricultural R&D institutions in the region facilitated;

¹⁹ CCARDESA's website, www.ccardesa.org will be repository of information for stakeholders and contain updated stakeholder database, plans for future consultations and information on ongoing programs and activities.

- (v) Partnerships in the SADC region between NARS, public, private, civil society and international organizations in agricultural R&D enhanced; and
- (vi) Effective Sub-Regional Research Organization established and strengthened through mobilization of human, financial and technological resources to implement demand-driven regional R&D activities.

7. In the implementation of its MTOP, CCARDESA will focus on providing effective coordination of agricultural research and development in southern Africa by identifying challenges of a regional nature and instituting measures to address these challenges in conjunction with stakeholders. The approach will rely heavily on establishing effective partnerships in which the roles and responsibilities are clearly defined between CCARDESA and its partners. In this regard, the main interest will be to ensure that CCARDESA takes the lead only on tasks that are complementary to those of partners and that it focuses on those issues that are best done at regional level.

8. CCARDESA will maintain a coordinating and facilitating role and leave the implementation of R&D projects to NARS, CGIAR centers and other stakeholders. However, CCARDESA will play a crucial role by actively participating in resource mobilization for such projects, monitoring implementation, providing guidelines for conducting high impact research, and providing mechanisms for sharing of results and innovations within the region. With this approach CCARDESA will concentrate on the following:

- Problem identification in order to assist with defining the direction, quality and methodologies for research and development activities in the region, with a view to getting the highest possible impact and outcomes from the effort and resources used;
- Advocate and directly influence institutions to carry out reforms for improving the management of agricultural research and development, and encourage the successful establishment and management of partnerships among stakeholders in order to rationalize the use of resources;
- Carry out capacity building activities for NARS and other stakeholders so that they become more effective in service delivery and management of human, physical and financial resources;
- Provide the necessary environment and mechanisms for sharing information among stakeholders and for delivering extension services to farmers. This will include the development and use of innovative ways of carrying out extension services;
- Effectively monitor the activities being carried out by CCARDESA and its partners in the region, in order to learn lessons and develop clear learning systems for CCARDESA and partners in the region;
- Foster strong linkages, collaborations and synergies between the private and public sectors for purposes of increasing resource flows to the research sector and encouraging the delivery of quality service to clients.

9. The role of CCARDESA is to add value to R&D activities being carried out in the region and to improve efficiency and quality of outputs. The FAAP principles will form the guide for CCARDESA and will be used to direct the operations and interactions of the institution with stakeholders at regional, continental and global levels.

10. CCARDESA will carefully nurture and develop partnerships with other organizations in the region—including the NARS, CGIAR centers (e.g. *Centro Internacional de Mejoramiento de Maíz y Trigo* - CIMMYT, International Livestock Research Institute - ILRI, International Institute of Tropical Agriculture - IITA, International Crops Research Institute for the Semi-Arid Tropics - ICRISAT, etc.), policy analysis organizations and others. In parallel, efforts will be made to develop strong linkages with continental organizations such as FARA and its continental programs, NPCA, AFAAS, African Food and Agricultural Policy Platform (AFAPP) and others. The underlying principle is clear recognition that CCARDESA will achieve its objectives through a combination of outputs from its own works and the outputs coming from other organizations that will be tasked with some specific assignments.

Box 1. Managing the scale of activities within the MTOP: The CCARDESA MTOP identifies a wide range of activities within each thematic area as described below. The description is intended to demonstrate the range of possible activities within the MTOP, with implementation of specific activities determined by a demand driven process, the sub-grant system and a prioritization process within the CCARDESA Secretariat.

In general the MDTF will support the operational establishment of CCARDESA (operational costs), which would help leverage in additional financing for regional research from other donors (which would be one of the monitored benefits of the project), support adaptation and adoption of 'quick wins' (the pre-identified priorities for the region—as reflected in Table 2.2, Table 2.4, and Table 2.6 below), the establishment of a longer-term competitive mechanism for identification and selection of regional research priorities (the competitive grant mechanism), and demonstration through focused M&E and a targeted communication strategy to members states of the regional value added of CCARDESA investments (to increase the likelihood of financial contributions from member states).

Thematic Area 1: Farmer Empowerment and Market Access

11. **Rationale.** Some of the key constraints to increased smallholder crop productivity in Southern Africa identified in SADC regional R&D priority setting studies include limited access to agricultural inputs; limited affordability of improved seeds and fertilizers; loss of indigenous seed genetic resources that are generally more resilient to environmental and climatic shocks such as droughts; and lack of incentives to encourage wider-scale production and market access.

12. The available information on farmers' organizations within the SADC region shows strong social, political, institutional, and economic disparities both between and within countries. The interaction among these factors creates environments which may favor or hinder the emergence of effective farmer organizations. Farmer organizations (especially those dealing with smallholders) face challenges in their ability to adequately represent their members, to advocate for development of appropriate policies for farmers or to support research and advisory services. Farmer organizations therefore need suitable institutional support, if they are to be strengthened and to participate effectively in agricultural transformation. Regional support focusing on facilitating the spread of 'best practice' in farmer empowerment and market access across the region is essential.

13. This theme will support efforts to build the capacity of farmer groups and their national associations to participate more effectively in the formulation of the R&D agenda and to play a more active role in enhancing access to markets through advocacy, better linkages to input and output markets, and improved access to key technical/business management services. Youth will also be given special priority and will be provided with resources to encourage increased participation in agricultural programs.

14. ***Specific objectives:*** The specific objectives of CCARDESA assistance under this thematic area are:

- (i) To support farmer groups, youths and producer organizations through IAR4D and IPs linking them to markets and to key technical and business management services.
- (ii) To provide an improved enabling environment affording farmers and youths better access to improved and affordable inputs, such as seeds, fertilizer, agrochemicals and farm implements.
- (iii) To facilitate the formulation of regional policies and strategies for increasing farmer access to an expanded supply of inputs.
- (iv) To enhance capacities and farmer empowerment through skills transfer and climate smart agriculture principles.
- (v) To enhance more effective agribusiness partnerships between farmer groups (including the youths) and the private sector at both national and regional levels.

15. ***Expected outputs:*** The expected outputs of CCARDESA assistance under this thematic area are:

- (i) The emergence of strong farmer and producer organizations linked to markets and to key technical and business management services and inputs.
- (ii) Improved enabling environment for expanded farmer access to improved and affordable inputs, such as seeds, fertilizer, agrochemicals and farm implements.
- (iii) Enhanced good practices, climate smart agricultural interventions and capacities in farmer empowerment.
- (iv) Enhanced and more effective agribusiness partnerships between farmer groups and the private sector at both national and regional levels.
- (v) Enhanced participation of youths in farming activities and junior profession initiatives in the region.

16. ***Approach and activities for implementation under the thematic area.*** Studies will be commissioned to identify empowerment and policy strategies that will enhance development of effective farmer organizations. These studies will inform the priority activities, activity areas and sub-projects to be implemented. The studies will identify the good practices and partnership models to be promoted under this component. The IAR4D approaches under IPs will be used as a tool to organize farmers. Targeted training will be conducted to build the capacity of the NARS to develop skills for empowering farmers. The Operational Plan will support innovative pilot activities that are likely to enhance farmer empowerment. It will promote the establishment of appropriate networks and partnerships.

17. Workshops and regional exchange visits to disseminate good practices and to share experiences will be supported. CCARDESA will identify and promote good practice and support

capacity building for agribusiness linkages, private sector development and market access through the following activities:

- Conducting a stocktaking assessment of good practices on: (i) farmer and producer organization development; and (ii) models for agribusiness linkages;
- Supporting regional exchange visits to promote good practice (involving farmers together with service providers and advisory services);
- Developing an internship program that will provide work experience to youths through which they will be motivated to take up careers in agricultural research and development;
- Disseminating good practices and experiences through workshops, publications and newsletters;
- Supporting capacity building activities to enable farmer organizations to actively engage with their members;
- Conducting targeted training to promote good practice for agribusiness linkages and private sector development; and
- Supporting innovative pilot activities such as IAR4D and IP that are likely to contribute to improved agribusiness linkages.

18. The approach for implementing this thematic area is outlined in Table 2.1. The approach is based on interventions encompassing policy, capacity development, pilot studies, facilitation of knowledge sharing and promotion of good practices for agribusiness linkages and market access. The activities are broad ranging and include studies, capacity building, support of networks and partnerships, workshops and exchange visits, dissemination of information on good practices and experiences and support of pilot studies.

19. The “quick wins” identified under this Thematic Area encompass sorghum, soybean, poultry/eggs and forestry, with the priority activities being as outlined in Table 2.2. However, farmer empowerment and access is, in effect, a cross-cutting issue, and therefore applies to all commodities. As such, this Thematic Area needs will be based on needs assessments across all commodities and not focused on a limited number of priority commodities.

20. **Key stakeholders.** A range of institutions are expected to participate collaboratively in the activities under this component. These include farmer organizations, NGOs, private firms, private service providers, and national agricultural research, extension and education systems.

Table 2.1: Approach and Activities for Thematic Area 1: Farmer Empowerment and Market Access

Approach	Activities
1. Develop effective farmer organizations	<ol style="list-style-type: none"> 1. Carry out analysis to identify priorities for farmer empowerment; identify good practice and partnership models; and identify empowerment strategies and policy opportunities that promote development of farmer organizations; 2. Support stocktaking assessments of good practices on farmer and producer organizations’ development and models for agribusiness linkages; and 3. Commission studies to assess needs for farmer empowerment and access across all commodities.
2. Develop capacity of NARS to foster farmer empowerment mechanisms and to promote good practice for agribusiness linkages and private sector development	<ol style="list-style-type: none"> 1. Conduct targeted training to build the capacity of the NARS to develop skills for empowering farmers; 2. Support capacity building activities to enable farmer organizations to actively engage with their members; and 3. Conduct targeted training to promote good practice for agribusiness linkages and private sector development

3. Facilitate the exchange of knowledge and experiences	<ol style="list-style-type: none"> 1. Support up to four workshops to review study tools methodology and study results analysis, including identifying some projects, partnerships and networks. These workshops and other means (publications and newsletters) will serve as platforms to disseminate good practices and experiences 2. Support regional exchange visits and publications to disseminate good practices and to share experiences. 3. Packaging of already existing research and extension outputs for dissemination.
4. Support regional R&D sub-projects that enhance farmer empowerment and agribusiness linkages	<ol style="list-style-type: none"> 1. Support innovative pilot activities that are likely to enhance farmer empowerment. 2. Carry out inputs and commodity market surveys and analysis. 3. Implement sub-projects identified as “quick wins” (Table 2.2) in this first five-year period. 4. Carry out Quick win (priority) activities in the following: <ul style="list-style-type: none"> – development of reliable seed supply and marketing systems in major sorghum growing countries; – improvement of market access in the value chain for soybeans; – promotion of the commercialization of indigenous local chickens; – analysis of policy incentives for investments in smallholder forest plantation development; and – analysis of policy incentives for investments in small-scale value added processing in forestry.

Table 2.2: Identified “Quick win” activity areas for Sub-project development under Thematic Area 1 - Farmer Empowerment and Market Access

Commodity	Output and Priority Intervention Area	Activities
Cereals, especially Sorghum	Development of seed supply and Marketing/ trade of crop produce	Develop reliable seed supply and marketing systems in major cereals (sorghum) growing countries (Farmer Empowerment)
Soybean	Development of seed supply and Marketing and trade of crop produce	Improve market access in the value chain (Agribusiness Linkages)
Poultry, Eggs	Development of Marketing/ trade in livestock and livestock products	Promote commercialization of indigenous local chicken (Agribusiness Linkages)
Forestry	Development of technologies and Policies to support sustainable forest management and poverty reduction	Analyze policy incentives for investments in small holder plantation development (Farmer Empowerment and Agribusiness Linkage)
		Analyze policy incentives for investments in small-scale value added processing (Agribusiness Linkages)

Thematic Area 2: Research, Technology Generation and Farmer demand-driven Advisory Services

21. The main R&D priority areas in which CCARDESA has regional comparative advantage that would add value to the efforts of individual NARS were identified during program preparation, and primarily in the CCARDESA priority setting study carried out in 2012. Several activities relating to research, technology generation and farmer-led advisory services were identified for all the priority commodities. However, emphasis has been placed on the “quick wins” that are considered achievable during the period of this MTOP (see Table 2.4).

22. **Rationale.** The SADC region experiences a deficit of major cereals such as wheat, rice, sorghum and millet. The region also is home to more than 120 million domesticated animals and twice as many chickens, but member states are net importers of livestock products, most of which are sourced from outside the region. There are frequent losses of stock due to under-nutrition during the dry season and drought, as well as from livestock diseases. Great potential remains in the abundant indigenous stocks of livestock which can be improved through adoption of improved breeding strategies and better husbandry practices including control of trans-boundary animal diseases to enable access to export markets. This poor regional outlook shows

that low productivity across both the crop and livestock sectors remains a key challenge that needs to be addressed to meet the demand fuelled by the growing human population.

23. Generation of appropriate technology is one of the essential enabling conditions to ensuring increased agricultural productivity. More effective investment in farmer-centered agricultural R&D is needed to underpin farmer innovation and provide solutions to emerging agricultural problems within the SADC region. Among SADC Member States there is scope for greater cooperation and coordination to address common research priorities and to mobilize and utilize the scarce national and international resources more effectively. There is also a need to make regional technology development and transfer more cost-effective and efficient by fostering partnerships.

24. There is significant disparity between research on those crops through which farmers and the private sector can easily raise income, and those that do not have high potential for income generation but are very critical for household food security. The latter crops are normally significant determinants of food security for the poor and resource-deficient small scale farmers living far from opportunities for non-farm income generation. These crops have generally been termed ‘underutilized crops’ and require special attention. Support is especially needed to advance the scientific understanding of these crops, strengthen breeding and germplasm improvement efforts, and develop specific technologies for their production, storage, processing and use.

25. More than 7,000 species of plants have been used for food by mankind, but currently the world population is dependent on less than 20. For carbohydrates, for example, the world is dependent on only three—wheat, maize and rice. Giving attention to research, processing and consumption of the underutilized crops has the potential to improve food security in the region through the broadening of the food base. Generally, these underutilized crops have high nutritional value and an important role to play in the farming systems of the local people wherever they are grown. For most of the past few decades, the traditional model of technology generation and transfer in Africa was seen as a one-way process where researchers generated technologies, passed them on to extension staff which, in turn, extended them to farmers. The technologies developed through this research-extension model have had limited success, especially among smallholders. New methods which will be promoted will involve participatory learning and action research. There are a number of existing technologies, knowledge methodologies and participatory methods from within the region, the continent and beyond that are now widely accepted and can be employed for scaling out within the SADC region through extension systems. There are also some good examples of advisory service reform and participatory technology development in the region that can serve as models for others and can therefore be promoted and scaled out.

26. ***Specific objectives.*** The specific objectives of CCARDESA assistance under this thematic area are:

- (i) To identify the regional priority research activities, advisory service practices and partnerships that will generate regional or trans-boundary benefits;
- (ii) To implement identified research and development priorities;
- (iii) To strengthen the NARS to participate more actively in regional R&D activities;
- (iv) In collaboration with NARS and other stakeholders, develop research programs on underutilized crops in the region; and

- (v) To facilitate the up-scaling and out-scaling of best agricultural practices.

27. ***Expected outputs:*** The expected outputs of CCARDESA assistance under this thematic area are:

- (i) Regional R&D priorities identified;
- (ii) At least five priority sub-projects started by project year 2 (PY2);
- (iii) Partnerships and technical areas for research on underutilized crops identified and pursued by PY2;
- (iv) Regional R&D activities enhanced through increased technologies at the regional and national levels through:
 - a) increased joint activities in research and advisory services on regional priorities by NARS, and
 - b) “Quick win—Best fit” agricultural technologies and best practices are adapted, adopted and/or scaled-up and out.

28. ***Approach and activities for implementation under the thematic area.*** CCARDESA will support regional sub-projects which will contribute to the generation of technologies that respond to the identified priority needs of farmers. A key principle will be collaboration among the NARS and partnerships with the relevant universities and IARCs in the region. The partnerships and collaboration will promote the principle of subsidiarity in R&D and the need to strengthen and to build the capacity of weaker research institutions. Networks and partnerships will be established whose main functions will be to carry out the agreed priority research and advisory services activities of common interest between countries, to share knowledge and to disseminate research outputs generated for the benefit of the entire region. CCARDESA will achieve this through:

- (i) Supporting capacity-building activities in: (i) developing research and extension networks and partnerships and (ii) training NARS staff in proposal writing;
- (ii) Financing networks and partnerships to carry out research and extension sub-projects;
- (iii) Supporting piloting and scaling up/out of good practices and technologies;
- (iv) Supporting annual regional conferences where scientists and networks present their research findings. Funds would be made available for the publication and distribution of the conference proceedings;
- (v) Supporting the dissemination of research and extension information/findings through conferences, publications, existing journals in the region;
- (vi) Supporting research on production, processing and use of traditional and underutilized crops of existing farming systems; and
- (vii) Supporting exchange visits between research scientists and advisory service providers sharing common interests.

29. Several “quick win” priority activity areas have been identified and targeted for support under this Component, and hence only a limited and manageable number has been selected (Table 2.4). They encompass maize, sorghum, cassava, groundnut, soybean, forestry, livestock (cattle, sheep and goats), and fisheries, and research, technology generation and farmer-led advisory services.

30. The approach to implementation of Thematic Area 2 and the activities required to achieve the expected outputs mentioned above are outlined in Table 2.3. CCARDESA will adopt a two-pronged approach whereby it will (i) support sub-projects that contribute to the generation of technologies that respond to the identified priority needs of smallholder farmers, and (ii) promote a farmer-driven approach to R&D as well as advisory services. A range of activities will be undertaken to achieve the expected outputs under the Thematic Area.

Table 2.3: Approach to Implementation and Activities for Thematic Area 2: Research, Technology Generation and Farmer-Driven Advisory Services

Approach	Activities
1. CCARDESA will support regional sub-projects which will contribute to the generation of technologies and for piloting and scaling up/out of good practices and technologies that respond to the identified priority needs of smallholder farmers.	<ol style="list-style-type: none"> 1. Develop partnerships and support networks whose main functions will be to carry out the agreed priority research and advisory services activities of common interest between countries, to share knowledge and to disseminate research outputs generated for the benefit of the entire region. 2. Support 8 sub-projects for generation and testing of new technologies. 3. Support 6 sub-projects for piloting and scaling up/out of good practices and technologies.
2. CCARDESA will support dissemination of research and extension information through exchange visits, conferences and publications.	<ol style="list-style-type: none"> 1. Disseminate research and extension information/ findings through regional conferences. Three conferences are planned in the MTOP 2. Support exchange visits between research scientists and advisory service providers sharing common interests 3. Facilitate dissemination of research and extension information/findings through funding publications in different media including journals and common press.
3. Promote farmer-driven advisory services	<ol style="list-style-type: none"> 1. Promote the involvement of non-state actors in the provision of research and advisory services (i.e. private sector, civil society, farmer organizations) through establishment of multi-stakeholder innovation platforms for different commodities 2. Convene workshops in 3 regional countries to catalyze implementation of farmer-driven research and extension services. 3. Support initiatives to promote linkages between farmers and decision makers

31. **Key stakeholders.** A range of institutions is expected to participate in the various partnerships and networks in implementing the sub-projects and in conducting identified studies and other activities in research and advisory services. Those expected to participate include national agricultural research and extension organizations, IARC institutes operating in the SADC region, NGOs and civil society organizations active in promoting agricultural productivity and rural livelihoods, and private sector service providers. As stated earlier, a key principle will be collaboration among the NARS and partnerships with the relevant universities and IARC institutions in the region.

Table 2.4: “Quick win” activity areas for Thematic Area 2 - Research, Technology Generation and Farmer demand-driven Advisory Services

Commodity	Priority Intervention Area	Activities
Maize	Soil fertility and plant nutrient management	Adapt and validate available soil fertility interventions in similar environments in the region
	Conservation Agriculture Systems	Enhance agro-ecosystem resilience through minimum tillage, use of farm available organic matter and improved water harvesting and soil management in drier environments
Sorghum	Agro-processing, food safety and value addition	Develop, adapt and promote appropriate gender-sensitive smallholder equipment for processing and value addition at household level
Cassava	Agro-processing, food safety and value addition	Identify and develop alternative uses of cassava in livestock feed
Groundnut	Post-harvest crop management	Develop improved farm level post-harvest handling and storage infrastructure to reduce aflatoxin infestation and other losses
Soybean	Soil fertility and plant nutrient management	Up-scale the rhizobium inoculation technology production and use in major soybean growing areas in the region
Forestry	Value-added processing and marketing of wood and non-wood products	Research on the properties and potential applications of reconstituted wood products
	Policies to support sustainable forest management and poverty reduction	Analyze policy incentives for investments in small holder plantation development
Livestock	Water and range management and conservation	Conduct studies to support sustainable water supply & utilization of rangeland resources
	Livestock pests and diseases	Undertake control and eradication of Transboundary Animal Disease
	Breeding, biotech and conservation of animal genetic resources	Improve access to adapted quality heifers by farmers
	Breeding, biotech and conservation of animal genetic resources	Stabilize supply of improved day-old chicks through village/district level low cost hatcheries & cock-circles
Fishery	Fish processing, food safety and value addition	Enhance productivity of aquaculture through fish processing, food safety, value addition
	Sustainable harvesting and management of inland fisheries	Carry out socioeconomic research on marine fisheries to underpin sustainable management and harvesting

Thematic Area 3: Knowledge, Information and Communication

32. **Rationale.** Building human and social capital to improve agricultural productivity requires increased and improved knowledge and information-sharing through effective use of communication methods, media channels and processes. In recent years, there have been revolutionary advances in digital and Internet-based ICTs. A new information economy has emerged where trade and investment are global and businesses compete within a context of global knowledge and information. For all SADC countries, these changes mean major adjustments to harness information for economic and social development. However, many smallholder farmers have largely been by-passed by these developments.

33. Empowering smallholders to improve their production efficiency and to generate higher income through increased market engagement is a process that requires better access to appropriate information and the use of local knowledge to shape existing and new technologies to suit local situations. Therefore all sector stakeholders, including farmers, need to have access to information on available technologies and current market conditions in order for them to respond appropriately to market demands.

34. There is also need to build farmers’ capacity to interpret information in order for them to make informed decisions and to strengthen their negotiating skills. In this regard, the use of ICT has considerable potential as a vehicle for promoting stakeholders’ access to information. ICT

can be harnessed to help them participate more actively in national economic and social development. However, farmer advisory service providers and communication practitioners lack skills on how to use ICTs for development, including how to design multi-media strategies.

35. ***Specific objectives.*** The specific objectives of CCARDESA assistance under this thematic area are:

- (i) Promote packaging of information into appropriate knowledge sharing products for farmers and other stakeholders;
- (ii) Identify ICT information needs and state of use of ICT in the region in the dissemination of information to farmers and other stakeholders;
- (iii) Facilitate capacity building in the use of ICTs in the agricultural information systems;
- (iv) Promote the use of ICTs, media channels and interpersonal interactions to link different stakeholders;
- (v) Facilitate the use of ICTs and methods for education and learning;
- (vi) Promote the use of new ICT applications to improve smallholder commercialization, and market access; and
- (vii) Build the capacity of CCARDESA to serve as platform for sharing of information.

36. ***Expected outputs:*** The expected outputs of CCARDESA assistance under this thematic area are:

- (i) Use of ICTs, media channels and interpersonal interactions to link different stakeholders enhanced;
- (ii) Use of ICTs and methods for education and learning facilitated;
- (iii) Use of new ICT applications to improve smallholder commercialization, and market access improved;
- (iv) Regional knowledge generation and dissemination improved; and
- (v) Knowledge sharing enhanced through increased use of ICT within the region.

37. This thematic area will also contribute to the development of the SADC FANR's regional Agricultural Information Management System (AIMS).

38. ***Approach and activities for implementation under the thematic area.*** In PY1, a detailed situation analysis of the knowledge, information and communication systems in the agricultural sector in the region will be carried out in order to identify good and successful ICT policies, strategies and opportunities. CCARDESA will also:

- (i) Examine ICT tools and network linkages best suited for different stakeholders;
- (ii) Develop sub-projects, networks and partnerships among ICT practitioners linked to stakeholders;
- (iii) Support ICT interventions that benefit the research/extension, private sector and smallholder farmers to make informed decisions and strengthen their negotiation position with service providers and markets;
- (iv) Develop and maintain ICT information systems relevant for different stakeholders (institutions, frontline extension staff and farmers, etc.); and
- (v) Promote knowledge sharing and provide regional training focusing on ICT tools and network linkages best suited for specific national and regional needs.

39. The approach to the implementation of Thematic Area 3 and the activities required to achieve its expected outputs are outlined in Table 2.5. The approach will comprise a situation analysis of information, knowledge and communication in the agricultural sector, the strengthening of information and knowledge management systems, and developing CCARDESA into a repository of comprehensive and up-to-date information on agricultural R&D in the region.

Table 2.5: Approach to Implementation and Activities for Thematic Area 3: Knowledge, Information and Communication

Approach	Activities
1. Identify good and successful ICT policies, strategies and opportunities in agriculture and other sectors and to examine ICT tools and network linkages best suited for specific needs	1. Conduct a study to identify good and successful ICT policies and strategies in agriculture and other sectors (e.g., e-commerce); 2. Conduct a study examining ICT tools and network linkages best suited for specific needs; 3. Hold a regional workshop to review study results and identify sub-projects, partnerships and networks among communication practitioners linked to stakeholders.
2. Support regional projects that benefit the research/extension, private sector and smallholder farmers to make informed decisions and strengthen their negotiation positions	1. Develop and facilitate funding of two (2) sub-projects that benefit the research/extension, private sector and smallholder farmers to make informed decisions and strengthen their negotiation position with service providers and markets.
3. Establish CCARDESA as a sound information and knowledge base for the region	1. Establish and maintain a comprehensive and updated information and knowledge management system.

40. The identified “quick wins” under this theme apply to maize, rice, wheat, Irish potato and sweet potato, cotton, fruits and vegetables, forestry, livestock and fisheries and have been summarized in Table 2.6.

41. **Key stakeholders.** Institutions in the ICT sector will participate in this component and provide leadership in carrying out studies and implementing sub-projects in partnerships and networks with research and advisory service institutions, agricultural education institutions, NGOs, civil society organizations and farmer groups and organizations.

Table 2.6: “Quick win” activity areas for Thematic Area 3 - Knowledge, Information and Communication

Commodity	Priority Intervention Area	Activites
Maize	Crop pests and diseases	Develop cost-effective and harmonized regional surveillance systems (forecasting, monitoring and management) of migratory pests (armyworm, locusts, etc.)
Rice	Crop pests and diseases	Map out areas of high disease prevalence in the region to develop combined management and control efforts
Wheat	Soil fertility and crop management	Revise/develop temperature and planting dates suitability maps for major wheat producing countries in the region in response to changes in climate
	Crop pests and diseases	Enhance regionally integrated surveillance and management systems for Quelled birds
Irish & sweet potato	Marketing and trade of crop produce	Develop / strengthen accessible information systems for linking producers to fresh produce markets for both sweet potato and potato
Cotton	Marketing and trade of crop produce	Develop input/ output market information systems that are accessible to smallholders
Fruit & Vegetables	Conservation of plant genetic resources	Update an inventory of available indigenous fruit and vegetables in the region to guide conservation actions
Forestry	Policies to support sustainable forest management and poverty reduction	Analyze policy incentives for investments in small holder plantation development
		Analyze policy incentives for investments in small-scale value added processing
Livestock	Marketing/ trade in livestock and livestock products	Improve marketing intelligence & information system
	Breeding, biotech and conservation of animal genetic resources	Synthesize and disseminate existing knowledge on indigenous breeds to promote their utilization
Fishery	Sustainable harvesting and management of inland fisheries	Carry out socioeconomic research on marine fisheries to underpin sustainable management and harvesting

Thematic Area 4: Institutional Development and Capacity Building

42. **Rationale.** The generation of appropriate technology and its dissemination is essential to ensure increased agricultural productivity. However, this requires effective institutions. Analysis of the individual NARS institutions within the region indicates the need for strengthening their capacity to undertake institutional reform and change processes under CCARDESA. It also indicates the need for capacity building to enable NARS scientists and extension agents to effectively participate in regional research and extension activities through the competitive grant and other schemes which will be the vehicle for funding sub-projects under this Operational Plan.

43. Agricultural education and training (AET) is a critical investment to create the necessary changes needed in agricultural systems. Although there is a substantial unmet demand at all levels in both public and private sectors for skilled individuals, opportunities exist within the region to help meet some of these needs. A regional approach to AET can be a powerful tool for SADC institutions to respond to common challenges. In the case of agriculture, capacity building must address the needs of smallholder farmers, colleges offering practical certificate and diploma programs, and university level training, including post-graduate training.

44. Through this MTOP, CCARDESA will build on successful experiences in institutional reforms in agricultural educational systems. This will embrace non-formal training as well as the formal degree and diploma-based programs. All levels of training *vis-a vis* farmer training and

skill development; technical level training (certificate and diploma) as well as University level will be addressed under this thematic area.

45. The use of ICTs has considerable potential to expand stakeholders' access to information. This Thematic Area will contribute to building the capacity of the NARS to use ICT in technology generation, dissemination and adoption. It will also contribute to building the farmers' capacity to make informed production and marketing decisions, and to strengthen their negotiating skills.

46. Effective partnerships and networks are crucial for the implementation and coordination of sub-project activities. Consequently, all trans-boundary sub-projects or activities will require these network and partnership arrangements to spearhead implementation, for sharing and disseminating information and promoting good practices. CCARDESA will therefore place considerable emphasis on capacity development in partnership building and networking.

47. The work of CCARDESA is based on Pillar 4 of CAADP and thus requires to be implemented in close collaboration with other stakeholders within the region as well as partners linked to implementation of CAADP at continental level. Since CCARDESA is a coordination body and supports the countries of Southern Africa in the implementation of CAADP Pillar 4, it will put great emphasis in guiding the countries in CAADP implementation and its principles. This will include the development of quality investment plans which respond to the needs of each country and provides a good springboard for transformation of the agricultural sector in pursuit of the targeted 6 percent annual growth.

48. A Center of Excellence (sometimes called Center of Competence) refers to a shared resource, facility or entity (either virtue or physical) that provides leadership to others in a focus area. It will have specific goals and generally fulfills the needs of its clients through the provision of support, guidance, shared learning, governance and leadership within its area of jurisdiction.

49. Centers of Excellence are a good option in the development of a concentration of skills and competencies that can be shared with other institutions within a region. Each Center can serve as a valuable source of knowledge and skills which can be transferred to those that need them. Duplication of effort is also reduced and resources economically employed. These benefits are important in the Southern Africa region, where some Centers of Excellence have worked very well in the past. On this basis, CCARDESA will use its partners to identify and support Centers of Excellence for purposes of allowing other institutions in the region to fully benefit from them.

50. ***Specific objectives.*** The specific objectives of CCARDESA assistance under this thematic area are:

- (i) assist in institutional development and capacity building in research, technology generation and advisory services;
- (ii) enhance institutional development and capacity building in agricultural education and training, including training of smallholder farmers, technical level training (certificate and diploma) and university level training;
- (iii) provide frameworks scenarios on governance in institutional development;
- (iv) build effective partnerships and networks at different levels within the region; and
- (v) support SADC countries in the development of CAADP investment plans.

51. ***Expected Output:*** The expected outputs of CCARDESA assistance under this thematic area are:

- (i) Responsiveness of NARS to their stakeholders improved;
- (ii) Regional networks and partnerships for agricultural education and training systems developed and operating effectively in the delivery of well-coordinated programs of research, extension and agricultural education;
- (iii) Learning systems that support regional R&D innovation and training available and functional;
- (iv) Regional education initiatives and stakeholder capacity for regional R&D strengthened; and
- (v) All SADC countries fully engaged in CAADP and their investment plans developed.

52. ***Approach and activities for implementation under the thematic area.*** Broadly, activities under Thematic Area 4 will cover the following:

- (i) Undertake study on capacity for research planning, management and funding in NARS and a survey on agricultural education in the region to identify best practices, their impact and relevance on the agriculture sector;
- (ii) In order to bring weaker and stronger systems around shared problems, CCARDESA will organize regional workshops to share experiences; promote market-oriented and demand-driven policies; promote partnerships mainstreaming AET activities; and promote use of mass media and ICTs, etc.;
- (iii) Train NARS in proposal writing and competitive grants' procedures; and in design and use ICT-based communication strategies and campaigns;
- (iv) Support sub-projects that contribute to institutional reform; and mainstreaming good practices, including gender and HIV/AIDS;
- (v) Encourage exchange visits of NARS to share experiences; promote networks and partnerships between educational systems, R&D and farmer organizations. Promote sabbatical visits;
- (vi) Identify and support regional centers of excellence/leadership; and
- (vii) Provide support to SADC countries in the implementation of CAADP, especially the development of CAADP investment plans.

53. Capacity strengthening under this thematic area will also focus on promoting good practices and partnerships. Activities for the promotion of good practices will start with conducting a needs assessment in agricultural education in the region and to identify current practices, their impacts and relevance to the agricultural sector. CCARDESA will support projects and activities that will mainstream the good practices, including gender, food security, nutrition and HIV/AIDS in curricula for education systems that have agriculture or agriculture-related focus.

54. The approach to the implementation of this Thematic Area and planned activities are outlined in Table 2.7.

Table 2.7: Approach to Implementation and Activities for Thematic Area 4: Institutional Development and Capacity Building

Approach	Activities
1. Develop, strengthen institutional capacity of research, technology generation and advisory services.	<ul style="list-style-type: none"> a) Studies: Update a regional situational analysis on capacity for research planning, management and funding in NARS to inform the planning, design and implementation of subsequent sub-projects; b) Workshops: (i). Organize 2 regional workshops for NARS to share experiences and to promote good practices in research and advisory services; and (ii) support 3 targeted advocacy workshops to promote market-oriented, farmer-led and demand-driven policies, research and advisory services; c) Training: (i) Promote institutional reform in R&D for effective stakeholder participation and governance; (ii) Foster collaboration with IARCs to strengthen NARS in institutions reforms and share experiences; (iii) Support capacity building activities to develop research and extension networks and partnerships; (iv) Train NARS on how to reform research and advisory services in partnership with IARCs; and (v) Build capacity of NARS on how to prepare research proposals for competitive funding and on competitive grant management in partnership with IARCs and NARS; d) Sub-projects: Support 2 sub-projects that contribute to institutional reform; e) Exchange visits: Support 6 for NARS to share experiences and to promote good practices in research and advisory services; and f) Implement identified “quick wins” capacity building activities.
2. Develop, strengthen institutional capacity in agricultural education and training	<ul style="list-style-type: none"> a) Studies: Conduct a survey on agricultural education in the region (and centers of leadership) to identify practices, and the impact and relevance on the agriculture sector and carry out a regional workshop to review the study and identify sub-projects; b) Sub-projects: Support two sub-projects that mainstream the good practices, including gender and HIV/AIDS in curricula at primary, secondary and tertiary levels and informal education systems; c) Dissemination: Facilitate dissemination of good practices and experiences through various media.
3. Building and strengthening of effective partnerships and networks	<ul style="list-style-type: none"> a) Regional workshops: (i) Conduct a regional workshop to promote partnerships which ‘mainstream’ AET activities and institutions; and (ii) Conduct a regional workshop to build partnerships that promote the use of mass media and ICT to improve curriculum development, delivery and access; b) Exchange visits: Support three exchange visits to promote networks and partnerships between educational systems and research and advisory services and farmer organizations; c) Sabbaticals: Support 15 Support short term sabbatical initiatives.
4. Promotion of good practice and capacity building in knowledge, information and communication	<ul style="list-style-type: none"> a) Regional Workshops: Conduct two workshops to promote smallholder innovation and improved access, participation and ownership in knowledge and information systems. b) Train NARS to design and use ICT-based communication strategies and campaigns in support of farmer-centered innovations.
5. Support SADC countries in the development of CAADP investment plans	<ul style="list-style-type: none"> a) Establish effective partnerships with NEPAD PCA, SADC Secretariat, and other partners in the region to collectively provide support to SADC countries in their CAADP implementation; b) In partnership with other institutions in the region, develop and implement a strategy for building capacity and guiding SADC countries in the development of CAADP investment plans.

55. ***Building partnership and networks.*** Effective partnerships and networks are crucial for the implementation and coordination of project activities under this thematic area. Partnerships and networks can be formed at two levels; (i) that involve research and their institutions on one

hand; and (ii) the other involving farmers and their organizations' networks. Consequently, all trans-boundary sub-projects or activities will require these network and partnership arrangements to spearhead implementation, for sharing and disseminating information and promoting good practices.

56. In general, a network will be developed around a sub-project. A regional R&D strategy built around active networking serves, not only to bring top expertise into the process, but also is a powerful tool in the building of capacity amongst partners who will, inevitably, be at different stages of development. CCARDESA will follow this principle in institutional strengthening, where networks of specialization²⁰ will be developed. Within these networks, those partners with the best skills and facilities would become the leaders, with the objective of enhancing capacity and quality throughout the network. The network lead institutions could be designated to enhance capacity and quality throughout the network.

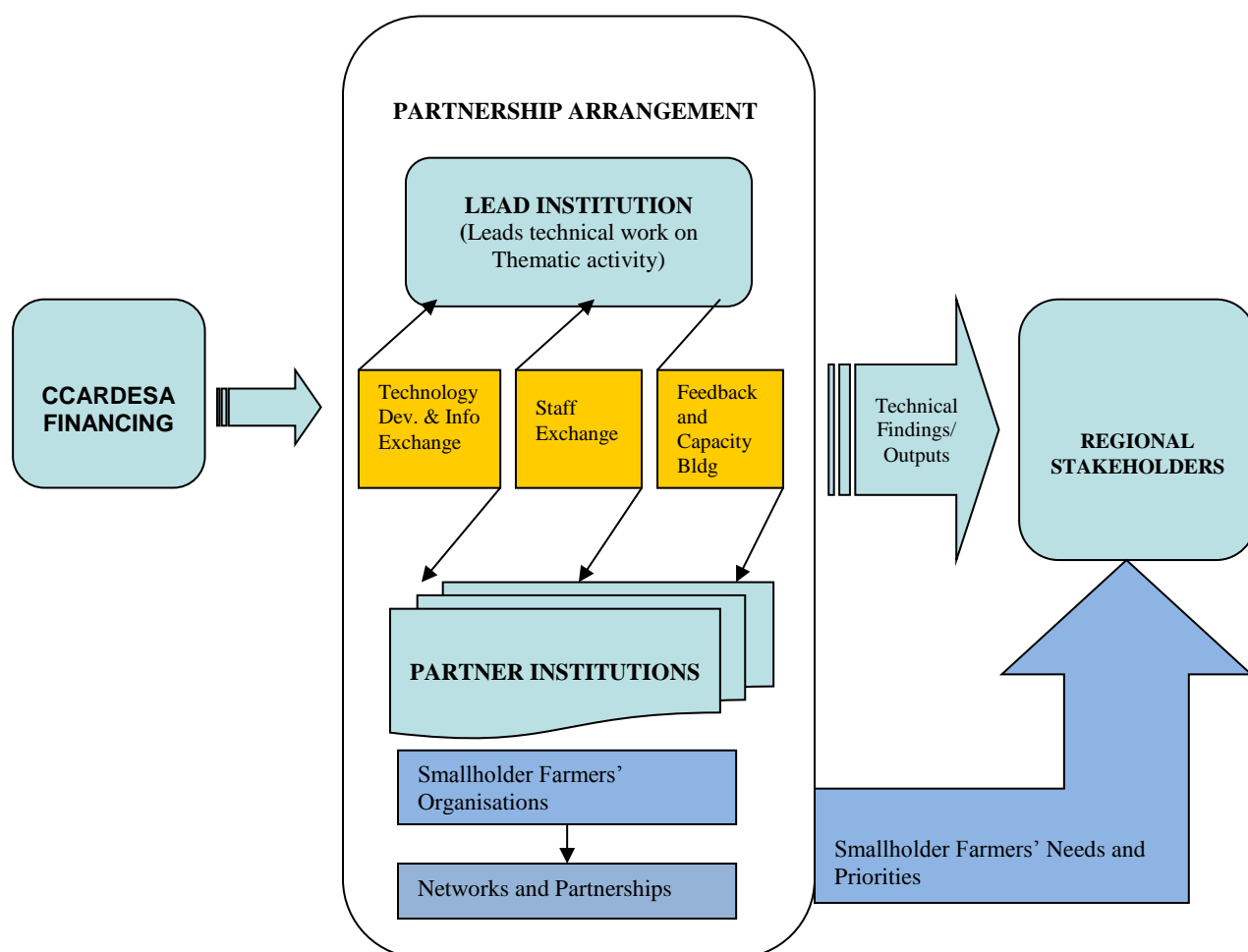
57. Networks of Specialization will therefore be recommended as a strategy to promote complementarity and synergy. Figure 3.1 provides a generalized structure of a network of specialization.

58. In line with the principle of subsidiarity, sub-projects will be led where possible by an institution (public or private) based in the region, with collaborating CGIAR centers and other international institutions as partners. The level at which the project is led automatically becomes the level of decision authority so that all decisions are taken as closely as possible to the farmers and the target groups. CCARDESA will check the general implementation of the projects, facilitate learning between/among the stakeholders and take actions and decisions on matters in which they have impeccable and exclusive competence and competitive advantage. On this basis, CCARDESA's actions will remain within the areas and at levels where its actions will show clear and unique effectiveness compared to such actions being taken at any other level. This approach, together with targeted training, is expected to enhance the capacity of the NARS institutions.

59. The NARS in the SADC region have developed from differing starting points and invested their limited resources in ways which suit their particular circumstances. No one institute anywhere operates at the cutting edge in all disciplines of science. Through greater collaboration, researchers, students, and (most importantly) farmers will be able to access the range of knowledge, technologies and facilities held by all SADC members.

²⁰ A Network of Specialization among SADC institutions participating in a sub-project can therefore be viewed as having leaders, facilitators and needy members. Leaders are the institutes that have greatest expertise and most up to date facilities in a certain subject area. Facilitators are those with specialized, but incomplete capacities within that area. Needy members are those who acknowledge their weakness in that area and seek to collaborate within the network in order to increase their services and capacities. By pooling their efforts through networking, collaborating institutes will be able to expand their capacity in training and impact-oriented R&D.

Figure 2.1: Generalized structure of Partnership and Network of Farmers and Specialised Institutions



60. ***“Quick win” priority areas relating to institutional development and capacity building.*** The identified “quick win” priority areas relating to institutional development and capacity building are summarized in Table 2.8. They comprise of:

- (i) development and maintenance of facilities to provide clean disease-free cassava planting material,
- (ii) strengthening of regional surveillance and management systems for potentially devastating and easily spread diseases in Irish potato and sweet potato,
- (iii) development of protocols to allow free germplasm exchange among research scientists working across the region,
- (iv) facilitation of the establishment of rural agro-dealerships to improve access to input/output markets by smallholder bean growers,
- (v) development of models for co-management or joint management of forests with local communities,

- (vi) analysis of policy incentives for investments in smallholder plantation development, and
- (vii) analysis of policy incentives for investments in small-scale value added processing in forestry.

Table 2.8: Identified quick win areas for Thematic Area 4 - Institutional Development and Capacity Building

Commodity	Priority Intervention Area	Activities
Cassava	Conservation and plant genetic resources	Support maintenance of community-based cassava nurseries that act as sources of clean planting material for farmers
	Plant breeding, crop variety development, biotechnology	Establish reliable supply systems for quality certified cassava planting material (produced using tissue culture)
Irish potato and sweet potato	Crop pests and diseases	Strengthen regional surveillance and management for powdery scab (<i>Spongospora subterranea</i>) and potato cyst nematode (<i>Globodera rostochiensis</i>)
Dry bean	Conservation and plant genetic resources	Develop protocols to allow germplasm exchanges among research centers in SADC working on similar projects
	Marketing and trade of crop produce	Facilitate establishment of rural agro-dealerships to improve access to input/ output markets by smallholder bean growers
Forestry	Production and sustainable use of natural forests and woodlands for multiple benefits	Promote development of models for co-management or joint management with local communities
	Policies to support sustainable forest management and poverty reduction	Analyze policy incentives for investments in small holder plantation development
		Analyze policy incentives for investments in small-scale value added processing

CROSS-CUTTING ISSUES

61. A number of cross cutting issues influence agricultural productivity by affecting farmer organizational capacity, generation of new technologies, advisory service provision and agricultural education systems, and institutional service delivery of R&D activities. Poverty, gender, human health and nutrition, climate change, environment, on-farm energy and R&D policy are such major issues that cut across all the Thematic Areas and sub-projects. Gender roles and the impact of HIV/AIDS are important in determining farm level agricultural productivity and require specialized responses from the NARS in the region. Implementation of activities including all R&D projects will therefore take into account and mainstream the important cross-cutting issues of gender, health and nutrition, poverty, climate change and environment.

Gender

62. **Rationale.** Gender specific roles in agricultural production and marketing are common among smallholders within the SADC region. Women often have different tasks or are even involved in different income generating activities than men. Services and interventions that lessen women's tasks and improve their labor productivity and income generating capacity need to be promoted because they have the potential for enhancing agricultural productivity and

household wellbeing. It will also be essential during sub-project formulation and implementation to strengthen the knowledge and skills of the NARS in terms of how to determine gender specific needs, services and opportunities and to develop technologies that address these needs.

63. ***Specific objectives and envisaged output***

- (i) Promote services and interventions that lessen women's tasks and improve their labour productivity (especially labour saving technologies) and income generating capacity;
- (ii) Strengthen knowledge and skills of the NARS in determining gender specific needs, services and opportunities; and
- (iii) Strengthen the knowledge and skills of the NARS to develop technologies that address gender specific needs, services and opportunities.

64. ***Approach and activities for implementation.*** Areas where CCARDESA will focus on at the regional level are summarized in Table 2.9 and will include:

- (i) A review of the gender situation in agriculture in the SADC Member States. The findings will be used to develop training and advocacy programs on gender in agricultural R&D as appropriate for individual NARS;
- (ii) Advocacy and capacity building on gender awareness within the NARS; and
- (iii) Workshops, meetings, exchange visits and dissemination of relevant information on best practices in addressing gender issues in technology generation and service provision.

Table 2.9: Approach to Implementation and Activities for Gender

Approach	Activities
1. Promote equal participation of men and women in agriculture in the SADC member states	<ul style="list-style-type: none"> 1. Conduct a review of the gender situation in agriculture in the SADC Member States. 2. Convene a workshop to review study findings. 3. Develop training and advocacy programs on gender in agricultural R&D as appropriate for individual NARS. 4. Conduct capacity building / training on gender awareness within the NARS. 5. Promote advocacy on gender awareness within the NARS.
2. Information dissemination	<ul style="list-style-type: none"> 1. Conduct workshops, meetings, exchange visits and dissemination of relevant information on best practices in addressing gender issues in technology generation and service provision.

65. ***Sub-project development.*** The Grant Management Unit (GMU) in collaboration with the review and appraisal experts will ensure that gender issues are adequately addressed as necessary through careful screening of all sub-project proposals before their final approval and release of sub-project funds. The sub-project screening process will also require that each sub-project proposal has a logical framework and an M&E strategy which sufficiently mainstream the gender issues in order to assess the impacts and draw lessons learnt.

66. ***Key stakeholders.*** CCARDESA will collaborate with the Gender Unit of the SADC Secretariat in all regional activities relating to gender and HIV/AIDS. Other regional networks such as FANRPAN will also be involved in specific studies and policy analysis. Areas of collaboration will include advocacy, training for capacity building of the NARS, developing gender and HIV/AIDS checklists for screening sub-project proposals, and identifying appropriate

gender and HIV/AIDS indicators both in the CCARDESA M&E system and in the logical frameworks for sub-project proposals.

Health and nutrition

67. ***Rationale.*** The impact of HIV/AIDS and nutrition is being felt throughout the agricultural systems within the SADC region.²¹ Because HIV/AIDS affects the most productive age group, it is having a devastating impact on agricultural labor and agricultural service providers in the SADC region. The NARS in SADC have lost professional staff, with the disease reducing the number of scientists and extension agents. Likewise, the death of productive adults has left many villages in the SADC region with fewer experienced farmers and a large share of malnourished children and under-employed or unemployed young adults. The reduced availability of adult labor and skills also creates a greater burden on the family, leaving the females as widows with limited income sources, as resources are diverted into caring for the unwell.

68. Studies will be commissioned to synthesize the extent of nutrition intake and determine appropriate intervention measures to prevent and mitigate the effect of HIV/AIDS, high stunting rates and malnutrition in Southern Africa. New production technologies such as “labor saving technologies” are needed that exert less demand on household labor and promote the production and consumption of more balanced diets in rural households.

69. ***Specific objective.*** To create regional measures to prevent and mitigate the effect of malnutrition and HIV/AIDs in Southern Africa.

70. ***Approach and activities for implementation.*** Key areas where CCARDESA will focus are summarized in Table 2.10 and will include:

- Regional study to identify gaps within national systems and develop strategies to build human capital through joint activities or training;
- Workshops, meetings, exchange visits and dissemination of information on best practices in addressing HIV/AIDS and nutrition issues in technology generation and service provision;
- Coordination of the development of labor saving technologies/strategies, including dissemination of successful examples of the use of appropriate tools or practices, and promotion of value adding crops for HIV/AIDS affected households;
- The study commissioned by CCARDESA in 2012 gives a detailed description of the specific activities that need to be considered along commodity value chains in crops, livestock, fisheries and forestry in order to enhance food and nutrition security among HIV/AIDS affected households. These will be considered in developing and implementing sub-projects as well as in information dissemination and advocacy; and
- Close collaboration with on-going regional and national nutrition programs, and draw on these lessons for scaling-out.

²¹ Food consumption has been found to drop by 40 percent in homes afflicted by HIV/AIDS; globally, Southern Africa is the region most affected by the pandemic. AIDS has killed around 7 million agricultural workers since 1985 in the 25 hardest-hit countries, mostly in east and southern Africa, where AIDS-related illnesses could kill 16 million more before 2020, and up to 26 percent of their agricultural labour force within two decades (World Bank, World Development Report, 2008).

Table 2.10: Approach to Implementation and Activities for Health and Nutrition

Approach	Activities
1. Support and participate in regional initiatives	<ol style="list-style-type: none"> 1. Conduct a regional study to identify gaps within national systems; 2. Closely collaborating with on-going regional and national HIV/AIDS programs, and draw lessons on these for scaling-out; 3. Develop strategies to build human capital through joint activities or training.
2. HIV/ AIDS awareness and mainstreaming	<ol style="list-style-type: none"> 1. Conduct workshops, meetings, exchange visits and dissemination of information on best practices in addressing HIV/AIDS in technology generation and service provision; 2. Facilitate dissemination of successful examples of the use of appropriate tools or practices; 3. Promote value addition to crops for HIV/AIDS affected households; 4. Coordinate the development of labor saving technologies/strategies.
3. Nutrition studies, awareness and mainstreaming	<ol style="list-style-type: none"> 1. Support studies to determine nutritional status for various local foods; 2. Synthesize study results and provide indicators for implementation; 3. Create awareness through workshops and media campaigns.

71. **Sub-project development.** The Grant Management Unit (GMU) in collaboration with appraisal experts will ensure that *health and nutrition* issues are adequately addressed as necessary through careful screening of all sub-project proposals before their final approval and release of sub-project funds. The sub-project screening process will also require that each sub-project proposal has a logical framework and an M&E strategy which sufficiently mainstreams the *health and nutrition* issues in order to assess the impacts and draw lessons learnt.

Climate Change and Environmental issues

72. **Rationale.** Climate smart agriculture and environmental issues more generally are drawing increasing attention globally. In recent years, attention has focused on climate change, the production and use of bio-fuels, and the use of biotechnology in the development of genetically modified crops and livestock. Agriculture in sub-Saharan Africa is the driver of deforestation and degradation, with Greenhouse Gas (GHG) emissions from agriculture, deforestation and forest degradation accounting for 30 per cent of emissions. It is estimated that agricultural emissions are likely to increase under a business-as-usual scenario.

73. To date, very little serious attention has been paid to promote adaptation strategies for climate change and the other environmental issues in the SADC region, in terms of the development of the science, adaptation measures and harmonized regional policy. Compared with other regions of the developing world, the SADC region has also not benefited from investment in environmentally-friendly technology from developed countries under the Clean Development Mechanism. There is therefore need for a major paradigm shift towards development of agricultural technologies for coping, mitigation and adaptation to climate through developing and promoting husbandry practices that contribute to climate smart agriculture principles and environmental sustainability.

74. **Specific objective.** To contribute to the understanding of climate change and other environmental issues in the region by promoting adaptation method and the development of agricultural technologies and husbandry practices that contribute to climate smart agriculture and environmental sustainability.

75. **Approach and Activities for implementation.** In general climate change adaptation options relate to improvement of management, such as:

- (i) improved forest management by reducing deforestation, degradation and de-vegetation;
- (ii) improved crop and grazing land management through improved agronomic practices, nutrient use, tillage practices and residue management; and
- (iii) conservation, including restoration of organic soils that are drained for crop production, and restoration of degraded lands.

76. CCARDESA will contribute to the understanding of adaptation scenarios to climate change and other environmental issues in the region by supporting studies and sub-projects and sharing of information through workshops and meetings. The activities are summarized in Table 2.11

Table 2.11: Approach to Implementation and Activities for Climate Change and Environment

Approach	Activities
1. Support development of climate resilience strategies	<ul style="list-style-type: none"> 1. Fund studies that will provide scientific evidence and greater understanding on benefits and risks from the production and use of bio-fuels and genetically modifies crops and livestock; 2. Support studies that will identify the main agricultural and forestry activities and practices and adaptation strategies; 3. Finance sub-projects that promote the uptake of best practices.
2. Promote sustainable utilization of natural resources	<ul style="list-style-type: none"> 1. Support studies which prevents environmental degradation through soil erosion; 2. Support studies that identify measure to improve water quality in agriculture; 3. Support initiatives on sustainable utilization of natural resources.
3. Facilitate information sharing and dissemination on environmental issues	<ul style="list-style-type: none"> 1. Support workshops, meetings, exchange visits, and collection and dissemination of information on environmental issues of climate change, biotechnology and bio-fuels.

77. **Sub-project development.** The Grant Management Unit (GMU) in collaboration with the review and appraisal experts will ensure that *environmental* issues are adequately addressed as necessary through careful screening of all sub-project proposals before their final approval and release of sub-project funds. The project screening process will also require that each project proposal has a logical framework and an M&E strategy which sufficiently mainstreams the *environmental* issues in order to assess the impacts and draw lessons learnt.

78. **Key stakeholders.** The key stakeholders with regard to environmental issues are smallholder farmers, NARS, the private sector, natural resource management organizations, relevant ministries in governments and NGOs. These stakeholders will be consulted periodically so that CCARDESA can remain vigilant and informed about environmental issues, and incorporate them into its sub-projects. Agriculture is receiving increasing attention as a result of its contribution to environmental problems (e.g. water quality and deforestation with regard to climate change, eutrophication of water systems) and its potential to contribute to both adaptation to, and mitigation of, climate change. Not surprisingly, there has been a call for the adoption of “climate smart” agriculture, a development that CCARDESA will monitor and advocate for.

R&D policy and advocacy

79. ***Rationale.*** Agricultural research and advisory services in many countries in the SADC region are largely the preserve of the public service institutions with specific legal mandate to set the priorities and carry out R&D activities. While some institutions within the NARS (*e.g.* agricultural NGOs, universities, the private sector, and farmer organizations) can make a significant complementary contribution and may have certain comparative advantages in terms of skills and resources, they often do not have the mandate to contribute to the setting of the R&D agenda, to carry out research, or to provide advisory services.

80. For CCARDESA to achieve its objectives, a new way of doing business will be necessary to allow meaningful implementation of the FAAP principles of effective stakeholder participation and consultation, pluralism and subsidiarity in the setting of the R&D agenda as well as implementation of development initiatives within the individual NARS. For these FAAP principles to be adopted, policy reforms and advocacy will be necessary in virtually all the NARS so as to broaden their mandates, responsibility and accountability and to give formal recognition of the roles of the different stakeholders and their contributions. Therefore, facilitating of sound policy making and policy advocacy will be at the core of CCARDESA. Establishing appropriate mechanisms for inputs to be made by farmers, researchers, extension agents and other stakeholders to influence the formulation and implementation of policies will be critical to ensuring the development of appropriate R&D policies.

81. Advocacy for R&D is of vital importance to national and regional support for agricultural R&D and hence its contribution to the development of both small-scale and commercial agriculture. Without strong advocacy for agricultural R&D, it will receive little or no support in the policy making and budgetary processes of national governments, a situation that already prevails with several governments having failed to honor their commitments to agriculture. As the newly formed regional SRO which was widely called for by all stakeholders and strongly supported by national governments and SADC, CCARDESA, working in collaboration with its stakeholders and through the correct channels, is well positioned to advocate for increased support to agricultural R&D throughout the region.

82. ***Specific Objectives.*** The specific objectives of CCARDESA with respect to R&D policy and advocacy are to:

- (i) promote and advocate for institutional reform and change processes that will contribute to a new way of doing business and achieving its objectives; and
- (ii) support capacity building of national R&D systems so as to enable them to undertake demand-driven reforms of their R&D programmers.

83. ***Approach and activities.*** CCARDESA will promote and advocate for institutional reform and change processes that will contribute to a new way of doing business and achieving its objectives. As the NARS move towards developing more pluralistic, market oriented, and farmer demand-driven research and innovation systems under this Operational Plan, they will require outside knowledge or specialized assistance to facilitate institutional development or change processes. CCARDESA will therefore support capacity building to national systems so as to enable them to undertake demand driven reforms for their R&D programs. Policy and advocacy activities are summarized in Table 2.12 and will include the following:

- A situation analysis in PY1 of research planning, management and funding in the SADC Member States. The findings will be used to develop training and advocacy programs promoting institutional reform and change management in NARS, and to promote effective governance of the R&D.
- Advocacy and capacity building for national systems on how to reform research and advisory services, and conducting training programs to support national systems by bringing in capacity from the region and elsewhere to assist in institutional strengthening.
- Development of projects to pilot activities likely to contribute positively to institutional reform.
- Workshops, meetings, exchange visits and dissemination of relevant information on institutional reform to promote sharing of experiences between NARS in the different Member States.

Table 2.12 Approach to Implementation and Activities for R&D policy and advocacy

Approach	Activities
1. Regional analysis to identify gaps, challenges and opportunities	<ol style="list-style-type: none"> 1. Carry out a situation analysis of research planning, management and funding in the SADC Member States in PY1. 2. Develop training and advocacy programs promoting institutional reform and change management in NARS based on the findings. 3. Support sub-projects to pilot activities likely to contribute positively to institutional reform based on the study findings.
2. Capacity strengthening/building	<ol style="list-style-type: none"> 1. Undertake advocacy and capacity building for national systems on how to reform research and advisory services 2. Conduct training programs to support national systems by bringing in capacity from the region and elsewhere to assist in institutional strengthening.
3. Information sharing and dissemination	<ol style="list-style-type: none"> 1. Support workshops, meetings, exchange visits and dissemination of relevant information on institutional reform to promote sharing of experiences between NARS in the different Member States.
4. Advocate for policy and financial support for agricultural R&D among national governments	<ol style="list-style-type: none"> 1. Publicist widely the achievements and impact of R&D 2. Undertake active campaign for the policy and financial support of the NARS in the region. 3. Utilized CCARDESA's profile and recognition to actively network with development agencies, donors, foundations and NGOs so as to get financial and other support for R&D.

84. **Sub-projects development.** The Grant Management Unit (GMU) in collaboration with the review and appraisal experts will ensure that R&D policy and advocacy issues are adequately addressed as necessary through careful screening of all sub-project proposals before the final approval and release of sub-project funds. The sub-project screening process will also require that each sub-project proposal has a logical framework and an M&E strategy which sufficiently mainstream the R&D policy and advocacy issues in order to assess the impacts and draw lessons learnt.

85. **Key Stakeholders.** CCARDESA will collaborate with institutions in the region that deal with agricultural policy, such as FANRPAN and ReSAKSS-SA, to carry out specific research policy studies. It will also collaborate with government ministries (Agriculture, Economic Planning and Finance) and other key stakeholder organizations to advocate for institutional reforms that will promote pluralism and greater stakeholder participation in the governance of

agricultural R&D. R&D policy must ultimately address the needs of smallholder farmers who are the main beneficiaries and stakeholders of CCARDESA and its counterpart NARS. While the co-operating partners do not constitute key stakeholders, their views should nonetheless be taken into consideration.

86. The key stakeholders as regards to advocacy are NARS, smallholder farmers' organizations, the private sector and NGOs. It is these groups who are well positioned to advocate for changes to agricultural policy and the research agenda.

Table 2.13: CCARDESA MTOP Summary of Budget by Component (US\$'000)

	PY1	PY2	PY3	PY4	PY5	Total	% of total Budget
Thematic Areas							
Thematic Area 1: Promote farmer empowerment and market access	622	1,461	1,366	1,086	831	5,365	14
Thematic Area 2: Res, Tech. Generation & Farmer demand-driven Advisory Services	-	2,005	1,725	2,505	2,505	8,740	23
Thematic Area 3: Knowledge, Information and Communication	301	550	85	550	50	1,535	4
Thematic Area 4: Institutional Development and Capacity Building	1,241	2,630	1,800	2,775	934	9,379	25
Sub-Total Total Thematic Areas	2,163	6,645	4,976	6,916	4,320	25,020	66
CCARDESA Operations							
CCARDESA Governance	749	470	679	470	516	2,884	8
Capital Investments	144	99	-	-	-	243	1
CCARDESA Secretariat Emoluments	1,608	1,714	1,714	1,714	1,714	8,464	22
CCARDESA Administration	185	214	259	259	282	1,199	3
Sub-Total CCARDESA	2,686	2,497	2,652	2,443	2,512	12,790	34
Total CCARDESA MTOP Budget	4,849	9,142	7,628	9,359	6,832	37,810	100
Price & Physical Contingencies	538	1,045	872	1,085	781	4,321	
GRAND MTOP TOTAL	5,387	10,187	8,500	10,444	7,613	42,131	

Table 2.14: CCARDESA MTOP: Summary of MDTF Financing (US\$'000)

	MTOP Budget	MDTF Budget
Thematic Areas		
Thematic Area 1: Promote farmer empowerment and market access	5,365	1,031
Thematic Area 2: Res, Tech. Generation & Farmer demand-driven Advisory Services	8,740	6,190
Thematic Area 3: Knowledge, Information and Communication	1,535	50
Thematic Area 4: Institutional Development and Capacity Building	9,379	1,840
Sub-Total Total Thematic Areas	25,020	9,111
<i>Of which sub-grants</i>	<i>12,000</i>	<i>5,000</i>
CCARDESA Operations		

CCARDESA Governance	2,884	2,884
Capital Investments	243	243
CCARDESA Secretariat Emoluments	8,464	7,194
CCARDESA Administration	1,199	1,199
Sub-Total CCARDESA	12,790	11,520
Total CCARDESA MTOP Budget	37,810	20,631
Price & Physical Contingencies	4,321	4,321
GRAND MTOP TOTAL	42,131	24,952

Table 2: 15: Projected MDTF Disbursements by Project Year (US\$ millions)

Component	PY1	PY2	PY3	PY4	PY5	Total
Component 1: CCARDESA Thematic Programs	1.72	3.25	2.71	3.32	2.43	13.43
Component 2: CCARDESA Management and Governance	1.47	2.79	2.32	2.86	2.08	11.52
Management, administration and supervision of the MDTF (Bank executed costs)	0.14	0.26	0.22	0.27	0.20	1.09
Total	3.33	6.30	5.25	6.45	4.71	26.04

Table 2: 16: Projected MDTF Disbursements by Fiscal Year (US\$ millions)

Fiscal Year	2014	2015	2016	2017	2018	2019
Annual	1.00	2.33	6.30	5.25	6.45	4.71
Cumulative	1.00	3.33	9.63	14.88	21.33	26.04

AFRICA
CCARDESA Multi-Donor Trust Fund

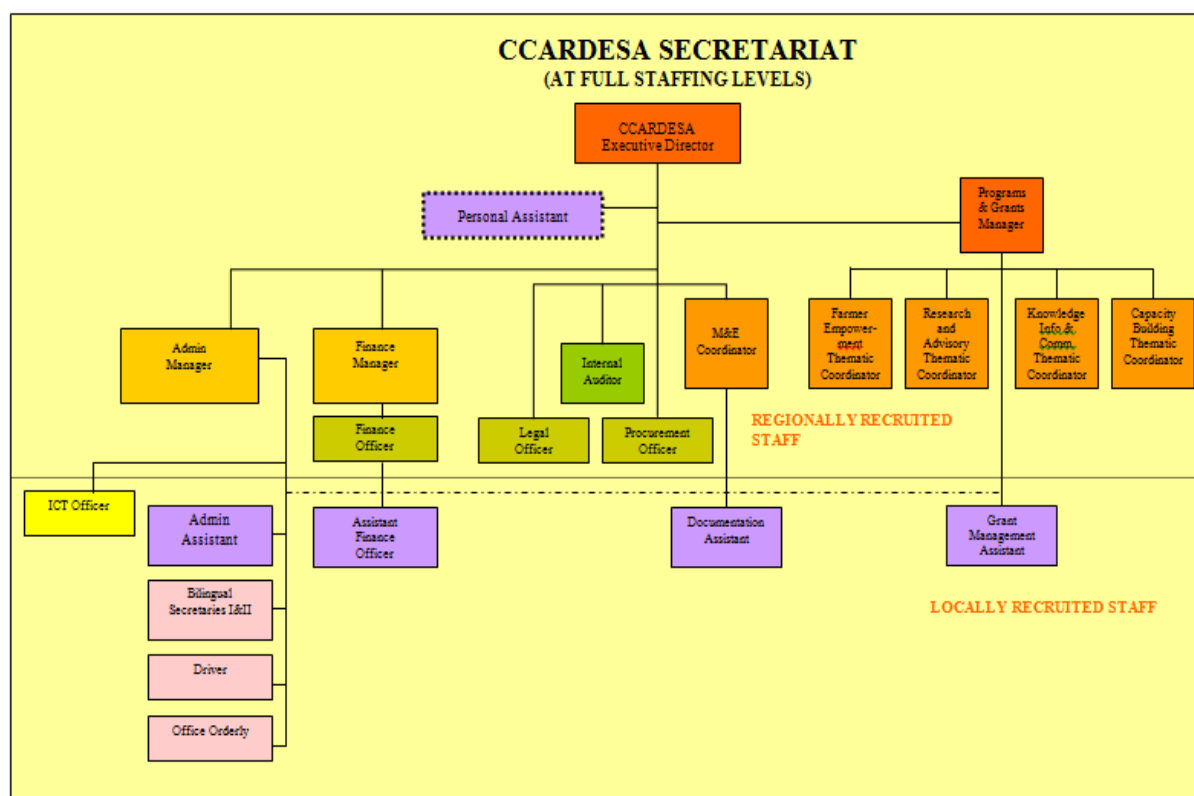
Annex 3: Implementation Arrangements

Project Institutional and Implementation Arrangements

1. **CCARDESA MTOP.** The CCARDESA MTOP will form the basis for MDTF implementation. As a regional institution, CCARDESA's mission and MTOP have been developed with its partners and stakeholders (including AU/NEPAD, SADC, FARA, other SROs, CGIAR centers, farmers' groups and civil society organizations, private sector). The MTOP is fully consistent and harmonized with the priorities and principles of CAADP and FAAP. Implementation of programs follows the subsidiarity principle to facilitate ownership and responsibility of actors on a comparative advantage basis.
2. Implementation of activities under the MTOP will be guided by an annual work planning and budgeting process approved by the CCARDESA Board. MDTF financing will be based on a comprehensive annual work plan and budget, which will describe all CCARDESA activities for the year and their different funding streams. Funding from the MDTF and other donors will be on a parallel basis. Responsibilities for fiduciary monitoring for both financial management (FM) and procurement aspects under the MDTF will rest with the CCARDESA Secretariat (see discussion of FM and Procurement below).
3. **CCARDESA institutional structures.** CCARDESA was established by a charter endorsed at the SADC level and signed by individual SADC member countries. CCARDESA is governed by a General Assembly of regional R&D stakeholders from SADC member states and a Board of Directors drawn from a cross section of R&D stakeholders. Members of the General Assembly are stakeholders drawn from the SADC countries and meet every two years. In addition to the General Assembly, as a SADC Subsidiary Organization, CCARDESA also provide reports on its activities to the SADC Council and SADC Ministers responsible for Agriculture and Food Security, who may also perform functions related to approving specific issues where required. The Board of Directors of CCARDESA, composed of 13 members, provides the primary oversight and governance mechanism to guide CCARDESA on its general direction and programs. The first CCARDESA Board was appointed by the SADC Ministers of Agriculture; since then, the Board itself has appointed new members to replace serving members whose terms are due to expire.
4. The day-to-day operations of CCARDESA are run by a Secretariat based in Gaborone, Botswana and led by an Executive Director. The Secretariat performs the day-to-day functions of managing and implementing CCARDESA's programs, as approved by the Board, and performs all tasks relating to the coordination of agricultural research and development in the SADC region. The CCARDESA governance manual summarizes the institutional arrangements, composition and functions of each structure of the governance of CCARDESA.
5. CCARDESA's staff structure is structured around staff deployment to deliver on core and non-core functions. Currently, a staff of twelve are in place including the Executive Director, Program and Grants Manager, Research and Advisory Thematic Coordinator, M&E Coordinator, APPSA coordinator, Finance Officer, Finance Assistant, HR & Administration Manager, Information Officer and 3 administrative assistants. Interim Procurement support is currently

being provided through a FARA secondee. The Secretariat's staffing complement is expected to increase over time with the recruitment of a permanent Procurement Officer, a number of technical specialists: Farmer Empowerment Thematic Coordinator, Knowledge, Information and Communication Thematic Coordinator, Capacity Building Thematic Coordinator; Finance Manager (should the level of responsibility increase), Internal Auditor and Legal Officer. Funding for staff are expected to be split between the MDTF and other project or partner funds. The anticipated number of regionally recruited staff at full staffing levels to be paid for under the MDTF include the Executive Director, Program & Grants Manager, the four thematic coordinators, M&E specialist, Internal Audit, Finance Manager, Finance officer, HR & Administration Manager, and Procurement officer. Additional locally recruited staff paid under the MDTF will include a complement of administrative and finance assistants and a legal officer. Downward adjustments to staff size will be made based on funding committed to the MDTF if required.

Figure 3.1: Organogram of the CCARDESA Secretariat



6. The Secretariat is divided into six main functions. The major roles and responsibilities of each function are as follows:

- **Program and Grants Management Department:** This function is responsible for identification of funding opportunities. It also deals with development of concept notes and full project proposals with grantee institutions and coordinate submissions to the Technical Support Group (TSG) and Project Approval Committee (PAC). Overall, it oversees all grants management and administration, including grant agreements.

- **Research and Advisory Thematic Coordination Section:** This unit operates under the Program and Grants Management Department and deals with promotion of agricultural sector transformation in the region. Key responsibilities entail coordinating the performance of agricultural research and advisory services projects as well as developing initiatives for investment, concept notes, conducting relevant training; analysis and sharing lessons and experiences in agricultural R&D systems in the region.
- **Monitoring and Evaluation Section:** The section is responsible for providing managers at all levels with information and advice on how to measure progress of the Secretariat activities. It is also responsible for monitoring and evaluation of sub projects activities.
- **Finance Management Department:** This department is responsible for overall administration and implementation of the Secretariat's financial operations, policies and procedures. It provides oversight of the management of finance through adherence of best international accounting principles as well as compliance with the terms and conditions of all financial agreements entered into by the Secretariat.
- **Procurement Management Unit:** This unit coordinates the Secretariat's procurement plans and implementing the procurement of goods and services in accordance with the Procurement Manual.
- **Human Resource and Administration Department:** This function manages implementation of the Secretariat's human resources and administration operations, policies and procedures. It is also charged with the responsibility of managing and assuring security of the Secretariat's physical assets and equipment as well as provision of logistics and protocol services.

7. **Governance and inclusion.** CCARDESA's governance mechanisms (Board and General Assembly) are explicitly designed to include the full range of stakeholders and have members representing civil society and beneficiary groups. This is intended to create an environment that promotes the involvement of stakeholders and accountability by CCARDESA to its ultimate beneficiaries. The MTOP is approved by stakeholders, but day-to-day operations are supervised at the level of the Board. Inclusion of stakeholders such as NGOs and small holder farmers' organizations will take place in carrying out specific research policy studies, and engaging them in advocacy work for changes to agricultural policy and the research agenda. Options for participatory monitoring of CCARDESA activities will be explored during implementation.

8. **Competitive and commissioned sub-grant system.** Implementation of CCARDESA's thematic programs will take place primarily through commissioned or competitive sub-grants. Management of this process will be carried out transparently and based on an agreed upon Sub-Grants Manual, which provides detailed procedures for management of grants. A final draft of the Sub-Grants Manual has been approved by the CCARDESA Board. A final version of the manual satisfactory to the World Bank will be a condition of disbursement for sub-grants.

9. Eligibility for sub-grants will be open to public and private R&D institutions throughout the SADC region that are legal entities and demonstrate capacity to receive and manage sub-project grant funds. Eligibility for sub-grants will be open to institutions operating within CCARDESA member states - public, private and civil society institutions active in R&D²². International partnerships are welcome as part of a consortium but sub-projects would be led by

²² See <http://www.asti.cgiar.org/countries> for an indicative list of agricultural R&D institutions active in each country covered by the review.

a NARS institution. The sub-grants application requires applicants to provide detailed description of the organization applying for grant funds and will be reviewed as part of the sub-grant appraisal process (described in more detail below). More restrictive eligibility requirements may be included in a specific call for proposals or in a commissioned grant scenario based on the objectives of the sub-grant (e.g. capacity building).

10. Competitive sub-grant projects will be selected following calls for research proposals, to be launched by the CCARDESA Secretariat. These calls will be published on the CCARDESA website and widely disseminated by any appropriate means. The main contribution of the grant system is to follow a stringent and effective selection process, thereby assigning scarce resources to the most technically sound and highest priority proposals, and to provide incentives to implementing agencies to make efficient use of such resources and achieve the most outputs as possible.

11. Calls for project proposals will be based on the identification of needs and research constraints within thematic programs. Each thematic program will undertake a process of in-depth priority setting involving a participatory study that will consist of consultations with key partners and stakeholders—both the private sector (industries, enterprises, processors, Producer Organizations, NGOs) and the public sector (extension services, research organisations), and analysis of research for development opportunities and potential partnership arrangements.

12. *Commissioned grants.* Commissioned grants will be used in situations where competitive grants are not considered to be the best funding mechanism or to support specific short term studies/work across the range of themes. Examples include exploratory work and identification of potential initiatives or programs or national and regional workshops and training events. Applications for grants will be restricted to short list of selected institutions with known specialist skills or expertise. The criteria for short listing will depend on the specialism required, such as knowledge of the subject matter or laboratory or other facilities/technology that the short-listed institution can provide. Competition among the short-listed institutions will however follow the same process as for the competitive grants. Where appropriate, the shortlisted institutions will be required to work with other institutions in developing the Concept Notes and the Full Proposals and in implementing the sub-project. This will contribute to building the capacity of weaker institutions and to transferring of skills.

13. In the exceptional cases where there is extremely limited capacity to work on a particular priority problem, grant-financed sub-projects could also be directly commissioned on a “sole source” basis to a single provider or consortium with a well-proven track record. Sole-source providers will be transparently selected and such sub-projects will still be subject to the normal appraisal and grant approval procedures.

14. *Project cycle for competitive and commissioned grants.* The project cycle includes three stages: formulation, evaluation and implementation. Responsibility for project formulation and quality of design will reside with the respective implementing agencies of the project proposals. Each part of the project cycle—the call for proposals, the selection of projects for funding, and their implementation—would be done in a public and open manner based on the guidelines and criteria detailed in the approved Sub-Grant Manual, in line with international standards.

15. Project proposals that are common to at least two countries and which could be executed by institutions in these countries will then be further developed by the respective partners and submitted to CCARDESA. CCARDESA will organize a peer review process for quality control

that will assess proposals based on the following criteria among others: (i) coherence with the CCARDESA MTOP; (ii) evidence of inter-institutional partnership; (iii) identification of the Project Coordinator and consortium; (iv) compliance with minimum technical and scientific quality standards; (v) potential for dissemination and replication across the sub-region; (vi) a plan for the dissemination and use of results; (vii) social and environmental standards that are consistent with the Environmental and Social Management Framework (ESMF); and (viii) compliance with minimum financial and budgeting standards. Sub-grant agreements will conform to World Bank procedures for fiduciary, environmental and social safeguards as well as the anti-corruption guidelines.

16. The first five sub-grant agreements approved by CCARDESA will be reviewed and receive a no-objection from the Bank prior to implementation. Any sub-grant awarded to an institution in Zimbabwe will also require a no objection from the Bank and specific funds flow arrangements to institutions in Zimbabwe will be adopted in line with World Bank practices currently in place. These measures will be described in detail in the Sub-Grant Manual.

17. The governance and management structure for sub-grants will include:

- (i) The Executive Director will be charged with governance, policy guidance and strategic oversight of the grant system. Together with the senior management of CCARDESA, the Executive Director will be responsible for (a) identifying service providers to respond to an expression of interest to implement sole-source contracts and (b) to approve project proposals for grant funding based on the criteria in CCARDESA Sub-Grant Manual;
- (ii) A TSG will be established to review, evaluate and grade technically and financially the project proposals submitted in response to Calls and IEs. The TSG will be a database of high profile experts of the respective CCARDESA Thematic Areas. Individual experts from the database will be hired on part-time basis as “consultants” by CCARDESA to support the work of the GMU in their particular areas of expertise; and
- (iii) A Grant Management Unit within CCARDESA, will be tasked to take responsibility for (a) grant system management, including overall planning, budgeting and financial management, (b) organizing and processing the Calls and IEs, (c) hiring of consultants to undertake approved studies and workshops, in accordance with procurement rules and procedures contained in the CCARDESA Procurement Manual, and (d) supervising the implementation of all approved grant-financed sub-projects, studies and workshops and overseeing their orderly completion. The GMU will comprise the Program and Grants Manager in CCARDESA, the M&E Coordinator, and Thematic Coordinators who are expected to lead the preparation of Calls or IEs in their areas of expertise, and to identify specific studies and workshops under their Thematic Areas. The GMU will also source expertise in crops, livestock, NRM and economics as necessary from SADC-FANR directorate.

Figure 3.2: The Grant Screening, Evaluation, Selection and Launch Process

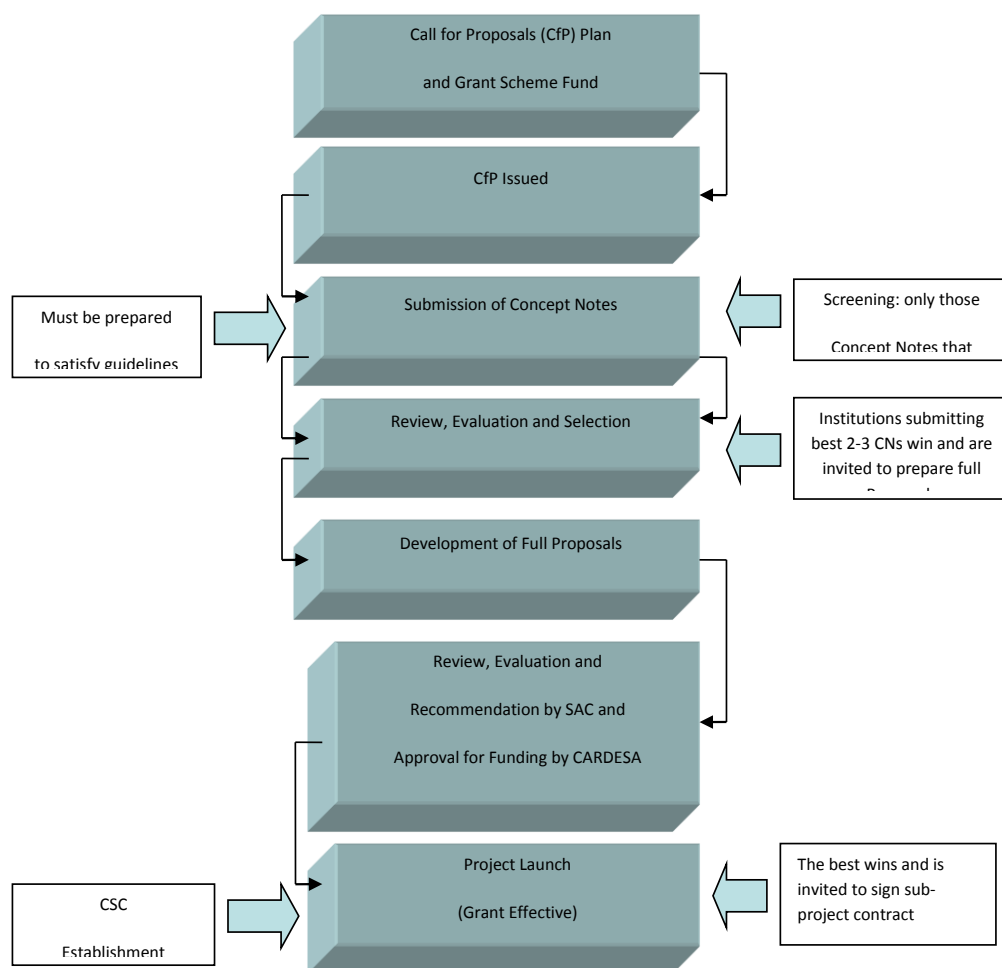


Table 3.1: CCARDESA Grant Systems, Operational Criteria and Eligibility

Grant System	Examples of use	Operational criteria	Eligibility
Competitive grants			
Support for the generation of new knowledge on specific regional priorities or lines of work across Thematic Areas	<ul style="list-style-type: none"> • Specific regional priority activities (research, extension, education, farmer empowerment) • Documenting examples of good practice with farmer empowerment, research for development, advisory services, education, ICT or communications 	<ul style="list-style-type: none"> • Should demonstrate partnerships and linkages internally or externally • Activity should be led by a SADC region based institution (public or private). CGIAR centers and other international institutions to partner • Sub-contracting allowed but lead institution is accountable • Awards based on proposals scrutinized by CCARDESA and approval by the Board • Grant used primarily for operational activities but some institutional support allowed • Cost sharing required • Can be awarded for multi-year activities but continued financing subject to annual reviews to assess performance against agreed criteria 	Open to the full range of CCARDESA stakeholders (farmers, private sector, public sector, international, regional and civil society institutions)
Commissioned grants			
<ul style="list-style-type: none"> • To support specific short term studies/work across the range of CCARDESA Thematic Areas • Used where competitive grants are not considered to be appropriate mechanism 	<ul style="list-style-type: none"> • Exploratory work and identification of potential initiatives or programs • National and regional workshops and training events 	<ul style="list-style-type: none"> • Awards based on proposals from short lists of selected institutions. Proposals scrutinized by CCARDESA and approval by the Board. • Cost sharing required 	Specific partner institutions
Institutional capacity building, nurturing and partnering grants			
<ul style="list-style-type: none"> • To strengthen capacity of institutions, partnerships and networks • To enable CCARDESA to complement the work of other institutions in the region, e.g. CGIAR, AGRA 	<ul style="list-style-type: none"> • Support to networks to contribute to CCARDESA activities • Funds for outsourcing management of activities to other regional institutions • Support to institutions to facilitate their participation in a specific partnership activity (a type of nurturing 	<ul style="list-style-type: none"> • Must support a regional activity (can support certain national activities with potential regional benefit) • Should demonstrate regional partnerships and linkages • Cost sharing • Renewable subject to annual reviews to assess performance against agreed criteria • Nurturing participating weak institutions 	Open to the full range of CCARDESA stakeholders

Grant System	Examples of use	Operational criteria	Eligibility
	grant/seed money) <ul style="list-style-type: none"> • Staff exchanges (visiting experts, scientists) 		
Innovation grant			
<ul style="list-style-type: none"> • Testing new approaches and methodologies at national level with potential for eventual scaling up and scaling out • To support studies on national policy reforms and policy advocacy 	<ul style="list-style-type: none"> • Supports for national systems in piloting innovations • Support for national systems in taking the first steps in implementing institutional and policy reforms Support for “Rapid results activities” which can show quick success 	<ul style="list-style-type: none"> • Grants generally small and short term (12 – 18 months) • Grant activity should demonstrate or generate lessons for other countries in the region 	Open to the full range of CCARDESA stakeholders

Financial Management, Disbursements and Procurement

Financial Management and Disbursements

18. As part of the MDTF preparation process, the World Bank conducted an FM assessment of CCARDESA. The objective of the FM assessment was to determine whether the FM arrangements: (a) are capable of correctly and completely recording all transactions and balances relating to the Project; (b) will facilitate the preparation of regular, accurate, reliable and timely financial statements; (c) will safeguard the Project's entity assets; and (d) will be subjected to auditing arrangements acceptable to the World Bank.

19. The overall conclusion of the financial management assessment is the project's financial management has an overall rating of "Moderate." Financial management arrangements satisfy the World Bank's minimum requirements under the World Bank's policy and procedures on financial management, OP/BP 10.00.

Executive summary

20. In November 2012, the World Bank carried out the FM assessment for CCARDESA during the preparation of the APPSA project. The organization was still at a formative and conceptual stage. In November 2013, a follow-up FM review of CCARDESA was undertaken as part of the implementation support under APPSA and also to assess CCARDESA's capacity to manage a higher volume of accounting-related activities that is envisaged under the proposed MDTF. The review noted the internal control environment has not matured, as frequently happens with newly founded organizations. Some milestones were achieved, however, including the acquisition of the accounting software, the filling of some key positions (although the Finance Manager later resigned and was replaced), and the conducting of the first internal audit to assess the maturity of the internal control environment. To mitigate the risks that have been identified and to protect against others that may not yet have been identified, the project will disburse based on SOEs, and more frequent internal audits will be carried out to enhance the internal control environment.

21. The conclusion of the assessment is that the financial management arrangements meet the World Bank's minimum requirements under OP/BP10.00.

Budgeting arrangements

22. The CCARDESA Finance Officer will prepare AWP&Bs based on the approved operational plan for the MDTF and will be responsible for producing variance analysis reports comparing planned to actual expenditures on a monthly and quarterly basis, as described in the CCARDESA FM manual. The budgets will be prepared and monitored using the Oracle-based system. Periodic variance analysis will enable the timely identification of deviations from the budget. These reports will inform the IFRs that will be submitted to the World Bank on a quarterly basis.

Accounting arrangements

23. The project will use the Oracle accounting system to record and report on uses of funds. The system was recently installed, and the Finance Officer is working on the customization. However this is a reliable system to account for the use of funds. CCARDESA's accounting procedures are outlined in the organization's policies and procedures, which were approved by the Board in May 2012. A review of the policies and procedures concluded that they are adequate to manage the project.

Staffing

24. CCARDESA's organizational structure calls for a Finance Manager, Finance Officer and Finance Assistant. Currently the Finance Officer position is filled, and CCARDESA expects to re-assess the need to fill the Finance Manager position over the course of 2014. Current staffing is considered adequate. CCARDESA's Finance Officer will be responsible for preparing the accounts for utilization of MDTF resources. The Finance Officer will be assisted by the Finance Assistant.

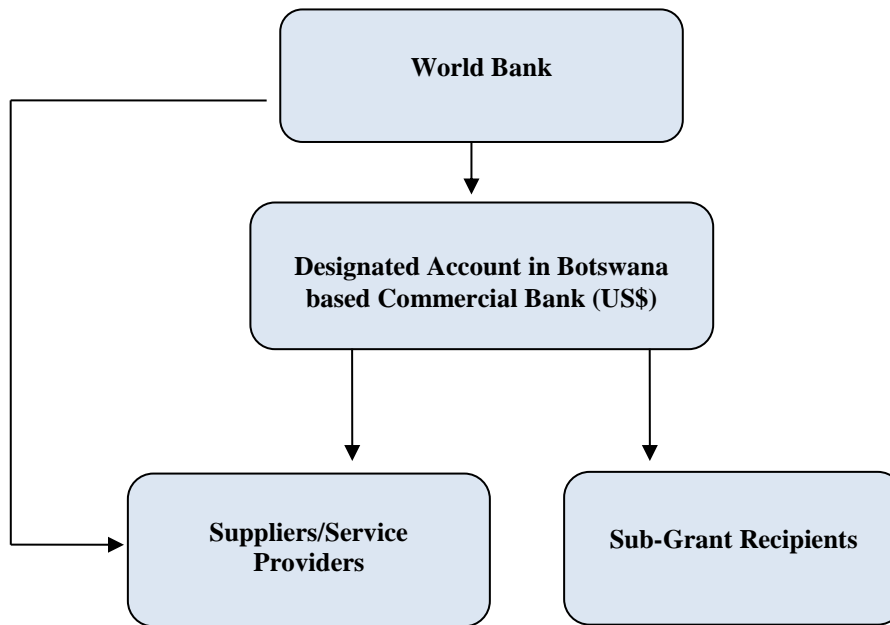
Internal control and internal auditing arrangements

25. The project will use the organization's accounting procedures and policies to manage project funds. The policies were reviewed during the AAPSA preparation and found to be adequate. In November 2013, the World Bank carried out a follow-up implementation support of the AAPSA project and reviewed the internal audit report for CCARDESA. The review noted serious lapses in the implementation of the approved policies. To mitigate the risk, under the MDTF, more frequent internal audit reviews are being proposed along with the possibility of establishing an internal audit unit.

Funds flow and disbursement arrangements

26. CCARDESA will be required to open a Designated Account (DA) in US\$ at a commercial bank to receive the MDTF grant funds from the World Bank. Funds in the DA will be used to finance eligible activities of all the components of the project.

Figure 3.3: Funds Flow



Disbursement arrangements

27. Once the Grant Agreement becomes effective, an initial advance will be made into the DA at the request of the client. The initial advance will be the estimated cash requirements needed to meet project expenditure for the first 6 months. Further disbursements of MDTF funds will be done based on withdrawal applications supported by expenditure forecasts for the ensuing six months. The project will document eligible expenditures by submitting Statements of Expenditure (SOEs) together with withdrawal applications. Other methods of disbursements will include reimbursement, direct payment, and use of special commitment (e.g., letters of credit).

28. For larger sub-grants (for which CCARDESA will establish thresholds), funds will be advanced on the basis of milestones reached as reflected in contracts between CCARDESA and the sub-grant beneficiary. Verification of milestones will be done prior to the disbursement of the next advance, including supporting documentation evidencing that a significant percentage of the previous advance has been accounted for. For small sub-grants, funds may be advanced on a one time basis, provided that adequate monitoring and evaluation mechanisms are in place, as spelt out in the Sub-Grant Manual.

Financial reporting arrangements

29. During implementation, CCARDESA will prepare IFRs to account for the funds received from the MDTF. IFRs will be submitted directly to the World Bank within 45 days of the end of each calendar quarter. CCARDESA will prepare annual accounts within three months after the end of the financial year, in accordance with accounting standards acceptable to the World Bank.

CCARDESA will be responsible for ensuring that its reports are audited and submitted to the World Bank within six months after the end of the financial year.

Auditing arrangements

30. The project funds will be audited by the organization's external auditor, and audit reports will be submitted to the World Bank within six months after the end of the fiscal year. The project activities will be disclosed by a note in the organization annual financial statements. The project will develop audit Terms of References (TORs) to extend the audit scope prior to commencement of the audit. Audit report together with management letter will be submitted to the World Bank six months after the end of each reporting year. Audit reports will be publically disclosed by the World Bank in accordance with the World Bank's disclosure policy.

Audit Report	Due Date
Continuing entity audited financial statements and management letter	Within six months after the close of the project.

31. FM supervision is generally conducted on the basis of the risk rating. Due to the perceived weak internal control environment, two supervision missions will be carried out per year. Other forms of supervision will include desk reviews of IFRs and audit reports.

32. **Arrangements for sub-grants to institutions in Zimbabwe.** Fiduciary supervision and funds flow arrangements for sub-grants to institutions located in Zimbabwe will be developed in line with World Bank practices in place at the time of the sub-grant award subject to consistency with any donor Administration Agreements and based on a fiduciary capacity assessment of the sub-project grantee undertaken by CCARDESA and reviewed by the Bank. Special arrangements – such as the channeling of funds through a third party – may be used if the capacity of the recipient institution is insufficient.

Conclusion of the assessment

33. The conclusion of the assessment is that the financial management arrangements in place meet the World Bank's minimum requirements under OP/BP10.00 and therefore are adequate to provide, with reasonable assurance, accurate and timely information on the use of the CCARDESA MDTF required by the World Bank. The overall FM residual risk rating is Moderate.

34. **Retroactive financing.** Retroactive financing of up to US\$600,000 may be made for eligible expenditures prior to the date of Grant signing but on or after January 1, 2014.

Procurement

35. All procurement under the MDTF will be carried out in accordance with applicable World Bank procurement guidelines for goods, works, and non-consulting services, as well as with World Bank procurement guidelines for consultants. In the case of goods, works and non-consulting services, the applicable guidelines are detailed in the publication "Guidelines: "Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011 ("Procurement Guidelines").

In the case of consultants, the applicable guidelines are detailed in Sections I and IV of the publication “Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers” dated January 2011.

36. A Procurement Risk Assessment of the CCARDESA Secretariat was conducted on November 13, 2012 during the preparation of APPSA. The Secretariat had 7 core staff on board, including a Procurement Officer. CCARDESA had also developed an acceptable Procurement Manual. In November 2013, a follow-up procurement review of CCARDESA was undertaken as part of the on-going implementation support under APPSA and also to assess CCARDESA’s procurement capacity to implement a higher volume of procurement activities that is envisaged under the proposed MDTF.

37. Key procurement issues relevant to the MDTF include the existing capacity gap as there is currently no Procurement Officer in place. In addition a recent internal audit of CCARDESA has revealed a need for increased oversight over procurement activities and strengthening the payment approval process. The previous Procurement Officer’s contract was terminated due to unsatisfactory performance. Immediate replacement of the Procurement Officer is seen as a necessary action to close this gap²³. In addition, strengthening procurement oversight through the operationalization of the procurement committee to promote more scrutiny over procurement decisions and strengthening of the payment approval process are recommendations coming out of the procurement review.

38. Proposed corrective measures to mitigate the overall risks and agreed with CCARDESA include (i) quick replacement of the Procurement Officer along with provision of training on World Bank’s procurement policies and procedures; (ii) strengthening procurement oversight through the operationalization of the procurement committee to promote more scrutiny over procurement decisions, verifying the cost of services through periodical independent reviews and establishing a credible vendor register that has been sourced by placing advertisements in the media; (iii) enhancing the payment approval process; and (iv) implementation of the updated Procurement Manual which captures recommendations from the internal audit on procurement activities.

39. The Risk Assessment gauged the procurement risk to be **High** due to the lack of procurement staff and the weakness in oversight as described above. Based on the Procurement Risk Assessment, the main risks and proposed risk mitigation measures are provided in Table 3.2 below including: (i) a dated covenant tied to the recruitment of a Procurement Officer with terms of reference, qualifications, and experience acceptable to the World Bank, and (ii) a dated covenant linked to operationalization of the above mentioned procurement oversight measures. The dated covenants will be included in the CCARDESA MDTF Grant Agreement.

Table 3.2: Summary Assessment of Capacity, Risk and Mitigation

Issues	Risks	Mitigation Measures	By When
Inadequate capacity	Recruitment of Procurement Officer	Dated Covenant	Six months after Grant Effectiveness
	Limited adherence to World Bank	Training of key CCARDESA staff on World Bank Procurement and Consultant Selection Methods and	Upon availability

²³An assigned Procurement Specialist, with qualifications satisfactory to the World Bank, has been seconded from FARA to provide interim support.

Issues	Risks	Mitigation Measures	By When
	Procurement and Consultant Selection Guidelines	Procedures Strengthening of procurement systems at CCARDESA Periodic revision of Procurement Manual	of trainer(s) Continuous follow-up
	Weak oversight over procurement	Strengthening procurement oversight through the operationalization of a procurement committee to promote more scrutiny over procurement decisions, verifying the cost of services through periodical independent reviews and establishing a credible vendor register that has been sourced by placing advertisements in the media	Three months after Grant effectiveness

Procurement plan

40. CCARDESA has developed a procurement plan for the first 18 months of MDTF implementation. The World Bank has reviewed the revised plan dated April 2014 and has provided its no-objection. The procurement plan will be updated as required and at least once a year throughout the life of the grant.

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

(Based in Gaborone, Botswana)

Abbreviated Procurement Plan (January 1, 2014 – December 31, 2014)

CCARDESA Multi Donor Trust Fund (P113629)

(Updated April 2014)

I. GENERAL

1. Project information: Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) based in Gaborone, Botswana.
At the regional level through CCARDESA, the program will finance regional facilitation activities including the following:
(i) Regional planning, monitoring and evaluation activities needed to establish and monitor regional collaborative activities; and
(ii) Regional exchange of information, knowledge and technologies, development of collaborative Research sub-projects as well as facilitating peer review and quality control
2. Bank's approval Date of the procurement Plan:
3. Date of General Procurement Notice:
4. Period covered by this procurement plan: 18 months (Jan 2014 – June 2015)

II. Goods and Works and non-consulting services.

1. **Prior Review Threshold:** Procurement Decisions subject to Prior Review by the Bank as stated in Appendix 1 to the Guidelines for Procurement – (January 2011 version)

	Procurement Method	Procurement Method Thresholds (US\$)	Prior Review Threshold (US\$)
1.	ICB and LIB (Goods)	1,000,000 and above	500,000 and above and as per procurement plan
2.	NCB (Goods)	100,000 and below 1,000,000	As per procurement plan
3.	ICB (Works)	5,000,000 and above	500,000 and above and as per procurement plan
4.	NCB (Works)	Above 200,000 and below 5, 000,000	As per procurement plan
5.	Shopping (Goods)	100,000 and below	As per procurement plan
6.	Shopping (Works)	200,000 and below	As per procurement plan
7.	Direct Contracting	1.00 and Above	All Contracts

2. **Prequalification.** N/A_____.

3. **Proposed Procedures for CDD Components (as per paragraph. 3.19 of the Guidelines):** N/A

4. **Reference to CCARDESA Procurement Manual:** The CCARDESA procurement manual will be part of the PIM. It will be used by the procurement team to guide implementation of procurement activities under the project.

5. **Any Other Special Procurement Arrangements:** As per the 2013 revised thresholds for the Africa Region, Shopping may be used for motor vehicle procurements of up to US\$500,000.

6. **Procurement Packages with Methods and Time Schedule**

A. GOODS

S/N	Description*	Package Number	Lot Number	Estimated Amount in US\$	Procurement Method	Pre- or Post- Qualification	Prior or Post Review
A. THEMATIC 3 : KNOWLEDGE, INFORMATION AND COMMUNICATION							
1	Translate & print relevant information & publication in local language	TA3/1/2014	N/A	15,000.00	Shopping	Post	Post
B. THEMATIC 5 : ESTABLISHMENT & STRENGTHENING OF CCARDESA AS AN EFFECTIVE SRO							
2	Procurement of 3 vehicles	TA5/1/2014	N/A	180,000.00	Shopping	Post	Prior
3	Office equipment (desktops, laptops, digital camera, overhead projector, video camera, guillotine, external hard drives, laminating machines, printers, fax machine, switch board, cordless phone, etc.	TA5/2/2014	N/A	50,000.00	Shopping	Post	Post
4	Conferencing equipment	TA5/2/2014	N/A	50,000.00	Shopping	Post	Post

	Lumped activities						
5	Lumped printing for 2014 (various contracts)	CCARDESA/M DTF/LUMPED PRINTING/2014	N/A	100,000.00	Shopping (various contracts)	Post	Post
C. CCARDESA GENERAL ASSEMBLY							
6	Printing of manuals and GA materials	GA/PRINT/2014	N/A	2,154.00	Shopping	Post	Post
7	Procurement of Conference Materials (bags, name tags, memory sticks)	GA/CM/2014	N/A	4,000.00	Shopping	Post	Post
8	Supply of air tickets for the GA (92 persons)	GA/AT/2014	N/A	51,664.00	Shopping	Post	Post
	Total			452,818.00			

B. WORKS

S/N	Description*	Package Number	Lot Number	Lumpsum or Bill of Quantities	Procurement Method	Estimated Amount in US \$	Pre-or Post-Qualification	Prior or Post Review
1	Construction of a parking shelter	CS/1/2014	N/A	LS	Shopping	30,000.00	Post	Post

III. Selection of Consultants

- Prior Review Threshold:** Selection decisions subject to Prior Review by Bank as stated in Appendix 1 to the Guidelines Selection and Employment of Consultants - (January 2011 version):

	Selection Method	Selection Method Threshold (US\$)	Prior Review Threshold
1.	QCBS (firms)	300,000 and above	All contracts
2.	Individual consultants	N/A	Above 100,000 and as per procurement plan
3	LCS/CQS/QBS	300,000 and below	Above 200,000 and as per procurement plan
4	Single Sourcing (firm/individual)	1.00 and above	All contracts

- Short list comprising entirely of national consultants:** Short list of consultants for services, estimated to cost less than US\$300,000.00 equivalent per contract, may comprise entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.
- Any Other Special Selection Arrangements:** N/A
- Consultancy Assignments with Selection Methods and Time Schedule**

B. Consultancy Services

	Description*	Selection Method	Lumpsum or Time-Based	Estimated Amount in US\$	Prior/Post Review
A	THEMATIC 1: FARMER EMPOWERMENT AND MARKET ACCESS				
1	1.1.1/2014: Consultants to identify and document the available technologies in the region with a potential for impact and outscaling	IC	LS	80,000.00	Prior
2	1.1.3/2014: Consultant to provide technical assistance to SADC in the development of guidelines for handling Genetically Modified Organisms (GMOs) in the SADC region	IC	LS	40,000.00	Post
B	THEMATIC 3: KNOWLEDGE, INFORMATION AND COMMUNICATION				
3	3.1.2/2014: Consultant to design and implement a self-archiving system for Southern African Agric. Researchers	IC	LS	15,000	Post
4	3.1.3/2014: Consultant to develop user friendly website and implement an intranet system for CCARDESA Secretariat	IC	LS	20,000	Post
5	3.2.2/2014: Consultant to facilitate consultative meetings with NARS and establishment of regional database portal for information sharing and joint planning	IC	LS	10,000	Post
C	THEMATIC 5: ESTABLISHMENT AND STRENGTHENING OF CCARDESA AS AN EFFECTIVE SRO				
6	5.1.6a / 2014:Recruit staff for the CCARDESA Secretariat (Thematic Coordinator - 1)	IC	Time-Based	17,000	Post
7	5.1.6b / 2014:Recruit staff for the CCARDESA Secretariat (Thematic Coordinator - 2)	IC	Time-Based	17,000	Post
8	5.1.6c / 2014:Recruit staff for the CCARDESA Secretariat (Thematic Coordinator - 3)	IC	Time-Based	17,000	Post
9	5.1.6 d/ 2014:Recruit staff for the at CCARDESA Secretariat (Internal Auditor)	IC	Time-Based	17,000	Post
10	AUD/2014 - 2015: Conduct external Audit of the CCARDESA secretariat from 2014-2015	CQS	LS	100,000	Prior
11	5.2.2 / 2014: Develop communication strategy and foresight/visioning for CCARDESA	IC	LS	60,000.00	Prior
D	CCARDESA GENERAL ASSEMBLY				
12	GA/IS/F1/2014: Provision of Interpretation Services – French	IC	LS	3,422.00	Post
13	GA/IS/F2/2014: Provision of Interpretation Services - French	IC	LS	3,422.00	Post
14	GA/IS/P1/2014: Provision of Interpretation Services - Portuguese	IC	LS	3,422.00	Post

	Description*	Selection Method	Lumpsum or Time-Based	Estimated Amount in US\$	Prior/Post Review
	GA/IS/P2/2014: Provision of Interpretation Services – Portuguese	IC	LS	3,422.00	Post
16	Consultant to Facilitate the GA meetings	IC	LS	3,822.00	Post
	Total			410,510.00	

Note: **QCBS:** Quality and Cost Based Selection
SSS: Single Source Selection
IC: Individual Consultant
SBCQ: Selection Based on Consultant's Qualification
LCS: Least Cost Selection

IV. Works, goods, services and non-consultant services under Competitive Grant Program under Component 1

1 Ref. No.	2 Description of Assignment	3 Estimated Cost (US\$)	4 Selection Method	5 Review by Bank Prior/Post	6 Expected Proposals Submission Date	7 Comments
1	Works, goods, services and non-consultant services under Competitive Grant Program	500,000 (approx. 5 sub-grants)	Commercial Practices / Community Participation in Procurement procedures	Prior Review	April, 2014	First 5 sub-grants or any sub-grant to an entity in a country in arrears to the World Bank

V. Implementing Agency Capacity Building Activities with Time Schedule

1. In this section the agreed Capacity Building Activities (some items could be from CPAR recommendation) are listed with time schedule

No	Description	Frequency of activity	Estimated Amount	Duration	Start Date	Comments
	Thematic 1: Farmer Empowerment and Market Access					
1	Support information sharing and capacity building for outscaling of conservation agriculture	1	50,000	9 months	1-Feb-14	meeting will be convened as required
2	Institutionalization of Innovation Platforms as a means to empower farmers to access markets	1	30,000	12 months	1-Mar-14	meeting will be convened as required
3	Empower farmers through access of improved seed varieties (legumes, maize and horticultural)	3	45,000	12 months	1-Mar-14	meeting will be convened as required
	Thematic 2: Technology Generation & Demand Driven Advisory Services					
4	Convene meeting of TAC to review Concept Notes	1	30,000	12 months	1-Apr-14	meeting will be convened as required

No	Description	Frequency of activity	Estimated Amount	Duration	Start Date	Comments
5	Convene meeting of TAC to review full proposals of projects	1	40,000	12 months	1-Apr-14	meeting will be convened as required
6	Conduct 2 training sessions on writing research proposals and scientific papers	2	20,000	12 months	1-Apr-14	meeting will be convened as required
Thematic 3: Knowledge, Information and Communication						
7	Conduct Regional capacity strengthening workshop on agricultural information management standards	1	60,000	6 months	1-Jun-14	
8	Implement a self-archiving system for Southern African Agric. Researchers	1	15,000	6 months	1-Feb-14	
9	Conduct consultative meetings with NARS and establishment of regional database portal for information sharing and joint planning	2	50,000	6 months	1-Feb-14	
Thematic 4: Institutional Strengthening and Capacity						
10	Support the delivery of two regional joint meetings with strategic partners (RUFORUM and ACT) as well as research project management and data handling	2	60,000	6 months	1-Mar-14	ACT meeting to be held in March while RUFORUM meeting to be held in July 2014
11	Hold consultative meetings and provide support to at least 3 agricultural research, extension, or/and training networks in the region	2	40,000	12 months	1-Apr-14	meeting will be convened as required
Total			440,000			

1. Note on capacity building, training and workshops: All trainings will be based on agreed training plan that will be prepared by Centre for Coordination of Agriculture Research and Development for Southern Africa (CCARDESA) located in Gaborone, Botswana and approved by the Bank and will include at the least the justification of the training identified and the capacity gap, the intended trainees, the name of the training provider, the date and the eventual cost of training. After the training, the beneficiaries will be requested to submit a brief report indicating what skill have been acquired and how these skills will contribute to enhance his performance and contribute to the attainment of the project objective. The training plan will be prepared and submitted once a year and updated as required.
2. Operating costs

For this project, the Bank has agreed with CCARDESA located in Gaborone, Botswana that the procurement methods for works, goods and non-consulting services as described in the *Procurement Guidelines* do not have to be followed for payments made for operating costs arising from the implementation of the project. Instead, the Bank has assessed CCARDESA's procurement procedures for these expenditures (during appraisal) and agrees that these procedures are adequate for procuring items for operating costs. The operating costs constitute recurrent costs (excluding purchase of motor vehicles, computers etc.) and typically include staff salaries, equipment rental and maintenance, vehicle operating costs, maintenance and repair, office rental and maintenance, office materials and supplies, utility costs (including electricity, water and gas) communications (including telephone and internet charges) equipment rent, operation and maintenance and cost of banking services (bank charges), travel cost and transport of the staff associated with project implementation. The

Project Appraisal Document (PAD) and the Grant Agreement will include a list of the eligible items to be covered under the project. These items will be procured using the implementing CCARDESA's administrative procedures, which have been reviewed and found acceptable to the Bank. Contracts for these items should not be included in the procurement plan.

Procurement arrangements

Works

41. Works to be procured under this project are estimated in aggregate at US\$30,000. This will include rehabilitation of existing facilities. The procurement of works will be done using the World Bank's SBDs for all procurement under ICB and NCB as appropriate. Direct Contracting may be used when competition is not advantageous with the World Bank's prior review and approval. Pre-qualification of contractors is not envisaged under this project as only minor works are expected to be carried out.

Goods

42. Goods to be procured under this project are estimated in aggregate at US\$300,000. The procurement of goods will be done using the World Bank's SBDs for all procurement under ICB and NCB as appropriate. UN Agencies and direct contracting may also be considered with the World Bank's prior review and approval.

Procurement of Services (other than consultants' services)

43. Services (other than consultants' services) to be procured under the project estimated in aggregate at US\$100,000 will include printing, services for contracts for installation and technical support of telecommunication and computerized systems and public awareness campaigns among others. The project will use the World Bank's SBDs for both ICB and NCB as appropriate.

Commercial Practices

44. Procurement of goods, works, services and consultant services in respect to sub-grants financed under component 1 may where appropriate follow well-established prudent and private sector procurement methods or commercial practices that shall be acceptable to the Bank. These commercial practices will be explained in detail in the Sub-Grant Manual to be reviewed and approved by the Bank and should include adequate mitigation and control measures against fraudulent and corruption. Consideration will also be given whenever practical to the use of competitive methods as outlined in the Banks Procurement and Consultant Selection guidelines. The management of the sub-grants will be based on detailed procedures stated in the Sub-Grant Manual acceptable to the Bank.

Community Participation in Procurement

45. Procurement of goods, works and services under the Grant Program where appropriate may follow methods that entail Community Participation in Procurement that shall be acceptable to the Bank. These methods for Community Participation in Procurement will be explained in detail in the Sub-Grant Manual for the project to be reviewed and approved by the Bank and should include adequate mitigation and control measures against fraudulent and corruption and must ensure efficiency and value for money. Consideration will also be given whenever practical to the use of competitive methods as outlined in the Banks Procurement and Consultant Selection guidelines. The management of the sub-grants will be based on detailed procedures stated in the Sub-Grant Manual acceptable to the Bank.

Consulting services

46. Consultants' services required for firms and individuals are estimated in aggregate at US\$ 3.7 million to cover consultancies for: (a) Specialist Technical Assistance support to the project; (b) technical reviews and evaluations; (c) subsector studies; (d) training module development; (e) surveys; (f) evaluations; and (g) project management services among others.

47. **Training.** This category would cover all costs related to the carrying out of study tours, training courses and workshops, i.e., hiring of venues and related expenses, stationery, and resources required to deliver the workshops as well as costs associated with financing the participation of community organization in short-courses, seminars and conferences including associated per diem and travel costs. Training projects would be part of the Annual Work Plan and Budget and will be included in the procurement plan. Prior review of training plans, including proposed budget, agenda, participants, location of training and other relevant details, will be required only on annual basis and include transportation costs and per diem of trainers and trainees, workshops, rental of training facilities and acquisition of training equipment and material needed for the implementation and supervision of the Project.

48. **Operating Costs.** Incremental operating costs include expenditures for maintaining equipment and vehicles, fuel, office supplies, utilities, consumables, staff salaries, allowable travel per diems and, allowable travel and accommodation expenses. These will be procured using the Recipient's administrative procedures, acceptable to the World Bank. The list of staff to be financed under the MDTF will include the following list of staff, to be updated and agreed with the Bank through the approval of annual work plans and is expected to include the following international staff (six of which are currently in place):

- Executive Director (currently in place)
- Program & Grants Manager (currently in place)
- 4 Thematic specialists, R&D (currently in place), Knowledge, Information & Communication, Capacity Building, Farmer Empowerment
- HR and Administration Manager (currently in place)
- Finance Manager
- M&E Specialist (currently in place)
- Internal Audit
- Procurement Officer
- Finance Officer (currently in place)

49. Additional nationally recruited staff will also be hired as needed and could include:

- National staff Legal Officer
- Grants – Assistant
- Documentation Assistant
- Finance Assistant (currently in place)
- PA (currently in place)
- Admin Assistant (currently in place)
- Office Orderly
- Driver
- Clerical staff/ Secretary (currently in place)

50. **Procurement Manual.** The procurement procedures and Documents to be used for procurement have been presented in the Procurement Manual in line with the guidelines of the World Bank. The Procurement Manual includes the institutional arrangements, regulatory framework for procurement, approval systems, activities to be financed, procurement and selection methods, thresholds, prior review and post reviews arrangements and provisions and filing and data management.

Environmental and Social (including safeguards)

51. There are no potential large-scale, significant or irreversible adverse environmental impacts associated with implementation of the CCARDESA MTOP; however, there are potential risks or negative impacts that could arise from implementation of sub-projects. In particular, these could include:

- Increased vulnerability to pests due to poor pest management or introduction of new cultivars;
- Localized agro-chemical soil and water pollution and reduction of water quality from agro-chemical use or poor handling of pesticides and disposal of empty chemical containers; and
- Unintended movement or transmission of plant varieties within or between countries as a result of field trials or other research activities.

52. Because specific environmental risks and associated management plans will be identified on during implementation as part of sub-project funding proposals, an environmental and social management framework (ESMF) and Pest Management Plan (PMP) has been developed. The ESMF and PMP establishes a negative list and set of policies to identify activities CCARDESA will not finance under any circumstances and process for screening sub-project proposals and the implementation of environmental and social management plans (ESMPs) and integrated pest management plans (IPMPs) where required. Proposals submitted for funding will be required to include an evaluation of potential environmental impacts, covering both those directly pertaining to the research to be undertaken (e.g., handling of agricultural chemicals), as well as those associated with the application on a larger scale of the results of research.

53. **CCARDESA ESMF negative list.** CCARDEDSA will not approve funding of research projects with any documented adverse environmental and social impact at the regional and national levels. The following activities, or activities with the following characteristics, cannot be financed by the CCARDESA:

- Activities inside protected areas or other critical natural habitats;
- Activities requiring involuntary resettlement of people or the loss of livelihoods;
- Dams;
- Activities involving logging in natural forests, or processing of timber other than from plantations; and
- Activities that would damage physical cultural property.

54. The ESMF and PMP also identifies specific restrictions with respect to use of pesticides.

55. **Screening Processes.** All project proposals (whether solicited or unsolicited) submitted to CCARDESA for funding have to undergo a review process to assess their merit in addressing regional problems and to produce regional solutions in a cost-effective manner. The reviews are undertaken either by CCARDESA's technical staff or by persons known to be specialists in the subject matter. The review reports are submitted to the CCARDESA Board of Directors which determines on the basis of the review recommendations whether or not to approve the funding.

56. Applications to CCARDESA must indicate whether any of the following activities will be financed or required in the course of implementing the proposal:

- Construction or civil works
- Voluntary resettlement
- Interference with critical natural habitats
- Commercial forestry exploitation
- Pest management

57. Wherever any of these activities is involved, the application must clearly describe the scale and scope of the activity, and a description of what measures will be adopted to ensure compliance with the policies laid out in the ESMF and PMP. Where significant potential environmental impacts may occur, the applicant should include an Environmental Impact Assessment. The proponent (s) will meet the cost of both the Environmental Impact Assessment (EIA) and mitigation measures.

58. CCARDESA, through the Office of the Programs and Grants Manager, will undertake the following:

- Review and clear winning proposals from partners for compliance with the ESMF and PMP before they are submitted to the Board of Directors for final approval for funding
- Request proponents of non-compliant proposals to revise them accordingly
- Review EIA reports and ensure that environmental mitigation measures recommended are of acceptable standards
- Monitor the implementation of the mitigation measures

Monitoring & Evaluation

59. CCARDESA's MTOP identifies a plan for developing and implementing a comprehensive M&E system. The system will focus on the M&E requirements of CCARDESA as an institution focused on Research and development (R&D) as well as on M&E requirements for sub-projects. CCARDESA's M&E system will generate information and data to meet a range of information needs and reporting requirements in relation to the Executive Board, the General Assembly, donors, and stakeholder organizations. In the case of the latter in particular, the CCARDESA M&E system will be linked to other M&E systems that either have been or are being developed to address elements of CAADP Pillar IV.

60. In line with the above, the M&E system will define the data collection process requirements—including reporting requirements (format, frequency and distribution)—in order to collect relevant information and data related to the performance of the five Thematic Areas and to provide feedback to improve performance and learning in terms of program/project relevance, efficiency and effectiveness; identifying weaknesses and providing solutions on the way forward; and providing lessons learned for replication of best practices. The M&E System will identify a learning processes need to be managed at national level and will serve as an important tool to provide information that will guide national programs.

61. Indicators used in the M&E system include both outcomes and results indicators as well as output and input level indicators. The M&E system will also use indicators of institutional capacity and reform, including measurements of improvements in financial systems, audit, and human resource management in order to assess performance of sub-projects and the entire Operational Plan. The M&E system will collect data that will be segregated in terms of gender.

62. Baseline studies will also be required for all sub-projects so as to (i) assess the situation prevailing prior to the implementation of a sub-project, and (ii) form the basis for M&E and impact assessment. Depending on the nature of the sub-project, baseline studies shall include all quantitative and qualitative variables which can be tracked and monitored as the sub-project progresses, and which can be used to assess the impact of, and evaluate the sub-project. The M&E system seeks methodologies that clearly identify the contributions of indirect activities to the achievement of outcomes. For example an Outcome Mapping exercise, a knowledge-based, user-driven methodology that can be adapted to evaluate on-going and completed activities. This evaluative tool is informed by the principles of full team participation and iterative learning, throughout the life span of a program.

63. ***Approach to Monitoring.*** The CCARDESA Secretariat will be responsible for monitoring of CCARDESA activities through annual work plans, field visits, systematic reporting during implementation on quarterly and annual basis (including M&E related reports/updates), and periodic stakeholders meetings. To this effect, Monitoring Plans will be prepared by the Secretariat. Decentralized monitoring of results will be carried out by stakeholder institutions implementing CCARDESA projects. This will ensure that monitoring is not necessarily the sole responsibility of a specialist unit running in parallel to implementation, but is mainstreamed within implementation and reporting processes of the respective institutions. Each sub-project will therefore be required to conduct a baseline study and prepare its results framework and the monitoring arrangements for capturing data on the results indicators and monitoring plan. These baseline studies and results frameworks for projects will contribute to the overall M&E and impact assessment framework. The M&E Unit at CCARDESA will be

responsible for compiling the overall results and monitoring of the Program's intermediate outcomes.

64. ***Approach to Evaluation.*** Evaluation of CCARDESA and the projects will make use of the SADC and CCARDESA commissioned priority setting studies and other studies and workshops in PY1 to develop a baseline. At specific points in time, purposely designed studies and reviews will be carried out to assess outcomes (both expected and unexpected), effectiveness, efficiency, long-term impact, relevance and sustainability of the interventions, and also to draw lessons for future interventions. Individual performance evaluation will be directly linked to project and organizational performance. Reviews will be carried out by projects as part of the annual planning process where progress towards achievement of objectives will be assessed and the need for corrective action during annual planning. Individual Monitoring and Evaluation Plans for monitoring and evaluation activities of its activities.

AFRICA
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Annex 4: Operational Risk Assessment Framework (ORAF)

Project Stakeholder Risks	Rating	Moderate		
Description: Some national level stakeholders may question regional focus of CCARDESA activities and the value of participation if seen not to benefit national systems or institutions.	Risk Management: Strong consultative processes will be built into identification and implementation of CCARDESA thematic activities and sub-grants. Consultation and accountability mechanisms built into priority setting and sub-project design would be reinforced during MTOP implementation.			
Unclear perceptions of CAARDESA’s regional subsidiarity and how regional benefits will be communicated	Including high level (PS level) participation in CCARDESA’s regional steering committee can support buy-in and raise awareness of the regional approach.			
Negative perceptions about biotechnology within agricultural research (as it relates to transgenic/ genetically modified organisms (GMO) crops) may affect CCARDESA MTOP implementation.	Research on transgenic crops is neither explicitly planned nor excluded. All MDTF financed activities to be firmly embedded with national bio-safety frameworks. All SADC countries are signatories to the Cartagena Protocol on Biosafety.			
	Resp: Bank/Client	Stage: Prep/Impl.	Due Date: 12/31/2018	Status: On-going
Implementing Agency Risks (including fiduciary)				
Capacity	Rating:	Substantial		
Description: Institutional capacity for regional coordination and implementation at the national and regional levels may limit effective regional collaboration.	Risk Management: Project design builds in coordination mechanisms, with CCARDESA assuming a role in facilitating regional coordination. Linkage to existing national operations intended to mitigate some capacity issues. Meetings will be convened by CCARDESA at which all Directors of Ag. Research will participate and address project design and implementation issues. Proactive dialogue is on-going to strengthen regional research collaboration with CGIAR centers mandated and/or located in the Southern Africa region.			
Fiduciary capacity within CCARDESA to manage an increased volume of funds.	Fiduciary capacity in CCARDESA to be improved through increased staff numbers (hiring of Procurement Officer and possible hiring of a Finance Manager) and provision of training. Fiduciary implementation support mission to be carried out biannually.			
Financial sustainability risk associated with future member state contributions	The system for Member State contributions being established is of the order of magnitude that could realistically be expected to be supported by member states (equivalent to about US\$150,000 per year per member state). A detailed M&E system has been developed to demonstrate impact to member states.			
	Resp: Client	Stage: Prep/Impl.	Due Date :12/31/2018	Status: On-going
Governance	Rating:	Moderate		
Description: Participating country R&D actors may not fully engage in or commit sufficient resources for collaborative activities.	Risk Management: Project design activities will pursue a highly consultative approach and competitive grant system will allow resources to flow to most qualified partnerships. Sub- grants to be vetted both for technical quality and institutional capacity. Calls for proposals could include a criterion to have less participating NARS in the consortium.			
	Resp: Client	Stage: Implementation	Due Date :12/31/2018	Status: Not yet due

Project Risks					
Design		Rating:	Moderate		
Description: Delay in production of technologies or technologies may not correspond to the needs of farmers. Outputs generated by sub-projects may remain national, rather than generating regional benefits.		Risk Management: Rigorous technical vetting of research proposals, including external scientific panel to increase likelihood of success in projects chosen. Project design includes a strong focus on regional dissemination activities. All funded research sub-projects must correspond to regional priorities.			
		Resp: Bank	Stage: Implementation	Due Date: 12/31/2018	Status: Not yet due
Social & Environmental		Rating:	Moderate		
Description: Potential risks could include impacts associated with use of agricultural chemicals but this is expected to be low intensity, minor, site specific (on research stations, limited number of farm fields). Research on transgenic crops is neither explicitly planned nor excluded.		Risk Management: ESMF to be used and CCARDESA will employ screening process for as part of the sub-project preparation process. ESMPs will be prepared where required.			
		Resp: Client	Stage: Prep/Impl.	Due Date :12/31/2018	Status: Not yet due
Program & Donor		Rating:	Moderate		
Description: Program highly dependent on continued support for CCARDESA outside the MDTF and individual national programs that support/underpin national systems.		Risk Management: MTOP includes a range of scenarios and programming will be developed slowly to allow for adjustment based on overall financing. MDTF support CCARDESA core operations will be monitored throughout implementation.			
		Resp: Client	Stage: Implementation	Due Date :12/31/2018	Status: Not yet due
Delivery Monitoring & Sustainability		Rating:	Moderate		
Description: Delay in developing and implementing strong pipeline of diverse stakeholder-driven sub-projects which respond to SADC R&D strategic priorities.		Risk Management: Priority setting process has informed Commodity focus of the MTOP and definition of quick wins; regular consultation on benefits and impact will be important. Quality of supervision of sub-projects to be monitored during MTOP implementation.			
		Resp: Client	Stage: Prep/Impl..	Due Date :12/31/2018	Status: Not yet due
Overall Implementation Risk Rating: Moderate					

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Annex 5: Implementation Support Plan

Strategy and Approach for Implementation Support

1. A detailed Implementation Support Plan (ISP) has been prepared to ensure timely and effective implementation of the MDTF over the five year implementation period. The aim is to ensure that implementation support activities provide effective protection against key risks and increase the likelihood of achieving the expected results.
2. The ISP focuses on the principal implementation risks identified in the ORAF (see Annex 4) and describes strategies and actions designed to mitigate those risks. The ISP also includes a detailed schedule summarizing the planned implementation support missions and indicating the effort and resource commitment by the World Bank that will be needed to ensure successful implementation of the MDTF.

Implementation Strategy (IS)

3. The IS approach for the CCARDESA MDTF entails close monitoring of activities being implemented in line with the MTOP, as well as scrutiny of governance and fiduciary issues.
4. **Project design:** A number of potential risks have been identified in the design of the MDTF such as the regional policy and institutional environment may change in ways that affect CCARDESA's ability to operate as a sub-regional institution, and delays in developing and implementing a strong pipeline of diverse stakeholder-driven sub-projects that respond to SADC R&D strategic priorities. Another risk is CCARDESA's institutional capacity for regional coordination and implementation at the national and regional level may limit effective regional collaboration. To help mitigate these risks, CCARDESA will engage in a strong consultation process with stakeholders to identify and implement thematic activities and sub-projects during MTOP implementation. In addition, the MDTF's project design will build in coordination mechanisms with CCARDESA assuming its role in facilitating regional coordination, including strengthening on-going research collaboration with CGIAR centers located in the SADC region.
5. **Implementation:** To ensure that MDTF resources are being used effectively in pursuit of the PDO, the World Bank will undertake biannual implementation support missions. In addition, a mid-term review (MTR) of the MDTF is envisaged over the five year implementation period of the MTOP.
6. **Governance:** Governance aspects of the MDTF will be monitored during biannual implementation support missions.
7. **M&E:** The World Bank will complement the M&E activities called for under the Project's implementation plan by carrying out biannual implementation support missions during which performance indicators will be closely monitored. Field visits will be made on the ground to verify the information appearing in regular M&E reports to ensure that the M&E system is generating a complete and accurate picture of performance.

8. **Environmental and social safeguards:** Potential risks or negative impacts include potentially increased use of fertilizers, herbicides and pesticides that could arise from implementation of sub-grants that support generation and dissemination of agricultural technologies. An ESMF has been developed, which outlines implementation procedures, relevant institutional roles, institutional arrangement and collaboration for successful implementation. The responsibility for environmental and social safeguards including impact monitoring and reporting for the respective country implementation agencies will also be elaborated in the specific ESMPs (if required) for each sub-grant. A PMP has been prepared as part of the ESMF. The PMP provides guidance on the use of pesticides and their management. Integrated Pest Management (IPM) procedures will be prepared for sub-grants as needed following the guidance provided in the PMP and prior to disbursement of any sub-grants. Budget provision for safeguards monitoring over the life of the MDTF will be provided.

9. **Procurement:** An updated procurement assessment of CCARDESA has been carried out. Procurement capacity risk for the MDTF is assessed as **High**. Dated covenants tied to the recruitment of a Procurement Officer with terms of reference, qualifications, and experience acceptable to the World Bank, and for the implementation of identified oversight measures will be included in the CCARDESA MDTF Grant Agreement. The World Bank will complement its support through regular bi-annual implementation support visits, prior and post-procurement reviews and providing training and capacity strengthening.

10. **Financial management:** An updated FM assessment was carried out. The FM risk is rated as **Moderate**. FM supervision is generally conducted on the basis of the risk rating. Due to the perceived weak internal control environment, two supervision missions will be carried out per year. Other forms of supervision will include desk reviews of IFRs and audit reports.

Table 5.1: Main focus of support to CCARDESA during implementation of the MDTF

Time	Focus	Skills Needed	Resource Estimate	Partner Role
First twelve months	MDTF effectiveness and withdrawal of initial deposit of the Designated Account	Lead Agriculture Services Specialist/ Economist (co-TTLs)	US\$200,000 + per year	
	R&D annual work planning and implementing call for proposals for making sub-grants	Senior Operations Officer ICT Specialist RM Officer Financial Management Specialist		
	Monitor and review safeguards implementation, particularly for sub-grants	Safeguards Specialist		
	Operationalize M&E framework and	M&E Specialist		

	arrangements for data collection and monitoring Initiate procurement activities	Procurement Specialist		
12-48 months	R&D annual work planning and implementing call for proposals for making sub-grants Undertake MTR after year 3	Lead Agriculture Services Specialist/ Economist (TTLs) Senior Operations Officer ICT Specialist Financial Management Specialist M&E Specialist Procurement Specialist Safeguards Specialist	US\$200,000 + per year	
48-60 months	R&D annual work planning and implementing call for proposals for making sub-grants Undertake final project evaluation	Lead Agriculture Services Specialist/ Economist (TTLs) Senior Operations Officer ICT Specialist Financial Management Specialist M&E Specialist Procurement Specialist Safeguards Specialist	US\$200,000 + per year	

Table 5.2: Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips (over 5 years)	Comments
Lead Agriculture Services Specialist (Co-TTL)		5 field visits	Washington-based
Economist (Co-TTL)		10 field visits	Washington-based
Senior Operations Officer		10 field visits	Washington-based
ICT Specialist		5 field visits	Washington-based
Financial Management		10 field visits	Country Office-based

Specialist			
Procurement Specialist		10 field visits	Country Office-based
M&E Specialist		10 field visits	
Safeguards Specialist		10 field visits	Country Office-based
Senior Disbursement Lawyer			Washington-based
Regional Lawyer			Washington-based
RM Officer			Washington-based

Table 5.3: Role of Other Partners

Name	Institution/Country	Role
SADC Region	CGIAR centers	Facilitate technology exchange, capacity development and training
Regional Institutions	COMESA SADC	Facilitate harmonized approach to movement of seed technology across the SADC countries
National institutions	NARS stakeholders	Facilitate scaling up and multiplication of

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Annex 6: Map

