



INFORMATION, COMMUNICATION AND KNOWLEDGE MANAGEMENT STRATEGY

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

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LIST OF ACRONYMS

ACCRA	Adaptation to Climate Change in Rural Areas in Southern Africa
ACT	African Conservation Tillage
AFAAS	African Forum for Agricultural Advisory Services
AR&D	Agricultural Research and Development
ASARECA	Agricultural Research in Eastern and Central Africa
BMZ	German Ministry for Economic Cooperation and Development
CBO	Community Based Organisations
CCARDESA	Centre for the Coordination of Agricultural Research and Development in Southern Africa
CGIAR	Consultative Group for International Agriculture Research
COMESA	Common Market for Eastern and Southern Africa
CTA	Technical Centre for Agriculture and Regional Cooperation
CSO	Civil Society Organisations
DoA	Deans of Agriculture
DoE	Director of Extension
DoR	Director of Research
EAC	East African Community
ECOWAS	Economic Community of West African States
FANR	Food, Agriculture and Natural Resources
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
FAO	Food and Agricultural Organisation of the United Nations
FARA	Forum for Agricultural Research in Africa
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
ICKM	Information, Communication and Knowledge Management
ICPs	International Cooperating Partners
ICT	Information and Communication Technologies
IFAD	International Fund for Agricultural Development
ITOCA	Information Training and Outreach Centre for Africa
KPA	Key Performance Area
KPs	Knowledge Products
MS	Member States
MTOP	Medium Term Operating Plan
NAIS	National Agricultural Information Services
NARS	National Agricultural Research Systems
NARES	National Agricultural Research and Extension Systems
NASA	National Aeronautical and Space Administration
NEPAD	New Partnership for Africa's Development
NFPs	National Focal Points
NGO	Non-Government Organisations
QMP	Quality Management Plans
PS	Permanent Secretaries
RISDP	Regional Indicative Strategic Development Plan

RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
SAAIKS	Southern African Agricultural Information and Knowledge System
SABRN	Southern African Bean Research Network
SACAU	Southern African Confederation of Agricultural Unions
SADC	Southern African Development Community
SARFAAS	Southern Africa Regional Forum for Agricultural Advisory Services
SOPs	Standard Operating Procedures
SRO	Sub-Regional Organisations
SWOT	Strengths, Weaknesses, Opportunities, and Threats
ToR	Terms of Reference
WB	World Bank

GLOSSARY OF TERMS

Knowledge Management	Systematic management of an organisation's knowledge assets for the purpose of creating value and meeting tactical and strategic requirements. It consists of the initiatives, processes, strategies and systems that sustain and enhance the storage, assessment, sharing, refinement, and creation of knowledge. https://www.knowledge-management-tools.net/knowledge-management-definition.html
Data	Facts and figures.
Information	Data that has been processed in a meaningful way.
Knowledge	Includes facts, information and skills acquired through experience or education.
Judgement	The ability to make considered decisions or come to sensible conclusions.
Wisdom	Having knowledge and judgement through experience.
Explicit Knowledge	The type of knowledge that is formalised and codified.
Tacit Knowledge	The type of knowledge that is intuitive, hard to define knowledge
Impact Pathways	Are the plausible way how research outputs will contribute to development outcomes.
Content Development	The process of researching, writing, gathering, organising and editing for website publication.
Content Curation	The process of sorting through large amounts of web content and selecting relevant or interesting content that is related to CCARDESA's objectives. This content is then presented in a meaningful and organised way to bring viewers' attention to it, presenting CCARDESA's views on why the content is interesting, relevant, or important.
Content Mobilisation	The process of accessing resources from content providers and utilising different communication mechanisms to present the content to meet organisational goals.
National Focal Points	People who have been nominated by the Ministry of Agriculture within their home country to be national champions of the CCARDESA ICKM System.
Community of Practice	Social members who interact with each other for the pursuit of common interests.
Social Media	Computer-mediated technologies that facilitate virtual communities and networks where members share information and ideas.
Knowledge Products	Publications developed for specific audiences, including policy briefs, guidelines, leaflets, videos, newsletters, radio programmes, etc.
Best practices	Procedures that has been show by research and experience to produce optimal results and that are established or proposed for widespread adoption.
Lessons learned	Learning gained through the process of performing an activity.
Success stories	Stories of people or projects that showcase some kind of achievement.
Training materials	Instructional materials that are developed to help share knowledge.
Technical reports	A document that describes the processes, methods, progress and/or results of technical research or implementation.
Policy briefs	Concise summary of a particular issue and recommendations that inform policy makers.
Manuals	A book that provides instructions or information on how to carry out a specific process.
Fact sheets	A paper that provides useful and essential information about a particular project or process.
Pamphlets	A small booklet that summarises useful and essential information about a particular project or

process.

Brochures

Similar to a pamphlet.

Videos

Integrated audio and visual compositions that are recorded.

Audio-clips

Sound that is collected or recorded.

Presentations

A speech or talk in which a product is presented to a group in person or through other media.

FOREWORD

In the Medium-Term Operational Plan (MTOP 2020-2024), the role of Information, Communication and Knowledge Management (ICKM) has been given prominence because of its relevance to the region. ICKM is a conduit for reaching the stakeholders with the outputs generated from different sources for different audiences. The information and knowledge produced need to be used at the correct level to contribute to agricultural production and food and nutrition security.

Dissemination of information and knowledge requires the full participation of stakeholders, such as NARES, Universities, Farmer organisations, Extension organisations, CG Centres and Development Partners has been underway. It is only through such wide and collective efforts that we can keep stakeholders informed about the products that are available and encourage them to use these products in the efforts towards contributing to food and nutrition security in the region.

As a regional broker of agricultural knowledge and information capable partners who generate, share and utilise regional agricultural information and knowledge through appropriate channels, this strategy provides a resurgent and stimulating base for the generation, dissemination and management of agricultural related information in the region. It supports the overall objectives and themes outlined in both the Strategic Plan and the Medium-Term Operational Plan of CCARDESA.

This strategy is expected to improve the delivery of service in the area of ICKM to the stakeholders of CCARDESA in the region. Its implementation will need even stronger partnerships at national regional and global levels. We believe that our partners will find it exciting and encouraging that this strategy has been produced at the right time to facilitate our efforts towards addressing the needs of the Southern African region.

Dr Cliff.S. Dlamini
CCARDESA Executive Director

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This strategy was developed in consultation with stakeholders, including CCARDESA information, communication and knowledge management (ICKM) focal point persons, extension, researchers, farmers and farmer organisations. The CCARDESA Secretariat is therefore very grateful to all its stakeholders for the support rendered during the development of this strategy. Thank you to all those who provided online feedback on the ICKM systems. The views expressed online were considered in developing this revised ICKM Strategy.

The Secretariat wishes to recognise and appreciate the technical and financial support provided by the German Ministry for Economic Cooperation and Development (BMZ), through the GIZ for the development of this ICKM Strategy.

CHAPTER ONE

1. BACKGROUND

1.1 Introduction

Information, Communication and Knowledge Management (ICKM) are integral part of the vision and mission of the Centre for Coordination of Agricultural Research and Development in Southern Africa (CCARDESA). Information refers to data that has been interpreted and expressed in a meaningful way. Communication is the effective transfer of knowledge and information from one point of supply to the point of need using various channels, including ICT tools and other forms of media. Knowledge encompasses strategic and applied research, statistical and data work, operational and field experiences and networking and partnerships (World Bank, 2008). It includes activities that generate and share information and expertise within and outside CCARDESA and its partners, which are mainly National Agricultural Research Services, the private sector, and development players.

Knowledge management approaches can assist to remedy the problem of communities that suffer from a shortage of information. Knowledge is a valuable resource that deserves to be consciously managed. The Knowledge Management includes the judgment and experience required to either serve a client or design a message that impacts people 's behaviour.

Knowledge management requires good conditions (Information technology, human resources, processes), the right means, right actions where people instinctively seek, share and use knowledge which eventually stimulate learning .

In this case, Information, Communication and Knowledge have to be managed in a manner that supports the core business of an organisation and improves the partnerships and development of the organisation. Such management has to take into consideration the explicit and tacit knowledge for the short and long-term benefit of an organisation. Cognizant of the benefits of the knowledge management component, CCARDESA strives to promote effective and efficient use of explicit (visible and tangible) and tacit (invisible and intangible) knowledge towards making informed decisions.

According to Nelson *et al.* (2009) there are 10 organisational elements that need to be addressed to ensure the effective implementation and maintenance of information and knowledge management within organisations. They include Information Architecture, Information Behaviour, Organizational Culture, Information Technology (IT) Practices, Information Management Processes, Knowledge Management Processes, People Management, Information Policy and Strategy, Information Politics, and Organizational Structures. These elements were explored to inform the development of the CCARDESA knowledge management strategy with an inbuilt implementation, monitoring and results framework and outlined roles of key actors.

One of the key thematic areas of CCARDESA as outlined in the Medium Term Operational Plan (MTOP) and long-term strategy is Information, Communication and Knowledge Management. The goal of the theme is to ensure access to knowledge

and information through various Information Communication Technologies (ICT), traditional and electronic media for researchers, extension agents, farmers and various stakeholders. To fulfil the mandate set under this theme, CCARDESA recognises the importance of generating, mobilising, sharing, communicating and applying the available knowledge.

This strategy focuses on the planned direction for a programme of work that will help strengthen and organise CCARDESA's ICKM capacity. It sets a basis for a well organised set of actions for mobilisation of knowledge resources for agricultural development in southern Africa, and communicating this information to a broad range of stakeholders across the region, thereby meeting the organisation mandate of being a broker of agricultural knowledge and information in the SADC region. In addition, the strategy is designed to support the other themes of the CCARDESA Strategy 2020-2029.

1.2 Institutional Organization

CCARDESA was established in 2010 with a mandate to coordinate the implementation of agricultural research and development (AR&D) in Southern Africa. The goal of CCARDESA is to sustainably reduce food insecurity and poverty in the region, as pronounced in SADC's key policy and Strategic document such as the Regional Agricultural Policy, and the Regional Indicative Strategic Development Plan (RISDP). Therefore, the activities of CCARDESA are guided by such documents, all of which express the developmental desires of the SADC countries. CCARDESA's broad objectives are as follows:

- i) Promote coordination and collaboration among National Agricultural Research and Extension Systems (NARES) and Farmer Organisations through regional and international cooperation;
- ii) Facilitate the exchange of information and technology among AR&D institutions;
- iii) Promote partnerships in the SADC region between public, private, civil society and international organisations in AR&D;
- iv) Improve agricultural technology generation, dissemination and adoption in the region through collective efforts, training and capacity building; and
- v) Mobilise human, financial and technological resources to implement demand-driven regional AR&D activities that will contribute to the strengthening of national-level institutions, research institutions and individuals.

In order to have a well organised approach to its programmes and fulfil its broad objectives, CCARDESA has developed a long-term strategy 2020-2029 (CCARDESA, 2020) in which it has explicitly defined its vision, mission and values. The long-term vision of CCARDESA is '*Sustainable agricultural growth and socio-economic development in SADC*'. This is supported by a mission statement which has been states as: '*To Set the regional research and development agenda, mobilise resources, foster collaboration and provide agricultural information and knowledge in*

the SADC. This strategy is informed by the CCARDESA Long Term Strategy, the Medium Term Operation Plan (MTO) 2021-2025, the draft, Information Communication and knowledge Management Strategy and the Roadmap for CCARDESA (CCARDESA 2016).

1.3 Strategic Context

The CCARDESA Long-term Strategy is the overarching framework which provides strategic direction on the work of CCARDESA. It was developed in a consultative manner and has taken into account the national, regional, continental and global frameworks which are part of the SADC Member States. It therefore responds to the desires of the SADC countries at different levels of cooperation and integration. The Strategy has been organised into the following six (6) thematic areas (Figure 1):

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

ICKM falls under Thematic Area 5: Knowledge and Information Management, Communication and Policy Support. The CCARDESA long-term Strategy has placed significant importance to ICKM by acknowledging CCARDESA's strategic position to serve the region as "a broker of knowledge and information, the main products of agricultural research for development, and act as an intermediary between research, extension and value chain actors, to ensure that the region successfully turns research results into use". The role of ICKM is also encapsulated in the organisation's vision and mission statements.

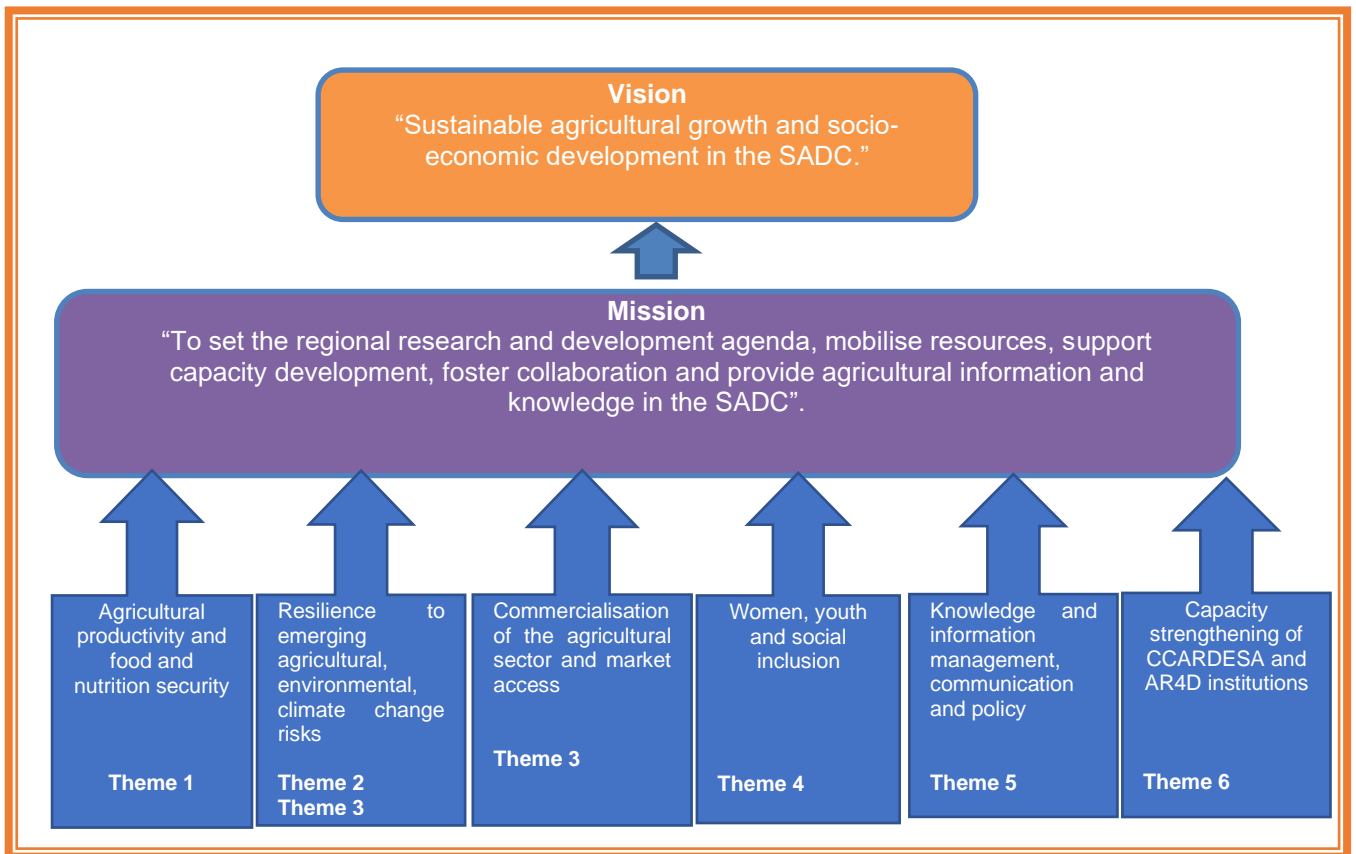


Figure 1 CCARDESA's Vision, Mission and Themes from the Long-term Strategic Plan (2020 – 2029).

CHAPTER TWO

2. SITUATION ANALYSIS OF INFORMATION, COMMUNICATION & KNOWLEDGE MANAGEMENT

2.1 Introduction

In 2013, CCARDESA developed a prototype ICKM System. This prototype was developed through a participatory process that included Member State engagements and a series of discussions with key partners at different levels. The process, therefore, began with a series of consultations with Partners, at national, regional and continental levels. Due consideration was given to the potential stakeholders to be served by CCARDESA, experiences from similar organisations, needs and alignment to the national priorities, complementarity with national and regional systems as well as other important issues relevant to ICKM.

One of the important tasks accomplished was the establishment of the status of Knowledge and Information Management in SADC countries, which provided a clear niche to be filled by CCARDESA and the value it would add to the management of information and knowledge in the SADC countries. The functionalities of a system that would meet the stakeholders' needs was defined.

This engagement resulted in developing the Southern African Agricultural Information Knowledge System, also commonly known as the SAAIKS, as well as the establishment of the CCARDESA ICKM Community of Practice (CoP). The SAAIKS provided a robust platform for knowledge sharing. It operates as a standalone platform within the ICKM, with a purpose of sharing agricultural knowledge and serving as a regional hub for agricultural research, extension information, and agricultural news. It is housed at (www.ccardesa.org/saaiks-knowledge-hub).

The SAAIKS had been populated with publications from within CCARDESA and the region. Social media had equally become operational by posting blog (news) items whenever information became available. CCARDESA was present on several social media platforms namely Facebook, YouTube, Twitter, Flickr, and LinkedIn. Number of followers of CCARDESA on social media platforms were growing significantly. CCARDESA also had an event blog that documents major events such as the General Assembly and Science week activities. Posts on Twitter and Facebook attracted people from different target audiences to the website.

The Dgroups were working well for CCARDESA with regular engagement and participation of SADC member states. There was ongoing engagement from stakeholders that saw a regular and active discussion on critical topics driven by CCARDESA or the user community itself. There was regular monitoring and evaluation of the operation of all the CCARDESA online platforms derived from goggle analytics and social media insights.

Despite the smooth operation of the CCARDESA platforms, it was discovered that there was no structure or schedule to the posts and no maintenance of aging content. The design of the website was sub-optimal, while social media presence

was equally uncoordinated, with infrequent updates of non-standards posts on Facebook and occasionally Twitter.

In 2013, CCARDESA noted the need to have a Strategy on ICKM to inform the direction of development of this important aspect of the organisation.

Therefore, in 2014, CCARDESA developed the Knowledge, Information and Communication Strategy and Roadmap with overall objective to address the information needs for different stakeholders, especially scientists, extension workers, farmers, and policymakers. The specific objectives were to:

- i) Identify needs, best practices (ICT policies, strategies, tools, network linkages) and opportunities in agriculture and other sectors best suited for specific needs;
- ii) Facilitate Capacity Building in the use of ICTs in the agricultural information systems by national and regional stakeholders;
- iii) Promote the use of ICTs, media channels, and interpersonal interactions to link different stakeholders, including use of education and learning, as well as empowering small-scale farmers to access markets and make informed decisions; and
- iv) Promote comprehensive and free access to agricultural information in the region.

The developed CCARDESA strategy and Roadmap intended to achieve the above objectives by ensuring that the demand for agricultural information and knowledge in the SADC region is fully met. While adequate in many ways, the draft ICKM strategy and Roadmap was very useful when CCARDESA conducted a detailed analysis of the ICKM Strengths, Weaknesses, Opportunities and Threats.

The situation in the region did not enable a speedy and smooth flow of agricultural information and knowledge due to the following key hindrances

- i) Lack of proper ICT infrastructure to facilitate communication among stakeholders as a result of sub-optimal attention and investment made into the building of information and knowledge management systems by member states
- ii) Limited information and knowledge exchange between stakeholders from the different member states due to disconnectedness of stakeholders resulting in limited collaboration and knowledge sharing among players in the same disciplines.
- iii) Where ICKM systems existed in various member states, these were not inter-operable and lacked uniformity in their approach to management of information and knowledge. In addition, the systems relied heavily on traditional methods of knowledge sharing (paper-based systems, oral systems etc.) thereby limiting the extent of outreach.

With these observations, it was clear that CCARDESA needed to respond by taking an active role in addressing these ICKM obstacles and critically documenting the

strengths, weaknesses, opportunities and threats. This would inform the strategies and actions to be adopted and implemented.

2.2 SWOT ANALYSIS

In 2018, CCARDESA decided to upgrade its ICKM system and started developing a new ICKM strategy to replace the 2016 draft strategy and Roadmap. The rationale of the upgrade was that the CCARDESA ICKM apparatus required further attention to transform it into a resilient, functioning, sustainable knowledge management hub that can supply research and extension stakeholders with much-needed information.

An organisational analysis was undertaken, focusing on reviewing the role of ICKM in the organisation and across the region. The outputs from the review fed into the development of the current strategy. This updated analysis examined the Strengths, Weaknesses, Opportunities and Threats facing CCARDESA's ICKM system.

2.2.1 Strengths

CCARDESA has many strengths that it rides on in carrying out its mandate as a regional knowledge broker of agricultural research and development. It acknowledges information management as a critical component for attaining comparative advantage in the corporate world. Knowledge, information, and communication are prioritised in the CCARDESA's Long Term Strategy. Currently, the CCARDESA ICKM system is housing many agriculture resources and knowledge products. In addition, CCARDESA has strong partnerships with other regional agricultural research and development organisations, including progressive Information and knowledge management and communication accolades which can be leveraged moving forward. Despite CCARDESA being a relatively young organisation, it has a strong, regionally recognised mandate to support ICKM in the SADC Member States, coupled with a well-developed network with regional NARES and universities willing to engage in ICKM innovation.

2.2.2 Weaknesses

There are a few weaknesses that the CCARDESA ICKM system has, such as differences in levels of involvement by the SADC Member States. This leads to inadequate updating of information on platforms by those members who are not fully involved. There has also been limited awareness of and access to the current repository, especially by extension staff. Insufficient funding to support all requirements for ICKM has hampered plans to avail all knowledge products in four official SADC languages. Over-dependence on donors and member states for funding is also a challenge that CCARDESA faces, including limited capacity to translate scientific content and information into user-friendly targeted knowledge products. The challenges of interoperability with other systems in the region and continent continue to confront the ICKM system.

2.2.3 Opportunities

There are several opportunities that the CCARDESA ICKM system can tap into to improve its coverage and organisation visibility. For example, strategic use of

traditional communication - radio, print, training workshops, farmer field schools and meetings – is prevalent due to limited internet access. CCARDESA also uses information, communication technologies (including mobile platforms) across the agricultural value chains – beyond researchers – to farm level (youth and women) via extension service providers. Social media usage is extensive in SADC and cheaper than voice communication due to mobile operator subsidies; hence CCARDESA can ride on this platform, including leveraging the member states knowledge and information sharing initiatives.

There has also been a huge volume of open-access information available from other sources, regionally and internationally, which can be exploited, coupled with growing interest in collaborating and participating in dialogues through platforms. CCARDESA also has more opportunities to partner with media institutions. Currently, it is one of the regional agricultural knowledge hubs that covers all SADC member states and has a comparative advantage of already existing political will for agricultural development and climate change.

2.2.4 Threats

CCARDESA is threatened by factors that could lead to the malfunctioning of the organisation if not checked and curtailed. There are prohibitive costs and inadequacy of regional internet services, which hamper the operations of CCARDESA. The region also experiences ICT procedural constraints and inadequate and inconsistent regional electric power supply in some countries. There is also a limited capacity of science communicators, information specialists & librarians to translate, repackage and disseminate knowledge products to various user groups/customers/clients. Furthermore, field-level extension service providers' low capacity to access and utilise electronic media and the internet is a threat to CCARDESA. This is coupled with the limited culture of sharing of information and knowledge within the Member States and between countries. The lack of interoperability of systems across the region, including the slow digitisation of legacy knowledge, is a key threat to CCARDESA. There has also been complete reliance upon voluntary contributions from Member States plus slow uptake of research outputs by agricultural extension services in the SADC region.

2.3 CCARDESA ICKM Landscape

Knowledge Management is defined as providing the right information to the right people at the right time and helping people create knowledge and share and act upon information in ways that will measurably improve performance (NASA, 2018). It is not easy to manage knowledge, but it is possible to create an environment for knowledge sharing to flourish. CCARDESA endeavors to manage the environment in which knowledge is created, discovered, captured, shared, distilled, validated, transferred, adopted, adapted, and applied.

To meet the requirements of knowledge management as defined above, CCARDESA embarked upon a transformation of its ICKM. Based upon the preliminary assessments undertaken of the cited challenges, it became clear that there was a need to upgrade and strengthen the capacity of the existing SAAIKS System. Since then, CCARDESA 's SAAIKS was improved to include a website and a separate knowledge hub that currently houses over 800 knowledge products. The upgraded website was relaunched in November 2018 and is now housed at ccardesa.org.

The above-proposed changes to ICKM at CCARDESA align with the conceptual approach for this new ICKM Strategy, which maps the three Knowledge Management elements against the 4Cs of Coordination, Communication, Curation and Content. Since revamping its website, there have been many positive activities that have happened at CCARDESA's information, communication & knowledge management unit. Listed below are some ways through which CCARDESA has been sharing agricultural research and development information with its stakeholders.

2.3.1 Functional & Up to Date Website

CCARDESA has an updated and functional website that is secure and reliable. It has strengthened the regional ICKM community of practice to support a unified web presence and content development processes to realise the opportunities provided by a strong network of partners. The website, housed at ccardesa.org, can now be viewed in the three official SADC languages which are English, French and Portuguese. It provides agricultural information, up-to-date news, opportunities and CCARDESA programmes.

2.3.2 The Southern Africa Agricultural Information Systems(SAAIKS)

The CCARDESA SAAIKS provides a platform for those interested in sharing relevant regional knowledge products while connecting researchers, extension professionals, communications officers, and policymakers. The SAAIKS houses over 840 knowledge products which include publications and curated content. The objectives of SAAIKS are

- i) Facilitate agricultural information and knowledge sharing among the SADC Member States and beyond;
- ii) Develop a regional agricultural database and resource for information; and
- iii) Share best practices for agricultural research and development across the SADC Region.

CCARDESA recently produced 24 knowledge products related to climate-smart agricultural and Climate Change Adaptation for Agriculture (CCAA) across four key value chains Maize, Rice, Sorghum, and Livestock as part of populating and growing its repository. Each Knowledge Product is provided in English, Portuguese, and French to ensure they are accessible across the SADC region. CCARDESA is

constantly producing various knowledge products from its programmes to boost the SAAIKS repository. The SAAIKS is easy to search for and allows CCARDESA to know how many people access it through a short questionnaire that enable users to rate the system. This aspect of the system provides for CCARDESA to monitor the usage of the system and know user satisfaction of the system.

2.3.3 CCARDESA CSA Mobile Learning Application

CCARDESA developed a Mobile Learning Application to share agricultural information through the extension services to farmers. It has the following features:

- i) Providing (filtered) access to the CCARDESA knowledge products on climate change adaptation in agriculture;
- ii) An interactive quiz to learn more about climate change and agriculture topics in a fun way;
- iii) A forum to allow users to discuss pertinent agricultural issues in the SADC Region;
- iv) A directory of registered users who can interact with each other

The realisation of the information gap between the extension and the farmers led to this innovative initiative. The CCARDESA mobile application is designed to work offline – only the discussion forum and user directory need the internet to update. People directories and discussions that were missed while offline automatically update once the phone is back online. The App comes with a small initial download of about 20 Mb and does not require much data as it utilises web services to deliver content to the App (approximately 200 kb). This is a significant achievement as heavy download requirements, or highly limited functionality would negatively impact usability, efficacy and uptake by stakeholders. The App was designed in a distributed content framework, which means that the App is dynamic.

The Mobile App can easily be downloaded on one's phone and is accessible at the google play store. It houses 67 CSA technical briefs addressing the key value chains, including maize, rice, sorghum, and livestock. These technical briefs inform the extensions information needs which they later relay to farmers. Additionally, the Mobile App has quizzes that provide responses and a discussion platform that enables farmers and extension to communicate any challenges they may encounter. The Mobile App is accessible for both Android and Apple users.

2.3.4 Social Media Platforms

CCARDESA has an active presence on Facebook, where it has a considerable presence of youth followers. It recently opened an Instagram page, which is also another communication tool meant to reach the diverse audiences that fall in the CCARDESA information networks.

CCARDESA also produces an email-based quarterly newsletter, which it shares with its stakeholders in the SADC region and the world. The newsletter is usually a summation of CCARDESA's news items or any critical information during a particular

quarter. Currently, over 1550 people receive the CCARDESA newsletter. Users can also subscribe to receive the newsletter at www.ccardesa.org.

2.3.5 The Discussion Groups (D-groups)

CCARDESA offers an email-based discussion group (D-Groups) for stakeholders to share the latest AR&D information. This forum allows over 4,000 experts from around the globe and within the SADC Region to share experiences, networking opportunities, provide solutions, research, and the latest agricultural trends. The forum also provides solutions through its specialised team of experts drawn from within the SADC region who discuss regional agricultural news and accesses knowledge accumulated in this community. The CCARDESA D-groups channels are extremely active elements of the ICKM system as it connects experts through discussion groups and has supported some networks conducting agricultural-related work.

2.4 Non-Electronic Knowledge Sharing Platforms

Traditional, non-digital forms of knowledge dissemination are also utilised by CCARDESA, specifically at conferences, workshops, training and other events. CCARDESA exhibition booths and digital and non-digital communication materials are produced to further foster the CCARDESA mandate of providing agricultural and research development information to SADC member states.

One form of traditional media that has been successfully exploited in agricultural extension across the African continent by other organisations are the community and national radio broadcasting. Although the internet and mobile phone access across the continent are growing, radios continue to be highly relevant as means of communication, with 76% of African farmers having access to radios (FRI, 2011). The importance of radio as a means of communication cannot be overstated, as farmers who may not have electricity, access to phones and maybe illiterate can still access information. CCARDESA foresees an opportunity to translate printed content into digital content in the near future.

2.4.1 Face to Face Knowledge Sharing Platforms

This approach has effectively been used by CCARDESA to disseminate information during international conferences, agricultural shows, nutrition weeks, science Fairs, side events, etc. CCARDESA sets up booths where conference participants are free to sample CCARDESA publications and information during such events. These events are used as opportunities for CCARDESA to play its role as a regional knowledge broker, promote its work to outsiders, and create visibility about CCARDESA. Such events are also used to build its audience on D-groups by requesting people visiting the booth to register to form part of the CCARDESA discussion forum.

2.4.2 Third Party Knowledge Sharing

CCARDESA uses the third-party type of communication with stakeholders who act as CCARDESA ambassadors. These take it upon themselves to communicate CCARDESA content and information to external parties in their countries or other online platforms.

2.4.3 Communities of Practice (COP)

CCARDESA has closely knit relationships with information officers in the directorates of extension and research in the 16 member states who are vital in mobilising information, including research in their respective countries for sharing on the CCARDESA website. These officers, popularly known as the CCARDESA ICKM focal point persons, meet regularly, virtually and once a year physically to discuss ways of how to improve the CCARDESA repository. Most recently, CCARDESA developed a new CoP of media personnel who works in various media houses in the SADC member states. These include journalists, reporters, and online bloggers. This group was engaged mainly to strengthen the visibility aspect of CCARDESA at both regional and national level. CCARDESA has also developed an annual award that incentivizes the media to promote and disseminate CCARDESA activities in the region throughout the year.

2.5 Components Of Knowledge Management

CCARDESA implements its knowledge management strategy in line with the components of Knowledge management on: People, Processes, and Technology as illustrated in Figure 2. These provide context for the development of the CCARDESA ICKM system and the strategy. ICKM activities are often confused with the tools used to facilitate the process, such as web portals and database systems. While a web portal can fulfil many of the requirements of ICKM, it is nothing without the people who use it and the process that they apply to interact with it. Therefore, Knowledge Management comprises the following three components:

- i) The people – including institutional champions and knowledge managers;
- ii) A set of processes, standard procedures, or operating guidelines – to assist users in interacting more efficiently, and provide data and frameworks for monitoring progress towards targets and goals; and
- iii) A collection of technology platforms and tools that will enable the sharing of information openly and transparently. The interlinkages between people, processes and technology is shown in Figure 2.

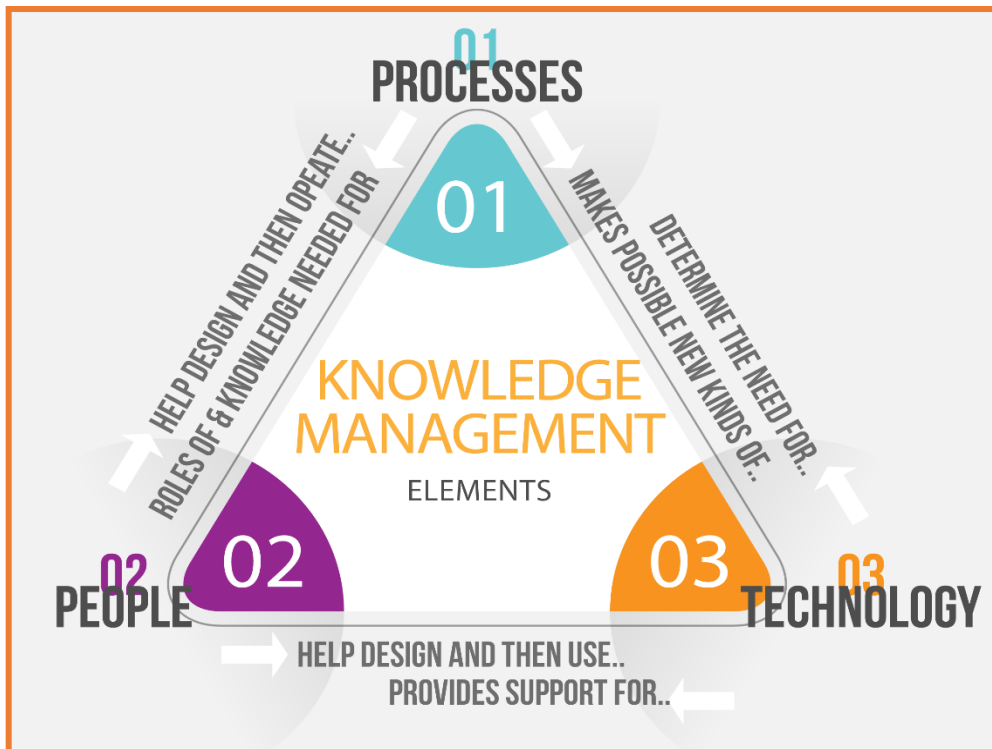


Figure 2: Knowledge management comprises people, processes and technology

2.5.1 People

People play a critical role in Knowledge Management because the success of knowledge management depends on the willingness of people to share their knowledge and for organisations to have the human resources to support all knowledge management processes. CCARDESA has dedicated human resources to implement this strategy. These coordinate and plan ICKM work activities internally and externally.

Knowledge management activities cannot be implemented without the people component. Therefore, CCARDESA engages the SADC Member States to ensure that knowledge management is successful. This is typically done by engaging the Ministries responsible for Agricultural Research and Agricultural extension in the SADC countries, the ICKM focal point persons, and the media. The CCARDESA personnel responsible for ICKM supports the mobilisation of information, regional broker Knowledge, and moderate communication systems.

2.5.2 Processes

CCARDESA’s ICKM processes are the practices that encourage and stimulate the ability of staff and stakeholders to develop knowledge. ICKM processes include knowledge discovery, knowledge capture and creation, Knowledge sharing and brokering, and the application of learned Knowledge (Mahmoud, 2001). It is expected that through robust ICKM processes, CCARDESA and its stakeholders can

together move towards being a unified learning institution that continually expands its capacity for results (Senge, 2006).

CCARDESA also regularly engages with the media in the region through annual awards to generate agricultural information and knowledge that help to grow the knowledge base of citizens in the SADC region. The media create news articles and videos that become valuable information sources for member states and build the CCARDESA knowledge repository.

Furthermore, CCARDESA constantly engages with the community of practice of national ICKM focal points persons through regular supportive training and regional exchange workshops. Through this engagement, CCARDESA receives research outputs from the focal point persons that form part of CCARDESA's knowledge hub.

CCARDESA uses engagement processes with its discussion group members to share and disseminate information from its experts, who respond to technical questions on D-groups from time to time.

These processes help to strengthen the ICKM component activities and support CCARDESA to meet its mandate as a regional knowledge broker. They are also routinely included in the institutional work plans. CCARDESA rides on these processes to develop, collect and share knowledge to reach a wider audience.

2.5.3 Technology

The final axis of the ICKM system is technology, which in the case of CCARDESA includes physical hardware (in-house or third-party hosted), ICT support, and services (domain registry, newsletter systems, etc.). CCARDESA has invested a reasonable amount of resources in the development of technology systems. These technology systems provide platforms to store captured knowledge, enhance and extend the sharing and brokering of knowledge and assist stakeholders in applying learned knowledge.

CCARDESA uses technology for communicating and sharing information through its website, email, Microsoft teams, Zoom, Facebook, WhatsApp etc. Clearly, technology cannot be removed from knowledge management. Hence, CCARDESA ensures that it is well equipped technologically by having the relevant ICT infrastructure and equipment.

2.6 ICKM Stakeholders

CCARDESA realises that for any message to be well communicated, there is a need for a recipient. Therefore, CCARDESA's communication is usually targeted at different kinds of audiences. The key and primary audiences that CCARDESA will work with are at national level, regional level, continental level and globally. These audiences require information and knowledge products at different scales of detail. Farmers, for example will need simple messages that are applicable to their business enterprises while academics will require scientific products for

advancement of ideas and science. CCARDESA will keep a wide range of audiences actively catered for at different levels. Regular updates will be done to ensure that the targeted stakeholders that CCARDESA deals with include a wide range of the interested parties within the agricultural sector.

Stakeholders identified by the CCARDESA Secretariat are as follows:

National Level	Information Needs/ support to CCARDESA
<ul style="list-style-type: none"> ▪ Permanent Secretaries ▪ Director of Research ▪ Director of Extension ▪ National ICKM Focal Points ▪ Heads of National Agricultural Research and Extensions Systems (NARES) ▪ Deans of Faculty of Agriculture ▪ Civil Society (NGOs/CBOs/CSOs), including Farmers Organisations, Youth Organisations, Women’s Organisations ▪ Research Institutes/Councils, etc. ▪ Private Sector, including Farmers, Agri-Businesses, and private sector extension advisory providers ▪ Extension Staff – National and Local ▪ Information Specialists (librarians, managers) ▪ The media (radio, TV, web, print) 	<ul style="list-style-type: none"> ▪ Policy documents and research ▪ Policy development documents & Research recommendations ▪ Research documents, News articles,, videos, Podcasts, FB posts, field photos and captions ▪ Research documents ▪ Research documents, policy briefs and research needs ▪ Research documents, CSA publications, News articles and videos ▪ Research needs, research recommendations and policy briefs ▪ CSA videos, News articles ▪ Indigenous knowledge from the farmer in form of videos, recommendations, CSA KPS from CCARDESA ▪ Research recommendations, news articles, policy briefs, videos, podcasts. Youtube clips
Regional/International	Information Needs & Support to CCARDESA
<ul style="list-style-type: none"> ▪ SADC: FANR Directorate, Climate Service Centre ▪ Continental and other Sub-Regional Organisations (SROs) ▪ Regional Economic Communities ▪ Regional Extension/Research Networks/ other Knowledge Providers. ▪ The Food and Agricultural Organisation of the United Nations (FAO) and similar institutions ▪ International Cooperating Partners (ICP) ▪ CGIAR-Centres 	<ul style="list-style-type: none"> ▪ Policy documents and communiques ▪ Research documents, policy documents and briefs, technical briefs ▪ Research documents and recommendations ▪ Policy briefs, technical briefs ▪ Agricultural guidelines, standards and policy documents ▪ Research documents, recommendations and policy documents

CHAPTER THREE

3. STRATEGIC ACTIONS

The strategy has been developed with the aim of supporting the overall corporate Strategic Plan 2020-2029. Therefore, the sub-vision specific to ICKM of CCARDESA is *“To be a SADC knowledge hub for agricultural research and development.”* CCARDESA will position itself to ensure that it fosters agricultural research and development knowledge brokerage in the SADC region. To fully do this, CCARDESA has prioritised key activities that it will implement. These strategic actions are also part of the CCRDESA workplan because they are critical to the organization. The main strategic actions are presented below, but the full detailed is provided in Appendices A1.2.

3.1. Facilitate Access to Audience-Specific Agricultural Knowledge and Information through CCARDESA ICKM & SAAIKS

This strategic action allows CCARDESA to provide audience-specific information, allowing member states to make agricultural information and information-based decisions. Under this strategic action, CCARDESA will do the following:

3.1.1 Strengthen and Maintain SAAIKS, ICKM system and Associated Infrastructure

Apart from implementing the 4C's component, CCARDESA will continue strengthening and maintaining its ICKM system to provide relevant information to its users. It will ensure that new updates are done on the website to keep it current and always reliable. The ICKM will be updated from Drupal 7 to Drupal 8. Similarly, the CCARDESA Learning Mobile Application will be upgraded. Additionally, CCARDESA will continue engaging its audiences on social media platforms, and discussion group forum. It will also continue to undertake all the activities that have been elaborated under section 1.6.

CCARDESA will improve on the use of its Discussion Groups (D-groups) Forum channels to target a range of relevant audiences. D-groups are to date the most successful element of the ICKM operations at CCARDESA. They provide an email-based discussion platform integrated into the CCARDESA Knowledge Hub. Discussions can be user-driven, which is often the case, but can also be driven and moderated by the CCARDESA. Quarterly newsletters will be used to provide regular summarised highlights of CCARDESA's activities to a broad audience of subscribers.

CCARDESA has a wealth of knowledge products on the SAAIKS and 67 technical briefs on climate-smart agriculture on the CCARDESA mobile app. Additional KPs will be developed such that they can be used by extension workers on laptops and mobile devices, in PDF or printed for distribution in the field. To support this, KP templates will be created and will be used to translate existing KPs and distributed

either in electronic or hard copy after printing. News and events will provide key intervention points for curating content, sharing and adding value to content from CCARDESA stakeholders, and disseminating CCARDESA's own and partners' meeting, workshop, conference, and training events information.

3.1.2 Knowledge Translation into Various Formats

The knowledge products are only accessible to those who have access to Wi-Fi and smartphone technology. However, many people, including the farmers in rural parts of the SADC region could best benefit from these knowledge products if they were translated in a format that they can easily be accessed.

CCARDESA will therefore work with relevant stakeholders in member states to convert some of its knowledge products and technical briefs into different formats including radio programmes, skits, videos, posters etc for the benefit of the local farmers. This will also ensure that the agricultural and research information and knowledge products are practically applied to benefit the farmer and stakeholders within the different agricultural value chains.

The CCARDESA content (not curated content) will be disseminated under Creative Commons licensing - depending upon source material and the requirements of partner organisations. This approach to content licensing will support the maximum possible usage of CCARDESA content, providing benefits to the licensee and the licensor whilst following a globally recognised resource licensing framework.

3.2 Create Linkages to Knowledge Management Hubs to foster Collaboration & Information Sharing Among Stakeholders

This strategic action will enable CCARDESA to link its ICKM system with other systems in the region and beyond. The linkages will allow for seamless shopping of information by users in various agricultural information systems. Like a borderless state, the interconnectivity of systems will advantage the users as they will have more information at their disposal. Under this strategic action, CCARDESA will undertake the interventions narrated below.

3.2.1 Facilitate the Interoperability of Systems and Strengthen Knowledge Partnerships

CCARDESA will also ensure that its knowledge hub is linked with other existing systems in the region. It will not only target regional or continental institutions but will also target the national agriculture websites. This will allow for seamless exchange of information within a region, strengthening and enriching the knowledge base of the citizenry in the SADC countries.

3.2.2 Strengthen e-Learning Solutions and Knowledge Exchange

CCARDESA will strengthen knowledge exchange and collaboration among regional training and applied research institutions regarding best practices using its e-Learning solutions. It will target the youths and women through creating awareness of various programmes on the e-Learning platforms. The range of courses, and frequency of enrolment of students undertaking e-learning courses will be increased. A follow-on system will be designed which will capture success stories of how the knowledge attained from the e-Learning programmes are being put into practice and to improve livelihoods.

CCARDESA will also improve knowledge exchange among its stakeholders to encourage continued learning. Exchange visits will be conducted including joint hosting of conferences to strengthen the knowledge management capacity of stakeholders in the region.

3.2.3 Optimise Media Engagements & Knowledge Brokerage Foras.

CCARDESA will conduct annual media engagement promotion to encourage the media to document agriculture research and development activities in the SADC region. This strategy will generate content for the CCARDESA website and will also trigger interest in member states to learn more about the AR4D agenda.

To fully reach all the member states with agricultural information and research, CCARDESA will also work closely with the Media to document agricultural national stories. These stories will come in various formats. Some will be in the form of videos of the influential farmers, including youths and women, as well as stories and news articles of influential entrepreneurs.

Massive visibility activities are critical for CCARDESA as an organisation that aims at providing information to different stakeholders within the national, regional and global pool of stakeholders. The ICKM will therefore consistently provide information to its stakeholders and aim at maintaining the quality and reliability of the system in serving the interests of the users. Some of the actions to be taken will include:

- i) Development and distribution of promotional materials
- ii) Participating in international fora
- iii) Participating in national media programmes (which include TV and radio programme)
- iv) Increasing the outreach to stakeholders through a wide range of initiatives.

3.3 Strengthen Capacity of NARES in Information Packaging and Use of Digital Innovations and ICT to Transform Agriculture

Under this strategic action, CCARDESA will facilitate strengthening of member states' capacity in information, communication, & knowledge management. This will be done through the provision of support and coordinated approach to capacity-building activities in knowledge management, including sensitizing stakeholders

about the Knowledge Management standards (ISO 34001). CCARDESA will also provide communication tools to the NARES to facilitate virtual communications with relevant stakeholders. Support will be given to key agricultural institutions in the region with ICTs so that they can effectively support farmers to use the CCARDESA Mobile learning Application. The observed limitation in skills for using the ICT tools in information sharing and dissemination will be addressed through offering training of stakeholders. Training activities will therefore be organised to deal with specific areas, including:

- i) Use of the CCARDESA Learning Mobile Application
- ii) Short video production
- iii) Documentation of success stories
- iv) Training of Media personnel in climate change/ fore sighting & resilience in agriculture and natural resource management in the SADC Region to allow them to write stories from an informed perspective.

CHAPTER FOUR

4. Implementation Plan

In order to realise the vision discussed in the strategy, an implementation plan is elaborated below, including primary phases of work, which must be completed to fully institutionalise the ICKM system at CCARDESA, through the following components:

4.1 Guiding Elements For Implementation

The CCARDESA knowledge management strategy will follow the elements of the 4Cs of coordination, content, curation and communication (Figure 3). These elements will help to put the vision into context. They are also the fundamental guiding foundations that support the system's sustainability into the future and reframing the ICKM principles outlined above.

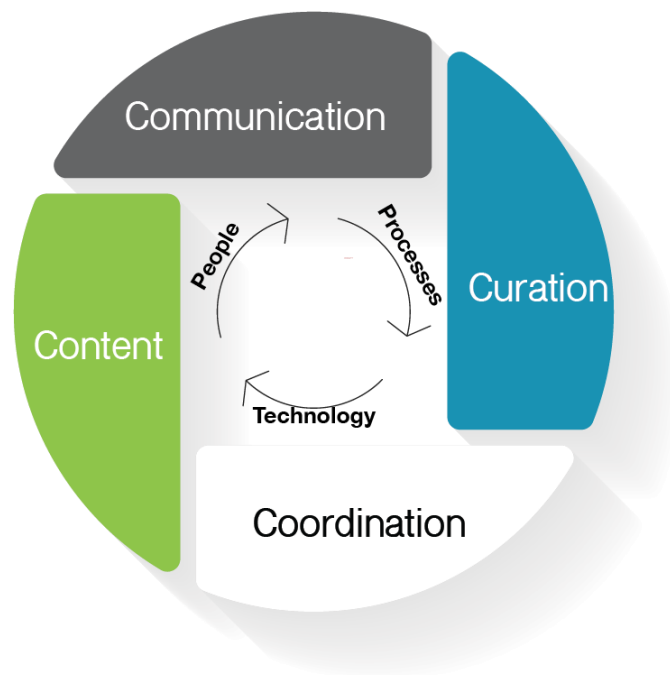


Figure 3: ICKM Principles versus CCARDESA ICKM elements

4.1.1 Coordination

ICKM is often seen as an Information and Communication Technologies' issue, with online or electronic systems 'doing' the management. However, all systems comprise the key elements shown in the inner circle of Figure 3, with the critical components of People and Processes, which are often overlooked. Referring to the outer ring in the same figure, the element among the 4Cs that often requires the most attention is coordination. In the case of ICKM at CCARDESA, this refers to coordinating and managing the ICKM function, allowing Communication of Content and Curated Content to reach stakeholders.

Generally, CCARDESA thematically concentrates on the mobilisation of agricultural research findings for application by agricultural research and extension services to improve the livelihoods of smallholder farmers in the SADC region. Through strategic ICKM interventions, CCARDESA aims to retain its position as a focal regional agricultural knowledge broker. This role enables the ICKM and other technical specialists at CCARDESA to identify key research results, regional and international lessons learned and best practices and mobilise this content for use by NARES. To support these functions, internal ICKM technical staff will provide dedicated resources for ICKM activities, such as identifying knowledge resources, knowledge translation, content development and curation, and communications, among others.

Coordination will also include managing inputs from the CCARDESA National ICKM Focal Points (NFPs) and other regional and international organisations. The NFPs mobilise content from national research and extension services, raising it to the attention of CCARDESA. The internal CCARDESA ICKM personnel will support the NFPs to identify content from stakeholders, supported by access to online discussion forums and social media.

4.1.2 Content

The content referred to herein is focused on developing and curating standardised knowledge products. The high-quality knowledge content is created and distributed by CCARDESA in various forms to provide value to stakeholders and agricultural information so that CCARDESA fulfils its mandate as a regional knowledge broker. Knowledge Products (KPs) are CCARDESA produced materials developed by researchers or experts in the research or extension domains. Content covers digital and hard-copy content, with digital content being the primary form of content and distribution. Still, traditional hard-copy content being a secondary format that can be utilised for engaging with those that do not have access to digital platforms.

CCARDESA's mandate includes gender and youth as cross-cutting issues that should be considered in the development of all content that is developed and curated. CCARDESA-created content will remain under the institution's control and will comply with this approach, but consideration *will* also be given to ensuring that curated content meets the same standards. This can be covered in the evaluation of content identified for curation to promote the development of content that addresses the needs of women and youth. All content developed by CCARDESA and content curated by CCARDESA is assigned a gender marker and a youth marker to indicate the extent to which content addresses the needs of women and youth. These markers are integrated into metadata to enable search functions in the knowledge hub. These gender markers are operationalised through quality management plans (QMPs) and SOPs defined in the ICKM Manual.

Gender makers and youth markers have been developed to provide data on a critical cross-cutting issue, which can often be challenging to quantify. These markers are being implemented through SOPs for content development in CCARDESA Knowledge Products. Markers provide information on development goals and are

useful as indicators that provide necessary measures for policymakers (GIZ, 2014). Gender markers and youth markers are used to grade outputs based on the specific objectives of the content. If contents are designed to address gender or youth specifically, it is given a top mark. If contents do not target gender or youth at all, then it is given a 0 score. CCARDESA will monitor its knowledge hub with respect to the percentage of content featuring relevant material on gender and youth.

4.1.3 Curation

Curation refers to the addition of value to external knowledge sources through commentary, assessment and promotion. This content remains on the custodian’s website. The materials linked to or provided by CCARDESA provide evaluation and regional contextual value, associating the material with CCARDESA programmes, regional priorities.

CCARDESA will support the mobilisation of content at the national level and regularly reminds the NFPs of their task of identifying new content for curation in the Member States and raising it to the attention of CCARDESA to be curated on the knowledge hub and disseminated regionally. CCARDESA Staff will support this function by searching existing databases from other organisations for agricultural research information to enrich the CCARDESA repository.

4.1.4 Communication

Communication is the process of publicising CCARDESA content, CCARDESA curated content, other related content and events to CCARDESA stakeholders, using social media, newsletters, Instagram, YouTube, traditional media (print and broadcast), and online discussion groups.

CCARDESA’s communications are designed to achieve the following primary objectives:

- i) Inform stakeholders of a particular item – content, news or event;
- ii) Drive traffic to the ICKM System for further engagement; and
- iii) Communicate the vision and mission of CCARDESA.

The channels and nature of communications that CCARDESA uses to communicate with its stakeholders, including the type, are summarised in Table 1. .

The communications flow for the CCARDESA ICKM system are illustrated in **Figure 4**. It is essential to point out that the term stakeholder in this figure includes extension workers, who identify the most appropriate format for distribution of a particular KP – digital or hard-copy as needed.

Table 1. Channels and nature of communication channels.

Types of Communication	Communication Channel	Nature of content
------------------------	-----------------------	-------------------

Primary		
CCARDESA electronic	Website news	Curated content Release of CCARDESA content (KPs)
	Website events	CCARDESA events, with links to curated content and CCARDESA content (KPs)
	Mobile Application	Technical Briefs
	Social Media	Curated content Release of CCARDESA KPs
	Discussion groups	Use of DGroups or other platforms to publicise curated content and CCARDESA content (KPs), as well as facilitate discussions on pertinent regional agricultural topics
	Newsletters	Summaries of website news items
CCARDESA in-person	Event attendance	Presentations, seminars or exhibitions, referring to curated content and CCARDESA content (KPs)
	Meeting participation	Reference to curated content and CCARDESA content (KPs)
Secondary		
Affiliated institutions/ partners	Website news	Promotion of CCARDESA curated content and CCARDESA content (KPs)
	Social media	Promotion of CCARDESA curated content and CCARDESA content (KPs)

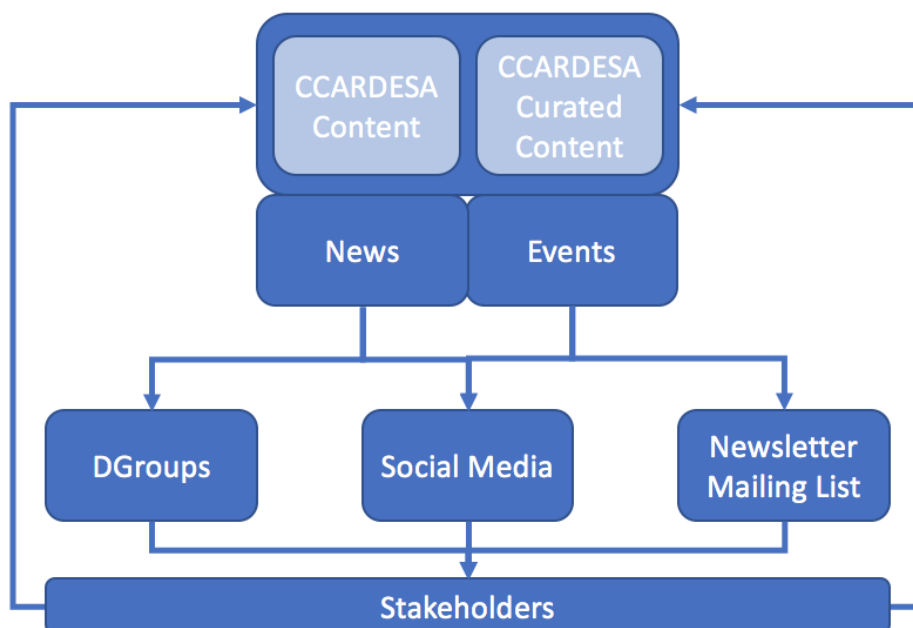


Figure 4 ICKM Communications flows

4.2 Roles and Responsibilities

The primary roles and responsibilities within the CCARDESA ICKM are as follows:

The Executive Leadership – providing final oversight of all CCARDESA publications, including KPs, and all major DECISIONS.

The Grants and Programmes Manager – managing all ICKM coordination activities at CCARDESA, working with the other CCARDESA Thematic Coordinators, secretariat administration, National ICKM Focal Points, and providing guidance and management to the ICKM Communications Officers.

ICKM Communications Officers - undertaking all communication functions, under the guidance and approval of the ICKM Coordinator.

Other CCARDESA Programme Coordinators – will be expected to collaborate with the ICKM Officers to ensure that all staff are aware of developments in ICKM, and the ICKM unit are appraised of all relevant developments in each thematic area, should ICKM be required;

CCARDESA Technical staff – other Thematic Coordinators, and technical staff, contributing to ICKM activities by identifying content for mobilisation, knowledge translation and curation, where relevant; and

National ICKM Focal Points – engaging with member state-level stakeholders to mobilise content from the country-level through the national ICKM focal points and the regional ICKM community of practice.

4.3 Activities and Schedule

The following output tables are directly connected with the medium-term operation plan and CCARDESA annual workplan. This strategy, the schedule of activities and the ICKM manual shall be a living document – regularly reviewed and updated as required.

Output 1: Knowledge management hubs to foster collaboration and information sharing among various stakeholders in different countries strengthened

Actions	Responsibility
1.1 Strengthen and maintain existing regional knowledge management hubs and CCARDESA ICKM system and associated infrastructure.	ICKM and Financial Departments
1.2 Facilitate the interoperability of existing national and regional knowledge management hubs	Executive Director, and ICKM Unit
1.3 Strengthen knowledge exchange and collaboration among regional training and applied research institutions regarding best practices	Technical staff & ICKM Unit
1.4 Develop and disseminate knowledge products and promising practices including technologies and practices to increase adoption of research results by agricultural value chain actors	Technical staff & Member states /ICKM Units
1.5 Facilitate the capacitation of AR4D institutions in the use of digital and ICT tools.	ICKM & Technical staff

Output 2: Access to audience-specific agricultural knowledge and information through CCARDESA's ICKM and the Southern Africa Agriculture Information and Knowledge System (SAAIKS) enhanced

Actions	Responsibility
2.1 Improve information and knowledge collection, curation, collation, packaging and reporting to meet the needs of the target audience	ICKM Unit
2.2 Share AR4D knowledge products through ICKM platforms	ICKM Unit
2.3 Facilitate the establishment and maintenance of on-line repositories and e-Learning platforms to enhance access to information and knowledge.	ICKM Unit & Technical staff
2.4 Promote the ICT tools and platforms for extension in the region.	ICKM Unit
2.5 Facilitate inclusion of CSA and Climate smart natural resources management (CSNRM) contents into training programmes	ICKM Unit
2.6 Enhance media engagement to promote CCARDESA's visibility	ICKM Unit

Output 3: NARES institutions strengthened in information packaging and use of digital innovations and ICT with potential to transform agriculture

Actions	Responsibility
3.1 Facilitate the introduction of digital innovations and ICT platforms in AR4D institutions	Research and Programmes Department
3.2 Promote and maintain international standards and best practices for collecting and packaging agricultural research information	Research and Programmes
3.3 Facilitate the collection of agricultural data at national level for data-based decision	Research and Programmes
3.4 Support capacity building on the use of e-Extension and e-Commerce to link farmers to markets for inputs and produce	Research and Programmes
3.5 Facilitate multi-stakeholder policy dialogues on regional agriculture issues.	Research and Programmes Department and ICKM Unit
3.6 Provide support to relevant SADC technical committees	Research and Programmes Department and ICKM Unit

SUSTAINABLE ICKM AT CCARDESA Routine Tasks	
Actions	Responsibility
4.1 Review and update terms of reference and workplans for National Focal Points.	Research and Programmes Department and ICKM Unit
4.2 Develop, curate and facilitate social media updates, news items, and DGroup discussion topics	Research and Programmes Department and ICKM Unit
4.3 Develop and deliver knowledge sharing capacity building events to stakeholders in all Member States	Research and Programmes Department and ICKM Unit
4.4 Monitor and engage with information technology contractor to ensure ICKM systems and operations are properly maintained	Administration Department
4.5 Review and update CCARDESA's knowledge sharing terms of reference, ICKM manual, standard operating procedures, and quality management plans	All staff and National Focal Points
4.6 Develop and deliver training in incorporating gender and youth needs in stakeholder engagement activities	ICKM Unit

4.4 Funding Source of the Strategy

The implementation of this strategy will require funds for some of the activities, while others come as routine activities that have almost no need for extra resources. The funding will have to come from various sources such as CCARDESA, Technical Partners, Member States' (in-kind contributions) and Development Partners. Maintaining the system and sustaining the ICT infrastructure as well as improving the staff complement would require a significant financial support. As some activities form part of running projects, the relevant projects are expected to support them. This includes the development of project specific to communication, visibility and knowledge management strategies.

Since the implementation of the strategy will be done through annual work plans with budgets drawn annually, prioritisation of some activities will be influenced by availability of resources.

Indicative Annual Budget

Output 1: Knowledge management hubs to foster collaboration and information sharing among various stakeholders in different countries strengthened					
Actions	Budget in US\$				
		Quarter 1	Quarter 2	Quarter 3	Quarter 4
1.1 Strengthen and maintain existing regional knowledge management hubs and CCARDESA ICKM system and associated infrastructure.	20,000				
1.2 Facilitate the interoperability of existing national and regional knowledge management hubs	5,000				
1.3 Strengthen knowledge exchange and collaboration among regional training and applied research institutions regarding best practices	7,000				
1.4 Develop and disseminate knowledge products and promising practices including technologies and practices to increase adoption of research results by agricultural value chain actors	10,000				
1.5 Facilitate the capacitation of AR4D institutions in the use of digital and ICT tools.	10,000				

Output 2: Access to audience-specific agricultural knowledge and information through CCARDESA's ICKM and the Southern Africa Agriculture Information and Knowledge System (SAAIKS) enhanced					
Actions	Budget IN US\$				
2.1 Improve information and knowledge collection, curation, collation, packaging and reporting to meet the needs of the target audience					
2.2 Share AR4D knowledge products through ICKM platforms					
2.3 Facilitate the establishment and maintenance of on-line repositories and e-Learning platforms to enhance access to information and knowledge.	5,000				
2.4 Promote the ICT tools and platforms for extension in the region.	8,000				
2.5 Facilitate inclusion of CSA and Climate smart natural resources management (CSNRM) contents into training programmes	3,000				
2.6 Enhance media engagement to promote CCARDESA's visibility	8,000				

Output 3: NARES institutions strengthened in information packaging and use of digital innovations

and ICT with potential to transform agriculture					
Actions	Budget in US\$				
3.1 <i>Facilitate the introduction of digital innovations and ICT platforms in AR4D institutions</i>					
3.2 <i>Promote and maintain international standards and best practices for collecting and packaging agricultural research information</i>	1,400				
3.3 <i>Facilitate the collection of agricultural data at national level for data-based decision</i>	2,000				
3.4 <i>Support capacity building on the use of e-Extension and e-Commerce to link farmers to markets for inputs and produce</i>	30,000				
3.5 <i>Facilitate multi-stakeholder policy dialogues on regional agriculture issues.</i>	20,000				
3.6 <i>Provide support to relevant SADC technical committees</i>					

SUSTAINABLE ICKM AT CCARDESA Routine Tasks					
Actions	Budget in US\$				
4.1	Review and update terms of reference and workplans for National Focal Points.				
4.2	Develop, curate and facilitate social media updates, news items, and DGroup discussion topics				
4.3	Develop and deliver knowledge sharing capacity building events to stakeholders in all Member States	70,000			
4.4	Monitor and engage with information technology contractor to ensure ICKM systems and operations are properly maintained	10,000			
4.5	Review and update CCARDESA's knowledge sharing terms of reference, ICKM manual, standard operating procedures, and quality management plans				
4.6	Develop and deliver training in incorporating gender and youth needs in stakeholder engagement activities	20,000			
Total Budget		US\$225,400			

CHAPTER FIVE

5.1 Monitoring and Evaluation

CCARDESA will monitor its progress in the implementation of this strategy in order to critically assess progress, identify success factors, and address any obstacles encountered. It will do this through monitoring its performance on the websites, SAAIKS and D groups using google analytics. For Facebook and Instagram, it will use insights. Remedial measures will be taken in cases where obstacles and challenges have been identified. The results will feed into the broader Monitoring Evaluation framework at corporate level.

M&E will be undertaken as a continuous process based on the indicators provided in the logframe. These include number of publications in a given category, quality of discussions in discussion groups, the size and dynamism of discussion forums. Web based systems may be evaluated based on statistics generated through google analytics.

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5.2 Results Framework

The results framework below presents a series of key target outputs and associated indicators. These will be operationalised in the monitoring system with baselines and targets (where appropriate), linked to the CCARDESA monitoring and evaluation system.

Results Framework Table:

STRATEGIC AREA	KEY INTERVENTION	OUTPUT	INDICATORS
1. Facilitate creation of linkages to Knowledge management hubs to foster	Strengthen knowledge management hubs to foster collaboration and information sharing	Knowledge management hubs to foster collaboration and information sharing among various stakeholders in different countries strengthened.	Indicator 1. Number of regional knowledge hubs and ICT infrastructure status

<p>collaboration and information sharing among various stakeholders in different countries</p>	<p>among various stakeholders in the region</p>		<p>Indicator 2: Number of interoperable regional knowledge hubs.</p> <p>Indicator 3: Number of regional institutions collaborating in information sharing</p> <p>Indicator 4: Number of different types of knowledge products developed and disseminated</p> <p>Indicator 5: Number of AR4D institutions capacitated</p>
<p>2. Support access to audience-specific agricultural knowledge and information through CCARDESA's ICKM and the Southern Africa Agriculture Information and Knowledge System (SAAIKS)</p>	<p>Provide stakeholders with audience specific AR4D information and knowledge to make informed decisions and support agricultural transformation</p>	<p>Access to audience-specific agricultural knowledge and information through CCARDESA's ICKM and the Southern Africa Agriculture Information and Knowledge System (SAAIKS) enhanced</p>	<p>Indicator 1: Number of people trained on information and knowledge collection, collation, packaging, and reporting.</p> <p>Indicator 2: Number of ICKM packages collected, curated, collated, packaged and reported in the ICKM platform.</p> <p>Indicator 3: Number and types of knowledge products shared on the ICKM platform.</p> <p>Indicator 4: Number of people participating in e-Learning.</p> <p>Indicator 5: Number of training on the use of the mobile App</p> <p>Indicator 6: Number of training programmes on CSA and CSNRM.</p> <p>Indicator 7: Number of media articles and documentaries shared</p>
<p>3. Strengthen various institutions under the NARES in information packaging and use of digital innovations and ICT with potential to transform agriculture</p>	<p>Strengthen AR4D institutions in information packaging and use of ICT tool and digital innovations to advance agricultural transformation.</p>	<p>NARES institutions in information packaging and use of ICT tool and digital innovations to advance agricultural transformation strengthened</p>	<p>Indicator 1: Number of institutions using digital innovations and ICT tools.</p> <p>Indicator 2: Number of institutions applying ISO standards and best practices for collecting and packaging agricultural research information.</p> <p>Indicator 3: Number of institutions collecting agricultural data using ICT-based tools.</p> <p>Indicator 4(a): Number of people trained on e-Extension and e-Commerce.</p> <p>Indicator 4(b): Number of institutions supported on using e-Extension and e-Commerce.</p>

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