



## **Guidelines for Capturing Information and Knowledge Products**

**for**

**CCARDESA**

**Prepared by**

**Lead Consultant:** Stephen Obol Opiyo, Ph.D.

**Assistant Consultant:** Fallys Masambuka-Kanchewa, Ph.D.

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## Acronyms

**AFAAS** - African Forum for Agricultural and Advisory Services

**AR4D** - Agricultural Research for Development

**ASARECA** - Association for Strengthening Agricultural Research in Eastern and Central Africa

**AU** - African Union

**AUC** - African Union Commission

**CAADP** - Comprehensive Africa Agriculture Development Programme

**CAADP-XP4** Comprehensive Africa Agriculture Development Programme ex-Pillar 4

**CCARDESA** - Centre for Coordination of Agricultural Research and Development for Southern Africa

**CORAF** – West and Central African Council for Agricultural Research and Development

**EU** - European Union

**FARA** - Forum for Agricultural Research in Africa

**ICKM** - Information Communication and Knowledge Management

**ICTs** - Information Communication Technologies

**IFAD** - International Fund for Agricultural Development

**NARES** - National Agricultural Research and Extension Systems

**SADC** - Southern African Development Community

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## **Executive summary**

The website of the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) contains information from member countries, funding organisations and various stakeholders. The website is accessed and used by a wide range of stakeholders from the SADC region. It is also linked to the D-Groups (an interactive discussion platform) and Facebook. In order to ensure that extension agents have access to timely, relevant and up-to-date information, CCARDESA has a mobile app that is specifically designed to assist them in their work. CCARDESA's website is also linked to the SAAIKS knowledge hub which houses over 800 knowledge products.

Despite availability of the system to support member states in capturing and sharing knowledge, most of the member states still face challenges in capturing and sharing agricultural knowledge, as well as knowledge relating to the Malabo Declaration commitments and Sustainable Development Goals (SDGs). The reasons include inadequate resources for collecting data and knowledge sharing with broader group of stakeholders, and insufficient financial resources at the regional, national, and continental level for collecting, analyzing and validating knowledge.

This report covers the guidelines for capturing information and knowledge products for three areas: the Malabo Declaration commitments, SDGs, and CCARDESA's themes. CCARDESA focal point persons are hampered by lack of coordination, inadequate standards and tools for capturing information and knowledge products, and other problems. These guidelines were developed to overcome these challenges. The development of the guidelines involved desk research, literature reviews, qualitative and quantitative content analysis, key informant interviews, focus group discussion, and consultative workshops with agricultural data capture and KM stakeholders conducted from January to February 2021.

For each of the three areas mentioned above, the guidelines provide information on documents required, sources/links for the documents, and information and knowledge products (news articles, technical briefs, video clips, reports, etc.) to be captured.

## 1. Introduction

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) was established in July 2010 by the Southern African Development Community (SADC) member states, as a sub-regional organisation responsible for coordinating agricultural research and development in the region. To ensure the effectiveness and efficiency of this work, CCARDESA developed a strategic plan to guide its operation. The plan highlights the implementation of regional AR4D programmes; improving agricultural technology generation; dissemination and adoption through collective efforts; training and capacity building; and providing information and knowledge products to stakeholders, among other major value propositions. To realize these propositions, CCARDESA has developed an Information Communication and Knowledge Management (ICKM) system that is considered one of the most active information systems in the SADC region.

CCARDESA, in collaboration with the African Forum for Agricultural and Advisory Services (AFAAS), the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), the Central African Council for Agricultural Research and Development (CORAF), and the Forum for Agricultural Research in Africa (FARA), is implementing a four-year EU-funded project administered by the International Fund for Agricultural Development (IFAD). The Comprehensive Africa Agriculture Development Programme ex-Pillar 4 (CAADP-XP4) project is aimed at enabling agricultural research and innovation, including extension services, to contribute effectively to food and nutrition security, economic development and climate mitigation in Africa. In Southern Africa, the project is being implemented in seven SADC target countries: Botswana, Eswatini, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe.

The project is expected to improve the capacity of AFAAS, ASARECA, CCARDESA, CORAF and FARA to support African countries in contributing to the delivery of CAADP results through inclusive regional and international partnerships; production and exchange of climate-related agricultural knowledge; more effective communication, monitoring and evaluation; and the promotion of more systemic and effective use of science, knowledge and innovation. It will also improve the capacity of African countries to deliver CAADP/Malabo targets.

As one way of improving data capture and knowledge management for better information sharing in the CAADP-XP4 implementing countries, CCARDESA is developing guidelines, to be used at both the regional and national level, for capturing information and knowledge products.

### 1.1 Knowledge Management

Knowledge management includes identification, creation, analysis, representation, distribution and application of knowledge to create value to an organisation. An effective and efficient knowledge management system and structure heavily depends on existence of four components of knowledge management namely: **Roles, Processes, Technologies and Governance**

### **1.1.1 Roles**

The CCARDESA ICKM strategy describes the role of various stakeholders in data capture and KM at regional, national and local levels. The manual spell out the technical responsibilities of various stakeholders in operationalization and implementation of data capture and KM at regional, national and local levels as follows:

#### *1) Coordination*

The role of coordinating all ICKM activities is assigned to CCARDESA's staff. According to the manual, the staff is responsible for ensuring quality management and providing guidance for all content that is uploaded on the system. The CCARDESA staff is to work with other specialists at CCARDESA when reviewing the content to make sure that the content meets the expected standards.

#### *2) Management*

The task of managing the ICKM system is assigned to the CCARDESA ICKM staff. Among others the staff are to oversee the systems day to day operations such as “maintaining the ICKM system and websites, uploading content (KPs, curated content, etc.; monitoring D-Group discussions, monitoring, and maintaining quality of the entire ICKM system (CCARDESA, 2018,).

#### *3) Content Developer/Contributor*

The national ICKM focal point persons, CCARDESA's staff and volunteers are tasked with the responsibility of collecting data on various products and curating content for uploading on the website. During the key informant interviews and focus groups, it was reported that in most cases the focal point persons do not develop any new content due to lack of resources but rather just consolidates existing content and uploads it on the website. In addition, the project summary on strengthening the ICKM systems (CCARDESA, 2018) reported a list of 24 knowledge products that are expected to be produced as a well as a list of indicators for assessing the development of the knowledge products. The knowledge products “cover different technologies and practices the four priority value chains of Maize, Sorghum, Rice and Livestock, as identified” (CCARDESA, 2018 ). The report also recommended that additional products be developed but from the analysis no new products have been developed and added to the list (See Table 1).

**Table 1. List of knowledge products**

<b>No</b>	<b>Value chain</b>	<b>Knowledge Product</b>	<b>Technology or practice</b>
<b>1</b>	All	Best Bet CSA Practices/Technologies and how to support local decision making for CSA.	Both
<b>2</b>	Maize	Best Bet CSA Practices/Technologies for Maize.	Both
<b>3</b>	Sorghum	Best Bet CSA Practices/Technologies for Sorghum	Both
<b>4</b>	Rice	Best Bet CSA Practices/Technologies for Rice	Both
<b>5</b>	Livestock	Best Bet CSA Practices/Technologies for Livestock	Both
<b>6</b>	Sorghum, Maize, Rice	Climate Smart Soil Amendment Options	Practice
<b>7</b>	Sorghum, Maize	Climate Smart Planting System Options	Practice
<b>8</b>	Sorghum, Maize	Climate Smart Fertiliser Application Options	
<b>9</b>	Sorghum, Maize	Climate Smart Planting System Options	
<b>10</b>	Sorghum, Maize	Climate Smart Land Preparation Options	Both
<b>11</b>	Sorghum, Maize, Rice	Climate Smart Variety Selection	Technology
<b>12</b>	Maize, Sorghum,	Climate Smart Water Management for Maize/Sorghum	Both
<b>13</b>	Rice	Climate Smart Water Management for Rice	Practice
<b>14</b>	Sorghum, Maize, Rice	Climate Smart Agroforestry Options	Practice
<b>15</b>	Sorghum, Maize, Rice	Climate Smart Post Harvest Management Options for Maize & Sorghum	Technology
<b>16</b>	Livestock	Climate Smart Diet Management Options	Practice
<b>17</b>	Livestock	Climate Smart Pasture/Rangeland Management Options	Practice
<b>18</b>	Livestock	Climate Smart Manure Management Options	Practice
<b>19</b>	Livestock	Climate Smart Herd Productivity Improvement Options	Both
<b>20</b>	Livestock	Climate Smart Disease Management Options for Livestock	Both
<b>21</b>	Sorghum, Maize	Identifying Pests and Diseases of Maize and Sorghum and selecting control options	Practice
<b>22</b>	Rice	Climate Smart Pest and Disease Control in Rice	Both
<b>23</b>	All	Options for Improving Adoption of CSA	Both
<b>24</b>	All	Climate Smart Options in Small Scale Fisheries	Both

### **1.1.2 Processes**

Knowledge capture is a core component in knowledge management. For knowledge to be captured effectively it is important to set up: structures for collecting the data; mechanisms and strategies for capturing; and sharing and updating it. The following observations were made regarding data capture and knowledge management processes in the seven CAADP-XP4 implementing countries.

#### *Strengths/Opportunities*

Presence of the CCARDESA SAAIKS hub as well as ministerial websites in each country provides countries with an opportunity to share content in various forms such as PDFs, word documents and videos. In addition, the hub also provides direction on focus areas for sharing content to ensure organization in content collection and sharing. Furthermore, various stakeholders in each country have different established structures for sharing data such as institutional portals as well as structures for sharing data with the public through meetings, social media, websites', libraries and resource centers.

### **1.1.3 Technology**

Communication technologies form a critical component of the knowledge management systems. There are different technologies and tools that are used for capturing, managing and sharing data. Therefore, to improve KM, each country should develop agreed upon technologies and tools for KM. These tools and technologies should include.

- *Intranet infrastructures.* These serve basic communication functions such as emailing, sharing, retrieving and storing data. Examples include local area networking. Each organization is expected to have an intranet infrastructure to improve data capture and KM within the organization.
- *Document and content management systems.* These tools are useful for collecting and managing content and documents throughout their lifecycle such as key words used for searching and accessing various documents and content.
- *Workflow management systems.* These include tools that are used for supporting and executing KM processes and workflows. These include Digital voice recorders, Transcription services and video recorders.
- *Artificial intelligence technologies.* These include tools and algorithms that support access and analysis of data and knowledge products. They include search and retrieval tools, user profiling and matching of profiles, text web mining, and machine learning.
- *Visualization tools.* These are tools that help to support the linkages between knowledge, people and processes. The examples include dashboards and Geographical Information systems.
- *Groupware and collaboration software.* These are tools that supports online interaction which enables communication, data collection and knowledge sharing among people in

different geographic spaces. These tools include D-Groups, Microsoft teams, Dropbox, google drive, Skype and Zoom.

- *E-Learning systems*. These are specialized interactive tools that offer specified content to members and other users (Maier & Hadrach, 2011).

#### *Strengths/ Opportunities*

Almost each of the CAADP-XP4 implementing countries has access to internet which provides an opportunity for using online platforms for capturing, managing and sharing knowledge. In addition, the increased use of social media platforms such as WhatsApp among various stakeholders provides an opportunity for capturing and sharing data. In most organisations, social media platforms such as WhatsApp are already being used for data capture and information sharing. Furthermore, the SAAIKS provides an opportunity for improving information sharing with various countries and stakeholders on different areas including funding opportunities. The linkage of the D-Groups to the CCARDESA website is also an important channel for capturing tacit knowledge as well as sharing of tacit knowledge. The presence of the CCARDESA mobile App as well as increased use of mobile phones among most of the people in these countries provides an opportunity for improving access to information among assist extension agents and other stakeholders. In addition, the mobile App also provides an opportunity for improving data capture.

#### *Weaknesses/ Threats*

None of the countries' websites are linked to the CAARDESA website neither are they linked to various agricultural institutional websites. In addition, most of the countries' websites seem not to be frequently updated and do not contain any information on the Malabo Declaration Commitments and SDGs. Despite the presence and use of social media technologies such as WhatsApp, there are no standards for using these tools for collecting and sharing tacit knowledge from farmers. In most cases these tools are used for collecting and sharing explicit knowledge.

### **1.1.4 Governance**

#### *Strengths/ Opportunities*

There is tremendous support from the governments of all the seven member states towards promoting agricultural development. At least all the countries have an agricultural policy which highlights harmonization and coordination as key to the development of the agricultural sector. In addition, some countries such as Zambia have National Agricultural Statistics systems for coordinating agriculture data capture and KM. Presence of communication policies in some of the countries also provides an opportunity for improving data capture and information sharing.

#### *Weaknesses/Threats*

Absence of agricultural communication policies and strategies on agricultural data capture and knowledge management in most of the countries pose a threat towards harmonization and

standardization of data capture activities at both national and regional level. Lack of these policies and strategies contribute to absence of standardized data capture instruments. Furthermore, it leads to limited commitment by various stakeholders to share their data as there are no clear mechanisms for ensuring data protection. Lastly but not least, most of the countries have no clear guidelines regarding data ownership and copy right, which ultimately affect the ability of stakeholders to share data.

## **1.2 Status of Capturing Information and Knowledge Products in the region**

The stakeholders involved in Capturing Information and Knowledge Products include public institutions such as Ministries of Agriculture and related ministries and agencies; line ministries; farmers and farmers organisations; private industries; non-governmental organisations; academia; agriculture, cooperative, commercial, and central banks; regional coordinators and planners; district and regional disaster management committees; and regional centers (i.e., CCARDESA). Despite the presence of several agricultural stakeholders in Capturing Information and Knowledge Products, for most countries the data collected does not sufficiently assist reporting on the Malabo Declaration commitments and SDGs. This is due to the fact that data capture for this purpose is often perceived as an ad hoc activity, undertaken as part of the biennial review reports submitted to the African Union. The challenges faced by the countries include:

- Insufficient coordination mechanisms and structures among stakeholders, leading to overlap and duplication of activities
- Lack of standard and uniform data capture and consolidation tools, which contributes to inconsistencies in data collection and available data
- Limited capacity (personnel, technology, and expertise)
- Long time lags between surveys and data dissemination in national accounts
- Poor communication regarding recommended data capture methodologies and tools, which leads to use of outdated tools and poor-quality data
- Limited capacity in collecting some types of data, such as weather and climate data
- Lack of budget allocation to support agricultural data capture activities, which leads to dependency on external and donor funding
- Unavailability of standard reporting template
- Absence of standalone policy and legislation on agricultural data, which leads to capture, privacy and protection issues
- Lack of capacity, policy, legislation and knowledge in indigenous data capture, documentation and sharing
- Absence of cybersecurity policies related to agricultural data and knowledge management
- Poor knowledge regarding indicators for Malabo Declaration commitments and SDGs
- Poor internet facilities

In order to overcome these challenges, guidelines for capturing information and knowledge products are required. The primary users of these guidelines will be CCARDESA ICKM focal

point persons, who are responsible for collecting information and knowledge products for the CCARDESA hub.

### **1.3 Methodology**

In order to develop the guidelines and establish the status of information and knowledge products capture and KM in the region, desk research, literature reviews, qualitative and quantitative (Elmendorf & Luloff, 2001). content analysis, key informant interviews, focus group discussion, and consultative workshops with agricultural data capture and KM stakeholders were conducted from January to February 2021. The qualitative data was analyzed using MaxQDA, by means of which themes and subthemes were generated to guide the development of the data capture guidelines.

## **2. Guidelines for capturing Malabo Declaration commitments information and knowledge products**

In 2003, the heads of states and governments of the African Union adopted the Maputo Declaration of the Comprehensive Africa Agriculture Development Programme (CAADP). The goal of the Maputo Declaration is to sustain 6% annual agricultural growth and allocate 10% of the government budget to the agriculture sector. In 2014, the African Union adopted the Malabo Declaration, expressing a commitment to accelerate the economies of African countries through

improving the performance of the agricultural sector by 2025. Specifically, the Malabo Declaration aimed to:

- Implement the CAADP and uphold the 10% target on public spending in agriculture
- End hunger by 2025 through at least a doubling of productivity (focusing on use of inputs for crops, livestock, and fisheries, as well as irrigation and mechanization)
- Reduce post-harvest losses by at least half and reduce stunting and underweight to 10% and 5%, respectively
- Halve poverty by 2025 through inclusive agricultural growth and transformation, to be accomplished through sustained annual agricultural GDP growth of at least 6%
- Establish and/or strengthen inclusive public-private partnerships for at least five priority agricultural commodity value chains with strong linkage to smallholder agriculture, and create job opportunities for at least 30% of the youth in agricultural value chains
- Boost intra-African trade in agricultural commodities and services
- Enhance resilience of livelihoods and production systems to climate variability and other shocks, and ensure that by 2025 at least 30% of farm/pastoral households have this resilience
- Establish mutual accountability through the CAADP framework

Under the Malabo Declaration, a biennial review (BR) was developed. The BR involves tracking, monitoring and reporting on the implementation progress in achieving the provisions of the Malabo Declaration commitments. The BR aims to verify the level of accomplishment of the stipulated targets in each country with regard to the following commitments: (1) country CAADP process, (2) financial investment in agricultural sector, (3) hunger eradication, (4) poverty reduction, (5) inter-Africa trade, (6) resilience to climate change, and (7) capacity to monitor activities and results.

## **2.1 Commitment to CAADP process (Commitment 1)**

The first Malabo Declaration commitment relates to each country's adherence to the CAADP process, i.e., cooperation, partnership and alliances, as well as policy and institutional environment.

### **2.1.1 Country CAADP process**

The socialization of the CAADP process is developed by the Ministry of Agriculture in collaboration with government and non-government agricultural sector stakeholders, other line ministries stakeholders (e.g., ministries of education, health, gender, etc.), private sectors, and donors' community. Additionally, development of the National Agricultural Investment Plan (NAIP) also served as a key communication tool for the socialization of the CAADP process. Finally, NAIP appraisal and progress report and NAIP monitoring, and evaluation framework, and roadmap for Malabo Declarations are under the CAADP process.

### **2.1.2 CAADP-based cooperation, partnership and alliance**

The Malabo Declaration calls for a multi-sector coordination body and multi-stakeholder body to be fully established and operational at the national level by 2018. For example, the establishment of the Agricultural sector coordinating committee, which should be responsible for monitoring the implementation of the multi-stakeholder body and regularly assessing progress made. The multi-stakeholder body terms of reference should be developed, and they indicate the members of the body as well as the activities to be developed by each involved stakeholder. The listed stakeholders in the terms of reference are the key actors of agricultural sector. The terms of reference should indicate that the body should have two ordinary meetings per year in the first and third quarter of each year and extraordinary meetings as needed.

### **2.1.3 CAADP-based policy and institutional review/setting/support**

The Malabo Declaration requires the development and implementation of evidence-based policies and institutions that support the planning and implementation of agricultural activities by 2018. Policies and institutional support under this sub-theme may include strategies and programs for mechanization, irrigation, crop, marketing, livestock production, food production, etc.

### **2.1.4 Guidelines for tracking country CAADP process**

The guidelines for tracking Commitment 1 (country CAADP process) are presented in Table 2. For each sub-theme, the guidelines provide information on the document required, sources/links for the document, and information and knowledge product (news articles, technical briefs, video clips, reports, knowledge products, and others) to be captured to be captured.

**Table 2. Guidelines for capturing information and knowledge products for country CAADP process**

Commitment 1	Information required	Sectors/organisati on/links*	Frequency (Annually, quarterly, monthly, etc.)	Information and knowledge products required				
				News Articles	Technical briefs	Videos clips	Reports	On-track/ not on-track
<i>1.1 Country CAADP Process</i>	Update on tool for domestication of Malabo declaration, national roadmap for Malabo declaration, NAIP appraisal, status on completing new NAIP, annual NAIP's progress report	MOEP, Media	Annually					
<i>1.2 CAADP-based Cooperation, Partnership &amp; Alliance</i>	Update on the existence of multi-sectorial and multi-stakeholder coordination	MOEP, Media	Annually					

	body, meetings/work shops held by the groups, total numbers of attendees							
<i>1.3 CAADP based Policy &amp; Institutional Review/Setting/Support</i>	Update on policies and strategies in the NAIP (TNP), institutions that exist to support policies and strategies, professionals dedicated to agricultural policy planning, implementation and M&E within the Ministry of Agriculture	MOEP, Media, MOA, NARI, NAE	Annually					

*\*MOA: Ministry of Agriculture, MOEP: Ministry of Economic Planning, NARI: National Agricultural Research institutions, NAE: National Agricultural Extension.*

## **2.2 Financial investment in agriculture (Commitment 2)**

The Malabo Monitoring and Evaluation Mechanism established four main areas to be monitored under the financial investment in agriculture sector, namely (1) public expenditures in agriculture, (2) domestic private sector investment in agriculture, (3) foreign private sector investment in agriculture, (4) access to finance.

### **2.2.1 Public expenditures in agriculture**

This is intended to ensure that countries allocate enough funds for agriculture in their national budgets. It is also intended to ensure that donors are delivering on their financial commitments to support national plans. The stipulated targets are: to increase public expenditures to agriculture to at least 10% of national expenditures by 2025; to ensure adequate intensity of agricultural spending by keeping annual public agriculture expenditure as percentage of agriculture value added to no less than (or at a minimum of) 19% by 2025; and to ensure that official development assistance (ODA) committed to implement the NAIPs is fully disbursed to countries by 2025.

### **2.2.2 Domestic private sector investment in agriculture**

The goal is to put in place or strengthen a mechanism to attract private domestic private investment in agriculture. Private sector investment is defined as any use of private sector resources intended to increase future production output or income, to improve the sustainable use of agriculture-related natural resources (soil, water, etc.), to improve water or land management, etc. Increased investment is seen as the predominant source of economic growth in agricultural and other economic sectors.

### **2.2.3 Foreign private sector investment in agriculture**

As above, the goal is to put in place or strengthen a mechanism to attract foreign private investment in agriculture. Private sector investment is critical because it indicates that the investors anticipate a positive financial return, and therefore is likely to lead to sustainable increases in agricultural production.

### **2.2.4 Access to finance**

This is intended to provide smallholder farmers/rural households with increased access to financial services for the purposes of transacting business (purchasing inputs, machinery, storage, technologies, etc.). Use of financial services is considered critical for increasing smallholder agricultural productivity. Financial services include saving accounts, credit, digital payments, microfinance, and insurance. The evidence is clear that women are less likely than men to use any of these services. Continued dependence on cash perpetuates the marginalization of the poor and inhibits their ability to take advantage of economic opportunities within and outside of agriculture, as well as to absorb shocks without falling deeper into poverty.

### **2.2.5 Guidelines for tracking Financial investment in agriculture**

The guidelines for tracking Commitment 2 are presented in Table 3. The information to be captured is explained in the guidelines for tracking Commitment 1, on page 14.

**Table 3. Guidelines for capturing information and knowledge products for financial investment in agriculture**

Commitment 2	Information required	Sectors/ organisation /links*	Frequency (Annually, quarterly, monthly, etc.)	Information and knowledge products required				
<i>2.1 Public Expenditures to Agriculture</i>	Update on expenses on different functions of government, Official Development Assistance (ODA) contributions to agriculture functions	MOF, IMF, Statistics, MOEP, ReSAKSS, Media	Annually	News Articles	Technical briefs	Videos clips	Reports	On-track/ not on-track
<i>2.2 Domestic Private Sector Investment in Agriculture</i>	Update on domestic and private sectors that show their contributions to agriculture (crops, animals, agrobusiness, water and	MOF, IMF, Statistics, MOEP, FAO, OECD	Annually					

	land management)							
<i>2.3 Foreign Private Sector Investment in Agriculture</i>	Update on foreign and private sectors that show their contributions to agriculture (crops, animals, agrobusiness, water and land management)	MOF, IMF, Statistics, MOEP, FAO, OECD, IFPRI, Media	Annually					
<i>2.4 Access to finance</i>	Update on financial services that include savings accounts, credit, digital payments, microfinance and insurance used by small-scale farmers	MOF, MOA, MOEP, NAE, NARI	Annually					

*\*MOA: Ministry of Agriculture, MOEP: Ministry of Economic Planning, MOF: Ministry of Finance, Statistics: Bureau of Statistics, NARI: National Agricultural Research institutions, NAE: National Agricultural Extension, IMF: International Monetary Fund, OECD: Organisation for Economic Co-operation and Development, FAO: Food and Agricultural Organisation, IFPRI: International Food Policy Research*

## **2.3 Hunger eradication (Commitment 3)**

The Malabo Declaration established the following areas relating to hunger eradication to be evaluated and monitored: (1) access to agriculture inputs and technologies, (2) agricultural productivity, (3) post-harvest loss, (4) social protection and food security.

### **2.3.1 Access to agriculture inputs and technologies**

The goal is to promote utilization of cost-effective and quality agricultural inputs, irrigation, mechanization, and agrochemicals for crops, fisheries, livestock and forestry to boost agricultural productivity. Specifically, the Malabo Declaration stipulates:

- At least 50 kilograms of fertilizer is to be used per hectare of arable land by 2025. The use of fertilizer is vital to increasing agricultural productivity.
- The size of irrigated areas (as per its value observed in the year 2000) is to be increased by 100% by the year 2025.
- A 100% increase in levels of quality agricultural inputs for crops (seed), livestock (breed), and fisheries (fingerlings), by the year 2025.
- An increase in the level of investments in agricultural research and development to at least 1% of the agricultural GDP by 2025.
- Ensuring that 100% of farmers and agribusiness interested in agriculture have rights to access the required land. Farmers are to have access to agricultural advisory services (ASS) that provide locally relevant knowledge, information and other services through training, information sharing, and other extension support-related services. The AAS can be provided through public extension services, agribusiness private companies, CSOs, farmers' organisations, and cooperatives, and can be organized through physical training, ICT, video, pamphlet, training school, farms, etc. The involvement of the private sector can be explored in order to improve the coverage of extension services among agricultural producers.
- A system for collecting data regarding the required quality inputs, as well as the quantity supplied of quality inputs for crops, livestock and fisheries, should be established.

### **2.3.2 Agricultural productivity**

Agriculture value added per hectare of land is a measure of agricultural productivity. Agriculture comprises value added from forestry, hunting, and fishing, as well as cultivation of crops and livestock production. Malabo Declaration targets are:

- Double the current agricultural land productivity levels by the year 2025, based on the agriculture value added per hectare of arable land. The use of quality inputs such as fertilizer is a key for achieving high levels of agricultural land productivity.
- Double the current agricultural yield levels by the year 2025. The objective of doubling crop yield by 2025 should be accompanied by efforts toward risk reduction, such as

investment in irrigation systems. Agriculture yields should also include increased production of fisheries and poultry through reduced disease.

### **2.3.3 Post-harvest loss**

Regarding the post-harvest loss, the Malabo Declaration stipulated the following targets:

- Halve the current levels of post-harvest losses by the year 2025.
- Provide logistics support to all stages of the food production chain (field/harvest, storage, processing, transportation, final retail market) to limit degradation both in quantity and in quality of the produced food.

### **2.3.4 Social protection**

Integrate measures for increased agricultural productivity with social protection initiatives focusing on vulnerable social groups through targeted budget lines.

### **2.3.5 Food security and nutrition**

Promote initiatives to improve nutritional status and, in particular, eliminate hunger and child malnutrition in Africa. Specific goals are to reduce stunting, low weight, and wasting in children, and to improve dietary diversity for women and children. A multi-sectoral action plan for the improvement of food security and nutrition should be developed, specifically aimed at reducing chronic malnutrition in children aged 0-5. The action plan should (1) strengthen interventions to help pregnant women, (2) strengthen nutritional activities aimed at children in the first two years of life, (3) strengthen activities with an impact on the nutritional status of adolescents, and (4) improve household food security through the promotion of foods of high nutritional value.

### **2.3.6 Food safety**

Unsafe food, caused by foodborne diseases, thwarts food security efforts across food systems. Therefore, food safety standards should be set by member states to decrease the incidence of foodborne disease and reduce rejection of African food products in trade. To achieve this, AU member states are expected to follow the Food Safety Index, prioritise and invest in food safety, and have an enhanced understanding and ability to manage foodborne diseases.

Food can be made unsafe by bacteria such as listeria, viruses, pesticide residues, and natural toxins such as cyanide in cassava and aflatoxins in staple crops like maize and groundnuts. Policymakers should be educated about food safety challenges, and the links between these and other development areas such as the economy, health and gender equality.

### **2.3.7 Guidelines for tracking hunger eradication**

The guidelines for tracking hunger eradication are presented in Table 4. The information to be captured is explained in the guidelines for tracking Commitment 1, on page 14.

**Table 4. Guidelines for capturing information and knowledge products for hunger eradication**

Commitment 3	Information required	Sectors/ organisation /links*	Frequency (Annually, quarterly, monthly, etc.)	Information and knowledge products required				
3.1 Access to Agriculture Inputs and Technologies	Update on access to agriculture inputs and technology (fertilizers, permanent crops area, areas under irrigation, quality seed of improved varieties, improved breeds, improved fingerlings, livestock, fish, fishponds. Agriculture extension	MOF, IMF, Statistics, MOEP, MOA, FAO, OECD, NARI, NAE, WB, IFPRI, Media	Annually, monthly, quarterly, etc.	News Articles	Technical briefs	Videos clips	Reports	On-track/ not on-track

	<p>work to farmers, involved in crop production, livestock, fishery, and forestry.</p> <p>Agriculture research and development spending (salaries, program and operation costs, capital investments, etc.).</p> <p>Demographic data, agricultural census, land ownership by gender.</p> <p>Household survey data</p>							
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<p><i>3.2 Agricultural Productivity</i></p>	<p>Update on agriculture production and value addition for forestry, hunting, arable land, yield data, released technologies, technologies disseminated</p>	<p>MOF, IMF, Statistics, MOEP, MOA, FAO, OECD, NARI, NAE, IFPRI, WB, Media</p>	<p>Annually, monthly, quarterly, etc.</p>					
<p><i>3.3 Post-Harvest Loss</i></p>	<p>Update on lost occurring during all the phases of the post-harvest system for priority products. Losses that occur during harvesting, storage, transport, processing,</p>	<p>MOA, Statistics, WHO, MOEP, APHLIS, IFPRI, Media</p>	<p>Annually, monthly, quarterly, etc.</p>					

	packaging and sales.							
<i>3.4 Social Protection</i>	Update on budget allocation for social protection in form of cash transfers or food and cash reserves, social protection in form of school feeding, social protection of agriculture, cash transfers for protective services for water	Statistics, MOEP, MOF, IFPRI, FAO	Annually, monthly, quarterly, etc.					

	services, livestock, national pension scheme, orphans and vulnerable							
<i>3.5 Food Security and Nutrition</i>	Update on population in the country with a level of Dietary Energy Consumption, Minimum dietary diversity for children and women	Statistics, MOEP, MOF, FAO, IFPRI, Media						
<i>3.6 Food Safety</i>	Update on foodborne diseases, organisations working with food safety	MOA, Statistics, IFPRI, Media	Annually					

*\*MOA: Ministry of Agriculture, MOEP: Ministry of Economic Planning, MOF: Ministry of Finance, Statistics: Bureau of Statistics, NARI: National Agricultural Research institutions, NAE: National Agricultural Extension, IMF: International Monetary Fund, OECD: Organisation for Economic Co-operation and Development, FAO: Food and Agricultural Organisation, WB: World Bank, WHO: World Health Organisation, APHLIS: African Postharvest Losses Information System, IFPRI: International Food Policy Research Institute*

## **2.4 Eradicating poverty through agriculture (Commitment 4)**

Under poverty reduction, the Malabo Declaration provides stipulations regarding agricultural GDP, inclusive public-private partnerships for commodity value chains, youth jobs in agriculture, and women's participation in agriculture.

### **2.4.1 Agricultural GDP and poverty reduction**

The declaration calls for sustained annual agricultural GDP growth of at least 6% by the year 2025. This is to be measured by the growth rate of agricultural value added in constant US dollars. The use of improved agricultural inputs, coupled with the development of agricultural value chains and an improvement in agricultural market access, can increase the agricultural GDP.

### **2.4.2 Inclusive public-private partnerships (PPPs) for commodity value chains**

The goal is to promote PPP arrangements that link smallholder farmers to value chains of priority agricultural commodities. This can be determined through the number of smallholders supplying produce through target groups to target buyers, or through the volume of trade (in terms of value) between smallholders and target buyers. The specific goal is to reduce poverty by decreasing the gap between the wholesale price and the farmgate price by 50% by the year 2025.

### **2.4.3 Youth jobs in agriculture**

The declaration calls for creating job opportunities in agricultural value chains for at least 30% of the youth by the year 2025. The engagement of youth in the agricultural sector can contribute to the reduction of unemployment and poverty. Creating skills development opportunities for young people (both female and male) through technical and vocational education and training (TVET) in agricultural value chains is key to triggering entrepreneurship among African youth.

### **2.4.4 Women's participation in agriculture**

Promotion of initiatives that facilitate preferential entry and participation of women in gainful and attractive agri-business opportunities. Women's participation in agriculture involves five domains of empowerment (5DE): (1) decision-making power regarding agricultural production, (2) access to and decision-making power regarding productive resources, (3) control of income, (4) leadership in the community, (5) time allocation. The commitment asks that 20% of rural women have access to productive assets – including land, credit, inputs and financial services –and information (empowered) by 2025.

### **2.4.5 Guidelines for tracking eradicating poverty through agriculture**

The guidelines for tracking Commitment 4 are presented in Table 5. The information to be captured is explained in the guidelines for tracking Commitment 1, on page 14.

**Table 4. Guidelines for capturing information and knowledge products for eradicating poverty through agriculture**

Commitment 4	Information required	Sectors/organisati on/links*	Frequency (Annually, quarterly, monthly, etc.)	Information and knowledge products required				
				News Articles	Technical briefs	Videos clips	Reports	On-track/ not on-track
<i>4.1 Agricultural GDP and Poverty Reduction</i>	Update on wholesale price, farmgate price, hunting, fishing, crops, livestock production.	Statistics, MOF, MOEP, MOA, IFPRI, Media	Annually					
<i>4.2 Inclusive Public-Private Partnerships (PPPs) for Commodity Value Chains</i>	Update on small agriculture and value chains, commodity value chains	MOTI, MOF, MOEP, Statistics, UNIDO, ILO, Media MOC	Annually, monthly, quarterly, etc.					
<i>4.3 Youth Jobs in Agriculture</i>	Update on youth in agriculture, jobs for youth, skills for	MOE, MOWY, Statistics, Media, MOA,	Annually, monthly, quarterly, etc.					

	youth, jobs created by youth	MOEP EDU						
<i>4.4 Women's Participation in Agriculture</i>	Update on empowerment of rural and urban women in agriculture (including decisions, leadership, creating jobs, employability, etc.)	Statistics, WTO, MOA, MOEP EDU						

*\*MOA: Ministry of Agriculture, MOEP: Ministry of Economic Planning, MOF: Ministry of Finance, Statistics: Bureau of Statistics, EDU: Education institutions, MOGY: Ministry of Gender and Youth, MOTI: Ministry of Transport and Infrastructure, MOC: Ministry of Commerce, WTO: World Trade Organisation, IFPRI: International Food Policy Research Institute, ILO: International Labour Organisation.*

## **2.5 Intra-African trade (Commitment 5)**

Regarding intra-Africa trade, the Malabo Declaration defined the following targets: (1) triple intra-African trade in agricultural commodities and services by the year 2025; (2) fully establish trade facilitation measures by reaching 100% of Trade Facilitation Index by 2025, (3) reduce the domestic food price volatility index to less than 7.5% by 2025. This commitment also includes intra-Africa trade policies and institutional conditions.

### **2.5.1 Intra-African trade in agriculture commodities and services**

In order to promote trade with other African states, countries should sign agreements on trade protocol, create bilateral trade agreements, negotiate trade openness, and eliminate tariffs on goods and agricultural products. Total agricultural imports from African countries are expressed in terms of value, in constant US dollars. All movements of agricultural goods and services into the country from African countries during the reference period are covered. This includes commercial trade, food aid granted on specific terms, donated products, and estimates of unrecorded trade.

### **2.5.2 Intra-African trade policies and institutional conditions**

Commitment 5 also calls for the creation and enhancement of regional and continental policies, as well as institutional conditions and support systems, to simplify and formalize the current trade practices to achieve a tripling of intra-African trade. This includes the promotion of the African Common Position on agriculture-related international trade negotiations and partnership agreements.

Trade facilitation involves the reduction of transaction costs associated with institutional/non-tariff barriers in order to facilitate trans-border movements of goods and services. All of the interrelated measures involved in trade facilitation go beyond the agriculture sector, but they contribute significantly to the trade of agriculture commodities and services. To reach 100% of the trade facilitation index by 2025, countries should have sound policies in the following areas: physical infrastructure, information and communication technology, border administration, bilateral agricultural trade-related agreements, visa-free entry, and immigration.

### **2.5.3 Guidelines for tracking intra-African trade**

The guidelines for tracking Commitment 5 are presented in Table 6. The information to be captured is explained in the guidelines for tracking Commitment 1, on page 14.

**Table 5. Guidelines for capturing information and knowledge products for intra-African trade**

Commitment 5	Information required	Sectors/organisation/links*	Frequency (Annually, quarterly, monthly, etc.)	Information and knowledge products required				
<i>5.1 Intra-African Trade in Agriculture Commodities and Services</i>	Update on agricultural imports, movements of agricultural goods (food, food products, raw materials) and services across countries	Statistics, WTO, MOF, UNCTAD, Media, RECs	Monthly	News Articles	Technical briefs	Videos clips	Reports	On-track/ not on-track
<i>5.2 Intra-African Trade Policies and Institutional Conditions</i>	Update on physical infrastructure captures the availability and quality of transport infrastructure required to facilitate the	WB, Statistics, MOA, Immigration department, Media, MOEP MOF	Annually, monthly					

	within- country and cross-border movement of goods, quality of roads, airports, seaports, railways, ICT, immigration, bilateral agriculture, border administratio n, availability of latest technology							
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*\*MOA: Ministry of Agriculture, MOEP: Ministry of Economic Planning, MOF: Ministry of Finance, Statistics: Bureau of Statistics, WB: World Bank, WTO: World Trade Organisation, UNCTAD: United Nations Conference on Trade and Development, RECs: Regional Economic Communities of the African Union.*

## **2.6 Resilience to climate change (Commitment 6)**

Climate change affects agricultural production and productivity, as well as other economic sectors. Therefore, countries should include climate considerations in their policies. These may include poverty reduction, agricultural development, gender and youth, and others. Under the Malabo Declaration, resilience to climate-related risks, investment in building resilience, and estimating progress with regard to budget lines are the sub-themes under Commitment 6.

### **2.6.1 Resilience to climate-related risks**

Resilience refers to the ability of people, households, communities, countries and systems to mitigate, adapt to and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth. Commitment 6 takes into account a number of different areas in promoting resilience-building to reduce vulnerabilities and protect the livelihoods of the African population

### **2.6.2 Investment in resilience building**

Enhancing investment for resilience-building initiatives protects households and vulnerable social groups, as well as vulnerable ecosystems. Government spending on resilience-building initiatives refers to the total program, including benefits and administrative costs.

### **2.6.3 Estimating progress on availability of budget lines on resilience building**

These budget lines include funding for establishing disaster preparedness policy and strategy, and for its full implementation.

### **2.6.4 Guidelines for tracking resilience to climate change**

The guidelines for tracking Commitment 6 are presented in Table 7. The information to be captured is explained in the guidelines for tracking Commitment 1, on page 14.

**Table 6. Guidelines for capturing information and knowledge products for resilience to climate change**

<b>Commitment 6</b>	<b>Information required</b>	<b>Sectors/organisati on/links*</b>	<b>Frequency (Annually, quarterly, monthly, etc.)</b>	<b>Information and knowledge products required</b>				
<i>6.1 Resilience to Climate-Related Risks</i>	Update on agriculture area under sustainable land management (SLM). These include number of farm, pastoral, and fisher households, income and food access, access to basic social services, agricultural practice and technology, climate change sensitivity, agronomic measures, vegetative measures, structural	Statistics, MOA, MOEP, Media, FAO, TerrAfrica	Annually, quarterly, monthly, etc.	News Articles	Technical briefs	Videos clips	Reports	On-track/ not on-track

	measures, management measures, and total agriculture land area							
<i>6.2 Investment in Resilience Building</i>	Update on government spending on resilience building initiatives, and disaster preparedness policy, strategy, and implementation	Statistics, MOEP, MOF, FAO Statistics, Media	Annually					
<i>6.3 Estimating Progress on Availability of Budget Lines on Resilience Building</i>	Update on budget on resilience building	MOF, MOEP, Statistics, Media	Annually					

*\*MOA: Ministry of Agriculture, MOEP: Ministry of Economic Planning, MOF: Ministry of Finance, Statistics: Bureau of Statistics, FAO: Food and Agricultural Organisation*

## **2.7 Mutual accountability for actions and results (Commitment 7)**

There are three targets under the Malabo Declaration regarding the monitoring of activities:

- Develop the capacity to generate and use agriculture statistical data and information by 2025
- Foster alignment, harmonization and coordination among multi-sectorial efforts and multi-institutional platforms for peer review, mutual learning, and mutual accountability
- Conduct a biennial agriculture review that involves tracking, monitoring and reporting progress made in implementing the Malabo Declaration.

### **2.7.1 Country capacity for evidence-based planning, implementation, monitoring and evaluation**

Agricultural and rural statistics systems assess four dimensions, each comprising an aggregation of a number of different elements/components: (1) institutional infrastructure; (2) resources; (3) statistical methods and practices; (4) availability of statistical information. The indicator has been developed as part of a global strategy to develop agricultural and rural statistics and is used in other regions in the world.

### **2.7.2 Peer review and mutual accountability**

States should establish mechanisms and systems to measure, track and report performance of member states with respect to progress on Malabo commitments.

### **2.7.3 Biennial agriculture review process**

The last target is to conduct a biennial agriculture review that involves tracking, monitoring and reporting progress made in implementing the Malabo Declaration, by availing the regular country biennial report to the AU Assembly.

### **2.7.4 Guidelines for tracking mutual accountability for actions and results**

The guidelines for tracking Commitment 7 are presented in Table 8. The information to be captured is explained in the guidelines for tracking Commitment 1, on page 14.

**Table 7. Guidelines for capturing information and knowledge products for Malabo Declaration Commitment 7**

Commitment 7	Information required	Sectors/organisation/links	Frequency (Annually, quarterly, monthly, etc.)	Information and knowledge products required				
<i>7.1 Country Capacity for Evidence-Based Planning, Implementation, Monitoring and Evaluation</i>	Update on capacity of countries to generate, analyze and use data, information, knowledge and innovations, capacity to generate and use agriculture statistical data and information, agriculture statistics indicator	MOF, MOEP, Statistics, AfDB, Media	Annually	News Articles	Technical briefs	Videos clips	Reports	On-track/not on-track
<i>7.2 Peer Review and Mutual Accountability</i>	Update on the creation of an institutionalized mechanism and platform for	MOEP, MOA, CAADP focal point person,	Annually					

	mutual accountability, supporting evidence-based review and dialogue on the implementation of the NAIP and other agricultural commitments	Statistics, country JSR, Media						
<i>7.3 Biennial Agriculture Review Process</i>	Update on Biennial Report	MOEP, MOA, RECs	Annually					

*\*MOA: Ministry of Agriculture, MOEP: Ministry of Economic Planning, Statistics: Bureau of Statistics, JRS: Joint Sector Review, AfDB: Africa Development Ba*

### **3. Guidelines for capturing Sustainable Development Goals information and knowledge products**

The Sustainable Development Goals (SDGs) were adopted by all United Nations member states in 2015. Together, they provide a blueprint for peace and prosperity for people and the planet, now and into the future. Of the 17 SDGs, three SDGs (1, 2, and 13) are either directly or indirectly linked to agriculture and climate change.

#### **3.1 End poverty in all its forms everywhere (SDG 1)**

Agriculture remains a main source of livelihood, especially for rural communities. Growth in the agricultural sector, particularly in low-income and agrarian economies, is at least twice as effective in reducing hunger and poverty than in any other sector. The SDG Monitoring and Evaluation Mechanism established 7 targets to be monitored under the ending poverty in all its forms. Of the 7 targets, four targets (target 1.1 eradicate extreme poverty for all people everywhere by 2030, target 1.3 implement nationally appropriate social protection systems and measures for all by 2030, target 1.4 ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, basic services, etc. by 2030, and target 1.5 building the resilience of the poor and those in vulnerable situations to climate-related extreme events by 2030) are directly or indirectly related to climate change.

##### **3.1.1 Eradicate extreme poverty for all people everywhere by 2030 (Target 1.1)**

The 2030 Agenda recognizes that eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development. Target 1.1 calls for eradicating extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day.

##### **3.1.2 Implement nationally appropriate social protection systems and measures for all by 2030 (Target 1.3)**

Countries should implement nationally appropriate social protection systems and measures for all, including the poor and the venerable by 2030. The social protection systems should also protect the poor and the vulnerable from climate change.

##### **3.1.3 Ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, basic services, etc. by 2030 (Target 1.4)**

Economic resources, basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services including microfinance are equal rights for men, women, poor, and the vulnerable. Countries should be on track to achieve these equal rights by 2030, and these can be achieved through investment in agriculture.

### **3.1.4 Building the resilience of the poor and those in vulnerable situations to climate-related extreme events by 2030 (Target 1.5)**

Countries should have effective adaptation and disaster risk reduction measures to reduce the economic and social impact of natural disasters, including extreme climate events, on agriculture and rural areas. The economic measurements of this indicator would track crop and animal production losses associated with climate and non-climate-related events, primarily through utilizing real-time remote sensing technology as the core of high-resolution agricultural monitoring systems. Countries are expected to meet this target 1.5 by 2030.

### **3.1.5 Guidelines for tracking end poverty (SDG1)**

The guidelines for tracking SDG 1 are presented in Table 9. For each target, the guidelines provide information on the document required, sources/links for the document, and information and knowledge product (news articles, technical briefs, video clips, reports, and others) to be captured.

**Table 8. Guidelines for capturing information and knowledge products for ending poverty in all its forms everywhere (SDG 1)**

End poverty in all its forms everywhere (SDG 1)	Information required	Sectors/organisations/links	Frequency (Annually, quarterly, monthly, etc.)	Information and knowledge products required				
<i>Target 1.1: By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day</i>	Update on Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)	<a href="https://sdgs.un.org/goals/goal1">https://sdgs.un.org/goals/goal1</a> MOEP, MOA Statistics, Media	Annually, quarterly, monthly, etc.	News Articles	Technical briefs	Videos clips	Reports	On-track/ not on-track
<i>1.3: Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the</i>	Update on Proportion of population covered by social protection floors/system, by sex, distinguishing children, unemployed	<a href="https://sdgs.un.org/goals/goal1">https://sdgs.un.org/goals/goal1</a> MOEP, MOGY, Statistics, Media						

<i>poor and the vulnerable</i>	persons, older persons, persons with disabilities, pregnant, women, newborns, work-injury victims and the poor and the vulnerable							
<i>1.4: By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new</i>	Update on 1) Proportion of population living in households with access to basic services. 2) Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their	<a href="https://sdgs.un.org/goals/goal1">https://sdgs.un.org/goals/goal1</a> MOEP, MOA, MOGY, Statistics, Media, NAE						

<i>technology and financial services, including microfinance</i>	rights to land as secure, by sex and by type of tenure							
<i>Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters</i>	Update on the number of deaths, missing persons and persons affected by disasters per 100,000 people	<a href="https://sdgs.un.org/goals/goal1">https://sdgs.un.org/goals/goal1</a> MOWN, Statistics, Media	Annually, quarterly, monthly, etc.					

*\*MOA: Ministry of Agriculture, MOEP: Ministry of Economic Planning, Statistics: Bureau of Statistics, MOGY: Ministry of Gender and Youth, NAE: National Agricultural Extension.*

### **3.2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture (SDG 2)**

Improving agricultural productivity is key to ending hunger. Food insecurity and malnutrition need to be comprehensively addressed, while simultaneously promoting sustainable agriculture to attain zero hunger. Transformation of food systems and agriculture is essential for ensuring that enough food is produced to feed the growing population through sustainable utilization of the planet's resources. SDG 2 has five targets that are directly to agriculture namely, 1) end hunger and ensure access to safe and , nutritious food by all people by 2030, 2) end all forms of malnutrition by 2030, 3) double the agricultural productivity and incomes of small scale food producers by 2030, 4) ensure sustainable food production systems and implement resilient agricultural practices by 2030, and 5) maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species by 2020.

#### **3.2.1 End hunger and ensure access to nutritious food by all people by 2030 (Target 2.1)**

Ensuring that all people have access to safe, nutritious and sufficient food all year round is inextricably linked to poverty eradication and, as such, addressing undernutrition is indivisible from addressing poverty. Growth in agriculture is effective in reducing poverty, therefore, countries should increase their investment in agriculture to meet the target 2.1 of ending hunger as ensuring access to nutritious food by all people by 2030

#### **3.2.2 End all forms of malnutrition by 2030 (Target 2.2)**

Malnutrition remains one of the main contributors the diseases in developing countries. Agriculture influences mental, emotional and physical health directly through its ability to provide a sufficient quantity of nutritious foods for direct household consumption or in the marketplace. Quality food and nutrition status is a fundamental and crucial driver for health and well being. Countries should promote sustainable agriculture practice to end all forms of malnutrition, because unsustainable agricultural practices can constrain or even counteract healthy lives as a result of soil degradation and water pollution due to excessive use of chemicals and poor crop and livestock management practices.

#### **3.2.3 Double the agricultural productivity and incomes of small scale food producers by 2030 (Target 2.3)**

The most obvious ways to increase agricultural productivity are to expand access to irrigation and to increase the use of synthetic fertilisers and pesticides. Doubling agricultural productivity and incomes can reduce poverty; key among these are increased incomes and associated multiplier effects stimulating employment in the rural and urban non-farm sectors through forward and backward linkages. Therefore, countries should invest in irrigation and production of farm inputs such as fertilisers and pesticides in order to meet target 2.3 by 2030.

### **3.2.4 Ensure sustainable food production systems and implement resilient agricultural practices by 2030 (Target 2.4)**

Progress in working towards the SDG goal 2 of zero hunger is highly dependent on progress in ensuring availability and sustainable management of water and environment. Agriculture is by far the main water user, and irrigated agriculture accounts for 70% of the water use. Irrigation, pesticides, herbicides, and fertilizers increase agriculture productivity. But unless carefully planned and managed, these inputs have the potential to undermine the availability, sustainability and quality of water for agriculture and for other water users.

### **3.2.5 Maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species by 2020 (Target 2.5)**

For reinforcing target 2.5, sustainable ecological processes need to be supported, without adverse impacts on land, water and biodiversity and without further deforestation and associated biodiversity losses and climate change impacts. Other areas of target 2.5 to be maintain are the conservation of genetic diversity of seeds, plants and animals.

### **3.2.6 Guidelines for tracking end poverty (SDG 2)**

The guidelines for tracking SDG 2 are presented in Table 10. The information to be captured is explained in the guidelines for tracking SDG 1, on page 44.

**Table 9. Guidelines for capturing information and knowledge products for ending hunger, achieve food security and improved nutrition and promote sustainable agriculture (SDG 2)**

<b>End Hunger (SDG 2)</b>	<b>Information required</b>	<b>Sectors/organisation/links</b>	<b>Frequency (Annually, quarterly, monthly, etc.)</b>	<b>Information and knowledge products required</b>				
<i>2.1: By 2030, end hunger and ensure access by all people, in particular, the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round</i>	Update on Prevalence of undernourishment	<a href="https://sdgs.un.org/goals/goal2">https://sdgs.un.org/goals/goal2</a> MOA, MOEP, Statistics	Annually, quarterly, monthly, etc.	News Articles	Technical briefs	Videos clips	Reports	On-track/ not on-track
<i>2.2: By 2030, end all forms of malnutrition, including achieving, by 2025, the internally agreed targets on stunting and wasting in</i>	Update on 1) Prevalence of stunting (height for age < -2 standard deviation from the median of WHO Child Growth	<a href="https://sdgs.un.org/goals/goal2">https://sdgs.un.org/goals/goal2</a> MOA, MOEP, Statistics						

<p><i>children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons</i></p>	<p>Standards among children under five years of age</p> <p>2) Prevalence of malnutrition (weight for height &gt;+2 or &lt;-2 standard deviation from the median of the WHO Child Growth Standards among children under five years of age, by type (wasting and overweight)</p>							
<p><i>2:3 By 2030, double the agricultural productivity and incomes of small scale food</i></p>	<p>Update on 1) Volume of production per labour unit by classes of farming/pastor</p>	<p><a href="https://sdgs.un.org/goals/goal2">https://sdgs.un.org/goals/goal2</a> MOA, MOEP,</p>						

<p><i>producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and nonfarm employment</i></p>	<p>al/forestry enterprise size</p> <p>2) Average income of small scale food producers, by sex and indigenous status</p>	<p>Statistics, MOGY</p>						
<p><i>2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that</i></p>	<p>Update on Proportion of agricultural area under productive and sustainable agriculture</p>	<p><a href="https://sdgs.un.org/goals/goal2">https://sdgs.un.org/goals/goal2</a> MOA, MOEP, Statistics, NAE, NARI</p>						

<p><i>help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality</i></p>								
<p><i>2.5: By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international</i></p>	<p>Update on 1) plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities  2) Proportion of local breeds classified as</p>	<p><a href="https://sdgs.un.org/goals/goal2">https://sdgs.un.org/goals/goal2</a> MOA, MOEP, Statistics, FAO NAE NARI</p>						

<i>levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed</i>	being at risk of extinction							
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*\*MOA: Ministry of Agriculture, MOEP: Ministry of Economic Planning, Statistics: Bureau of Statistics, NARI: National Agricultural Research institutions, NAE: National Agricultural extension, MOGY: Ministry of Gender and Youth, FAO: Food and Agricultural Organisation*

### **3.3 Take urgent action to combat climate change and its impacts (SDG 13)**

The agriculture sector plays a key role in addressing the challenges of climate change. Despite the threats posed by climate change to agricultural production systems, investments in the sector can support both climate change adaptation and mitigation at the same time, improving the livelihoods of billions of rural people that rely on the sector.

#### **3.3.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries (Target 13.1)**

Target 13.1 calls for integration of disaster risk reduction across sector including agriculture, food security and nutrition. Key to this target is how effective is disaster risk reduction is integrated in agriculture strategies and food sector management.

#### **3.3.2 Integrate climate change measures into national policies, strategies and planning (Target 13.2)**

The target calls for countries to operationalize agriculture and food security policies or strategies and plans that address adaptation and mitigation of climate change.

#### **3.3.3 Improve education awareness-raising and human and institutional capacity and climate change mitigation, adaptation, impact reduction and early warning (Target 13.3)**

This target ensures that countries integrate climate change in agriculture and food security curricula. Countries should build capacity in agriculture and food security deal with climate change.

#### **3.3.4 Guidelines for tracking SDG 13**

The guidelines for tracking SDGs are presented in Table 11. The information to be captured is explained in the guidelines for tracking SDG 1, on page 44.

**Table 10. Guidelines for capturing information and knowledge products for SDG 13**

<b>SDG 13</b>	<b>Information required</b>	<b>Sectors/organisation /links</b>	<b>Frequency (Annually, quarterly, monthly, etc.)</b>	<b>Information and knowledge products required</b>				
<i>13.1: Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries</i>	Update on number of deaths, missing persons and persons affected by disaster per 100,000 people	<a href="https://sdgs.un.org/goals/goal13">https://sdgs.un.org/goals/goal13</a> Statistics, MOE, MOF, NARI, MOA, NAE, MOEP	Annually, quarterly, monthly, etc.	News Articles	Technical briefs	Videos clips	Reports	On-track/ not on-track
<i>13.2: Integrate climate change measures into national policies, strategies and planning</i>	Update on the proportion of local governments that adopt and implement risks reduction strategies	<a href="https://sdgs.un.org/goals/goal13">https://sdgs.un.org/goals/goal13</a> Statistics, MOEP						
<i>13.3: Improve education, awareness-</i>	Update on the number of institutions	<a href="https://sdgs.un.org/goals/goal13">https://sdgs.un.org/goals/goal13</a>						

<i>raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</i>	with curricula involving climate change	Statistics, MOE, MOF, NARI, MOA, NAE, MOEP, MOE, MOWNR						
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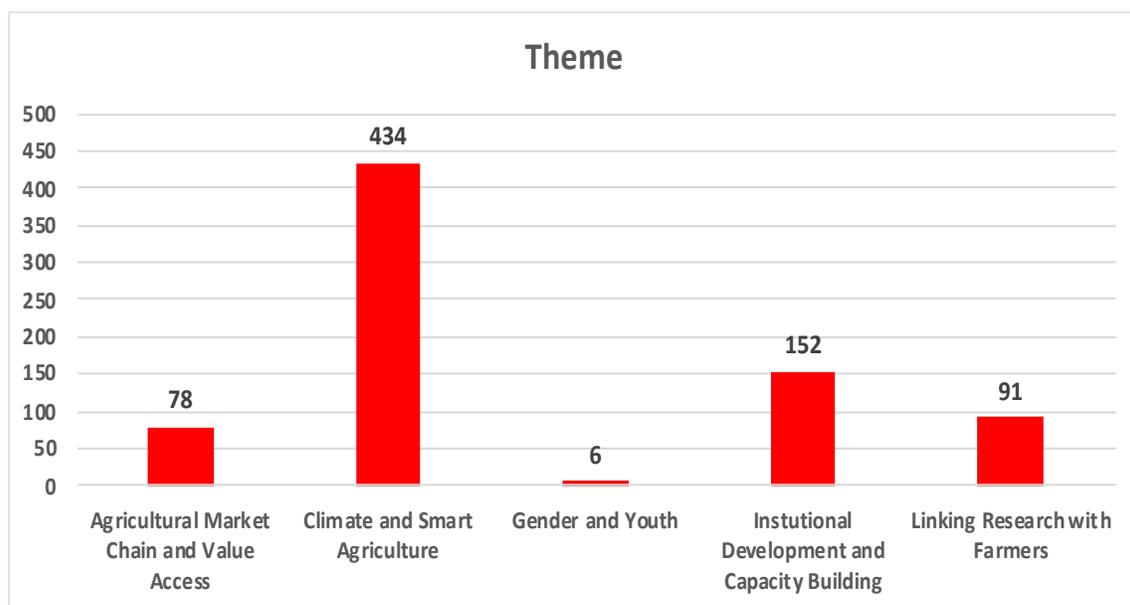
*\*MOA: Ministry of Agriculture, MOEP: Ministry of Economic Planning, MOF: Ministry of Finance, Statistics: Bureau of Statistics, NARI: National Agricultural Research institutions, NAE: National Agricultural extension, Ministry of Commerce, MOE: Ministry of Education, MOWNR: Ministry of Water and Natural Resources.*

## 4. Guidelines for capturing information and knowledge products for CCARDESA

CCARDESA's systems to manage information and knowledge products capture in the SADC region was developed and implemented six years ago. Over the years, member states have had challenges honoring their commitments, as highlighted in the Malabo Declaration, including all of the countries included in this project. As part of the literature review and content analysis, a comprehensive analysis was conducted with regard to CCARDESA's alignment with CAADP priorities. The analysis was focused on assessing the extent to which CCARDESA is working toward meeting the Malabo Declaration commitments. The results indicated that all of CCARDESA's five themes are aligned with the seven Malabo Declaration commitments.

As of December 5<sup>th</sup>, 2020, data analysis of documents from SAAIKS Knowledge Hub indicated that 434 out of 761 (57 %) of the content shared on the system covered the theme climate and smart agriculture while gender and youth was covered by only 6 (less than 1%) of the content (Figure 1).

**Figure 1. Content covered by theme**



Furthermore, the role for collecting content from each member country was assigned to the national ICKM focal points. According to the guidelines for identifying the focal point persons, it was indicated that only two people should be identified from each country. The guidelines further stipulates that the focal point persons are supposed to come from research and extension departments. An analysis of the national ICKM focal point persons contact details indicates that

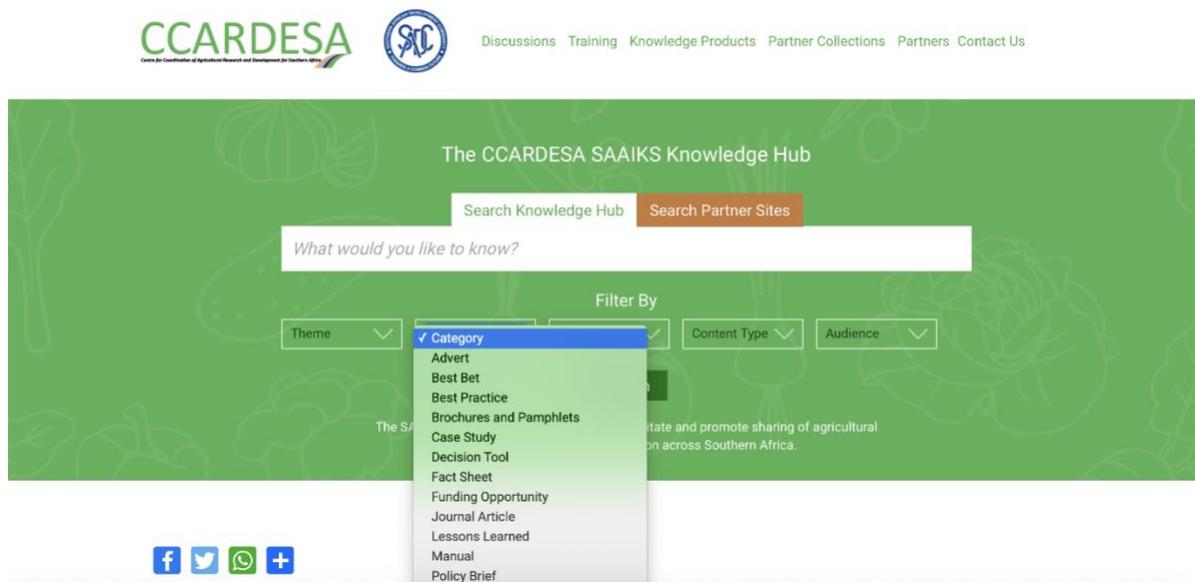
most of them work for public institutions. However, no information was provided in guidelines stipulating how these national ICKM focal point persons are to work with other stakeholders in their country to ensure accountability and verification of the data collected. An analysis of the content available on the website indicates that most of the content comes from projects and programs which involve the public sector leaving behind the private sector. It was also observed that only content on scientifically proven technologies is documented and shared on the platform. In addition, in the CCARDESA ICKM strategy, farmers are described as beneficiaries of the data capture and KM interventions and not contributors. Such an approach limits the roles of farmers as knowledge recipients and not generators. Results of the key informant interviews indicated that in most cases farmers are not considered as sources of data especially if the data is not based on experiences with improved technologies.

Furthermore, despite presence of a category that focuses on lessons learned, it was observed that in most cases the focus of the content was on success stories and lessons learned in terms of contributions towards scaling up the technologies and not based on failures or challenges. An analysis of the success stories shared on the platform indicated that farmers were only featured in success stories which focused on adoption of improved technologies, funded projects or program related interventions. However, no content was available highlighting farmers' indigenous knowledge and experiences. Results of the key informant interviews and focus groups indicated that farmers in the region were innovative and applied local knowledge especially when addressing the fall army outbreak that hit the region in 2017/18 growing season. But none of these innovative approaches were reported in any of the content available on the CCARDESA website.

#### **4.1 Processes**

Knowledge capture is a core component in knowledge management. For knowledge to be captured effectively it is important to set up: structures for collecting the data; mechanisms and strategies for capturing; and sharing and updating the data. However, the results of the content analysis and literature reviews indicated that there are no clearly defined format or structure for collecting and sharing the data. The analysis of the content available on the SAAIKS hub indicates that data is collected and shared through Microsoft Word or Portable Document Format (PDF) documents and videos. However, there are no set guidelines or structures describing the acceptable format for collecting and sharing specific content. The analysis of the content available on the hub indicated that the content is organized into various categories. An analysis of these categories indicated that there was a mix up between the format for sharing the content with the focus area of the content (see Figure 2). Apart from the mix up in the format for sharing the content and focus of the content, the content analysis of various documents indicated that there are no spelt-out formats or guidelines for capturing different types of data to ensure that relevant information regarding the member states' commitment toward achieving the Malabo declaration.

**Figure 2. An overview of the categories for sharing data on the SAAIKS hub**



#### **4.2 Technology**

The CCARDESA's system is comprised of the CCARDESA website which contains information from member countries, funding organizations and various stakeholders. The website is accessed and used by a wider range of stakeholders from the SADC region. It is also linked to the D-Groups (an interactive discussion platform) and Facebook. In order to ensure that extension agents have access to timely, relevant and up to date information, CCARDESA has a mobile App that is specifically designed to assist extension agents carry out their work. Based on the results of a comprehensive literature review, content analysis and key informant interviews, CCARDESA's website is also linked to the SAAIKS knowledge hub. The SAAIKS hub contains information from various countries for use by the various stakeholders. However, it is not clear how the national ICKM focal point persons engage with various stakeholders from their countries when gathering the content that is shared on various CCARDESA's platforms. Even though the CCARDESSA website is linked to the SAAIKS hub, it is unclear as to how the system is linked to other national ICKM systems. Figure 3 shows a snapshot of SAAIKS Search Knowledge Hub.

**Figure 3. A screenshot of the CCARDESA SAAIKS Knowledge Hub**



#### **4.1 CCARDESA Themes**

CCARDESA has five thematic on the website focuses: Agricultural Value Chains and Market Access, Climate Smart Agriculture, Gender and Youth, Institutional Development and Capacity Building, and Linking Research with Farmers. A content analysis of these themes indicated that there are differences in the number of Malabo Declaration commitments addressed by each theme. Linking Research with Farmers was found to be aligned with all of the commitments, except Commitment 5 (Boosting Intra-African Trade in Agriculture Commodities and Services). Gender and Youth was found to have the least alignment with the commitments, as it was only aligned to Commitments 3 (Ending Hunger by 2025) and 4 (Halving Poverty through Agriculture by 2025). In short, while all of the themes align to some extent with the Malabo Declaration commitments, the alignment varies considerably among them.

#### **4.2 Guidelines for tracking the CCARDESA Themes**

CCARDESA is in the process of changing the themes on the website to align with the six thematic areas of the CCARDESA long-term strategic plan in the following areas (CCARDESA BROCHURE 4 PANEL.pdf):

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

#### **4.2.1 Agricultural productivity and food and nutrition security**

This thematic area deals with promotion of agricultural productivity and food security in the SADC region. CCARDESA advances the research agenda coupled with supporting the generation and release of new agricultural technologies while at the same time improving the existing ones to promote agricultural productivity food and nutrition security.

#### **4.2.2 Resilience to emerging agricultural risks: environmental, climate change and transboundary pests and diseases**

This thematic area deals with risks emerging from agriculture due to climate change. CCARDESA promotes climate resilience and various other technologies suitable to the region and responds to the challenges such as diseases and pests the region is currently facing due to climate change.

#### **4.2.3 Commercialisation of the agricultural sector and market access**

This theme is concerned with identification and removal of market related barriers which hinders economic progress of small farmers. CCARDESA is working towards identification and removal of market related barriers which hinder economic growth of small farmers.

#### **4.2.4 Women, youth and social inclusion**

Inclusiveness is important for sustainable agricultural development. This thematic area recognises that women and youth make essential contributions to the agricultural and rural economies in the SADC region and play crucial roles in contributing to food security. In all of its programmes, CCARDESA ensures that women and youth are included to set them on the same support with other players in the agricultural sector.

#### **4.2.5 Knowledge and information management, communication and policy support**

This thematic area strives to retain CCARDESA's position as a knowledge broker of agricultural information and research in the SADC region. To counter the dearth of agricultural knowledge in the region, CCARDESA provides up to date information which is intended to support member states to make evidence-based decisions. The information generated by the research is fed into policy making processes which entail stake holder engagements at various levels.

#### **4.2.6 Capacity strengthening of CCARDESA and AR4D institutions**

This thematic area deals with building the capacity of technical officers, farmers, women, and youth as well as people living with disabilities and other value chain actors to improve their skills to better carry out their functions in the field of agriculture development.

#### **4.2.7 Guidelines for tracking CCARDESA Themes**

The guidelines for tracking the CCARDESA Themes are presented in Table 12. The information to be captured is explained in the guidelines for tracking Commitment 1, above.

**Table 11. Guidelines for capturing information and knowledge products for CCARDESA Themes**

Themes	Information required	Sectors/organisation/links	Frequency (Annually, quarterly, monthly, etc.)	Information and knowledge products required				
<i>Agricultural productivity and food and nutrition security</i>	Update on Ending Hunger, Eradicating Poverty through Agriculture, Intra-African Trade in Agriculture Commodities and services, Resilience to Climate Variability, respectively, Accountability for Actions and Results, Sustained inclusive and sustainable economic							

	growth, full productive employment and decent work for all							
<i>Resilience to emerging agricultural risks: environmental, climate change and transboundary pests and diseases</i>	Update on Resilience to Climate Variability, Integration of climate change measures into national policies, strategies and planning, education on climate change	TerrAfrica Statistics, MOE, MOF, NARI, MOA, NAE, MOEP	Annually, quarterly, monthly, etc.					
<i>Women, youth and social inclusion</i>	Update on Youth jobs in agriculture,	MOE, MOWY, Statistics,	Annually, quarterly, monthly, etc.					

	Ending poverty for all,  Women's participation in agriculture,  Sustained, inclusive and sustainable economic growth, full productive employment and decent work for all	Media, MOA, MOEP, EDU, WTO						
<i>Capacity strengthening of CCARDESA and AR4D institutions</i>	Update on CAADP Process, Investment Finance in Agriculture,  Intra-African Trade in Agriculture Commodities and Services,	MOA, MOEP, Statistics, FAO, NAE, NARI, MOE, AINS, RUFORUM, AfDB, Media	Annually, quarterly, monthly, etc. Annually					

	Mutual Accountability for Actions and Results, sustained inclusive and sustainable economic growth, full productive employment and decent work for all, Agriculture graduates							
<i>Commercialisation of the agricultural sector and market access</i>	Update on Inclusive public-private partnerships (PPPs) for commodity value chains,  Promote sustained, inclusive and sustainable economic growth, full	MOTI, MOF, MOEP, Statistics, UNIDO, ILO, Media, MOC, MOE, SADC Seed Centre, SADC Plant Genetic Resource Centre	Annually, quarterly, monthly, etc.					

	<p>productive employment and decent work for all,</p> <p>Domestic material consumption, food waste at the retail and consumer levels, reduce food losses along production and supply chains, including post-harvest losses</p> <p>Varieties listed in the regional catalogue</p> <p>Germplasm collected</p>		<p>Quarterly</p> <p>Semi-annually</p>					
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<i>Knowledge and information management, communication and policy support</i>	Update on Agriculture communication , policy, technology, knowledge management , strategy, ITC, research, education	MOA, MOEP, Statistics, FAO, NAE, NARI, MOE, Media	Annually, quarterly, monthly, etc.					
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*\*MOA: Ministry of Agriculture, MOEP: Ministry of Economic Planning, MOF: Ministry of Finance, Statistics: Bureau of Statistics, NARI: National Agricultural Research institutions, NAE: National Agricultural Extension, FAO: Food and Agricultural Organisation, IFPRI: International Food Policy Research Institute, RUFORUM: The Regional Universities Forum for Capacity Building in Agriculture, MOGY: Ministry of Gender and Youth, MOTI: Ministry of Transport and Infrastructure, MOC: Ministry of Commerce, MOE: Ministry of Energy, EDU: Ministry of Agriculture, WFP: World Food Programme, AfDD: Africa Development Bank, AINS: Agriculture institutes*

## 5. Capturing knowledge from different sources

Agricultural and climate change knowledge capture is the act of identifying and gathering information from agriculture and climate change. This section presents how to capture agricultural and climate change knowledge from different sources including radio, TV, explicit knowledge, indigenous knowledge and others. Knowledge capture can generally be described as the three-stage process of *identifying*, *locating*, and *collecting* (Anthony J. Rhem, 2017).

- *Identifying*. Knowledge capture begins by identifying the procedural and tacit knowledge that is critical to an organisation's success and, as such, should be documented.
- *Locating*. The next step is to gather that knowledge to ensure that it is preserved.
- *Collecting*. Finally, the knowledge is collected.

### 4.3 Knowledge capture

Knowledge capture is an important element of KM because it allows for knowledge transfer and retention to occur. Even though knowledge capture requires significant planning and coordination and can be time consuming, the value of this activity for the organisation in terms of continuity of operations and mission success cannot be overstated. When considering knowledge capture as an overall goal in an organisation, there are considerations that support successful KM implementation. These include the following:

- *Identify knowledge holders*. Identifying knowledge holders is vital to knowledge capture so all relevant information is included in capture efforts.
- *Consider the end audience*. Make sure identification of the end user of collected knowledge is in the forefront of plans to capture knowledge. This is key to ensuring knowledge providers are asked appropriate questions that focus on the level and breadth of their knowledge.
- *Distill gathered knowledge*. Knowledge gathered may be extremely detailed or overly technical, so it is helpful to make sure the most relevant information is captured, and a useful to enable sharing of that knowledge.
- *Create ownership in knowledge capture*. Once knowledge providers understand the knowledge capture strategies employed by the organisation and how these strategies work, they will be more willing and likely to contribute to these KM efforts. Showing how knowledge providers can benefit is a great way to gain buy-in and solicit participation in knowledge capture activities.

### 4.4 Knowledge capture action plans

The two main action plans to implement knowledge capture and improve the process of capturing knowledge from sources are: 1) to conduct knowledge interviews to gather critical knowledge, and 2) to codify knowledge to make it searchable by knowledge users.

#### 4.4.1 Conduct Knowledge interviews to gather critical knowledge

Steps to implement knowledge Interviews are: Conduct Knowledge interviews to gather critical knowledge, rank knowledge topics based on criticality, identify knowledge recipients, conduct scoping interviews, develop protocol for knowledge interview, conduct interview, and share information.

- *Identify impactful knowledge.* Start by identifying and focusing knowledge capture on information that impact key performance metrics of the organisation.
- *Rank knowledge topics based on criticality.* Evaluate the present and predicted future criticality of each knowledge topic of interest. Then, rank the knowledge areas in order of criticality so it is clear which areas are most important to the organisation. When determining criticality, consider the following.
  - Is the knowledge rare or unique ? How useful is this knowledge?
  - How difficult is this knowledge to learn?
  - How difficult is it to apply the knowledge?
- *Identify knowledge recipients.* Identify users who would most benefit from the knowledge. Understanding who knowledge recipients will helps to frame knowledge interviews and ensure that the most important, relevant, and needed knowledge is gathered.
- *Conduct scoping interviews.* The scoping interviews should be with knowledge sources that hold critical knowledge in the fields of interest. The purpose of a scoping interview is to solicit information that is then used to create an outline of components of the field of interest in which the knowledge source is knowledgeable.
- *Develop protocol for knowledge interviews.* With an understanding of the type of knowledge to be gathered, develop a protocol that includes questions to ask interview participants. Questions should focus on the how and why of the work, rather than solely asking about what is done. When developing interview questions, it is important to structure them in a way that promotes free sharing. This is accomplished by asking open-ended questions that encourage providing details when responding.
- *Conduct knowledge interviews.* Use the developed protocol to conduct knowledge interviews with the knowledge source who originally participated in the scoping interviews as well as other sources with expertise and experience in the pertinent fields of interest. The purpose of these interviews is to gather knowledge and information on each component of the outline. Knowledge collected during these interviews should include the ongoing importance of the field of interest and its impact, processes and procedures followed, materials/equipment used, and potential implications to look out for. Audio recording these interviews can be helpful for understanding tone and context after the interview is completed.
- *Share knowledge from the interviews.* Particularly to support the sharing of knowledge, ensure the person who is capturing knowledge share the knowledge captured so future users have access to them.

#### 4.4.2 Codify Knowledge

Codification is a continuous process of categorising, organising, and packaging knowledge that enables users to easily search for and locate information. Steps to codify knowledge are: create guidelines for codifying, codify Knowledge, train knowledge codifier, maintain codified knowledge.

- *Create guidelines for codifying.* Gain an overall understanding of the organisation goals to determine the best way to codify knowledge to reach those goals. These guidelines for codifying should not create such a complicated category structure that it impedes information searches. When choosing the technology for the repository, keep the organisation's needs and technology capabilities in mind. Once the best way to codify knowledge has been identified and the repository platform selected, create a reference document that new and existing users can refer to on how to upload and codify knowledge and effectively search the repository.
- *Codify Knowledge.* When knowledge and information are captured, particularly standardised documented knowledge such as SOPs or process maps, categorical information should also be captured so that the knowledge and information can be categorized when a user uploads it to the repository. When identifying categorical data, it is important to consider the criteria that employees might use to conduct information searches. Some examples of criteria that can be used to categorise information include the following.
  - Key words
  - Topic area
  - Function
  - Owner(s) of the knowledge
  - Information type
  - Other related resources
- *Train the person capturing knowledge.* The person capturing knowledge must understand why codifying knowledge is important, what their role is in codifying knowledge, and how they should do it.
- *Maintain codified knowledge.* Since the person capturing knowledge will be codifying knowledge, there is a possibility that it will be codified incorrectly or in a way that one person finds useful, but others might not. The organisation should have a dedicated staff member in charge of overseeing repository content and making changes, as necessary, to best suit the organisation. This person should be designated as the point of contact for persons capturing knowledge who have questions about codifying or searching for knowledge and information.

## **6. Suggested areas of intervention for CCARDESA**

CCARDESA is requested to consider the following as possible points of intervention to improve agricultural information and knowledge capturing in the region:

- Encourage farmers to document their experiences or facilitate capturing of their experiences for farmer to farmer knowledge sharing.
- Build capacity of ICKM Focal persons on Malabo and SDGs.
- Encourage ICKM Focal persons to capture more knowledge from women, youth and social inclusion, knowledge and information management, communication and policy support, and capacity strengthening of CCARDESA and AR4D institutions themes.

## **7. Conclusions**

A review of experiences in the target countries identified gaps in the capture of information and knowledge products that have implications for the countries' ability to report on the attainment of Malabo Declaration commitments and SDGs. The development of guidelines will ensure that there are standardised approaches for the capturing and reporting of information and knowledge products required for the CAADP Biennial Reporting by the target countries.

## 8. References

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## 9. Annexes

### Annex 1: Links to stakeholder consultative workshops

#### 1. February 19: Eswatini

[https://zoom.us/rec/share/GZ-zKF0F8QBlh\\_vQpAgHa4Wpef6o26SY2nL4IMdnk6pBCcR398Wg9HtnnEZjo7HE.NVL8a\\_7QRpY12NXw](https://zoom.us/rec/share/GZ-zKF0F8QBlh_vQpAgHa4Wpef6o26SY2nL4IMdnk6pBCcR398Wg9HtnnEZjo7HE.NVL8a_7QRpY12NXw)

#### 2. February 22: Tanzania

[https://zoom.us/rec/share/1aTBbdrvc85la08H8Gd0KMAzpiew6Un1c1Ns\\_MSkmREimgSlyZDdw2rTXHszHTv.xS2VtnSWr7jbfMj1](https://zoom.us/rec/share/1aTBbdrvc85la08H8Gd0KMAzpiew6Un1c1Ns_MSkmREimgSlyZDdw2rTXHszHTv.xS2VtnSWr7jbfMj1)

#### 3. February 23: Zambia

<https://zoom.us/rec/share/3SCtRpUKI5Cyl-bNFMcfDLiqsnszeDDWnnULalePDAz9GCv9B3TAAwMUmT6tkcNx.m0G-cnkspq5Ma3VO>

## Annex 2: List of Participants from Namibia's Stakeholder Consultative Workshop



**CAADP-XP4 KNOWLEDGE MANAGEMENT & DATA CAPTURE NATIONAL STAKEHOLDER MEETING  
NAME OF HOTEL, TOWN, COUNTRY, XX<sup>TH</sup> FEBRUARY 2021**

No	Name	INSTITUTION	Gender (M or F)	EMAIL	TELEPHONE # Home Address	Signature
1	Viktorias Koozekan	MAWLR	M	vikorias@gmail.com	0812880105	<i>[Signature]</i>
2	Ben Haroseb	MAWLR	M	benseb24@yahoo.com	081700134	<i>[Signature]</i>
3	THEOPOLINA NUJOMA	MAWLR	F	Theopolina.Nujoma@manf.gov.na	0813517242	<i>[Signature]</i>
4	Bernadette Arnold	MAWLR	F	tsikopo@gmail.com	0813386913	<i>[Signature]</i>
5	Alfred Siyamba	AMTA	M	siyamba@amta.na	0811555743	<i>[Signature]</i>
6	Fansina Angula	Meatboard	F	Statstade@na.mmlr.gov.na	0812056217	<i>[Signature]</i>
7	Stephanus Sanda	MAWLR	M	stephanus.sanda@manf.gov.na	0817909567	<i>[Signature]</i>
8	ERIC MIASSO	MAWLR	M	Eric.Miasso@mtr.gov.na	0813058183	<i>[Signature]</i>
9	MARTIN ANGULA	UNAM	M	angulam@unam.na	0812713713	<i>[Signature]</i>
10	Maria Shipandeni	"	F	mshipandeni@unam.na	0812612950	<i>[Signature]</i>
11	Petrus Kusihona	MAWLR	M	pusihona@gmail.com	0811485606	<i>[Signature]</i>

### Annex 3: List of Participants from Tanzania's Stakeholder Consultative Workshop



**CAADP-XP4 KNOWLEDGE MANAGEMENT & DATA CAPTURE NATIONAL STAKEHOLDER MEETING  
LAND MARK BEACH HOTEL, DAR ES SALAAM, TANZANIA, 22<sup>ND</sup> FEBRUARY 2021**

No.	Name	INSTITUTION	Gender (M or F)	EMAIL	TELEPHONE # Home Address	Signature
1.	Mercy S. Butta	MoA-HQ	F	buttameroy@gmail.com	0717 332612	MButta
2.	Richard Y. Kasuga	TARI-HQ	M.	richard.kasuga@tari.go.tz	0769-239946	Richard Kasuga
3.	Moses L. Bayinga	TARI-Selian	M	mosesbayinga@gmail.com	0787-886476	M Bayinga
4.	Dynesi D. Kip	TARI-Tengen	F	dynesi.kip@gmail.com	0767596284	D Kip
5.	Isabella L. Nuzma	TARI-UKIRAGWA	F	isannuzma@gmail.com	0784 952651	Isabella
6.	ELIND F. KONGOLA	TARI HUMBULO	M	ekongola@gmail.com	0765 423293	E Kongola
7.	Deogratius Lwezaura	TARI HQ	M	lwezaura@hotmail.com	0754 273997	D Lwezaura
8.	Barkani Kidundo	National	M	kidundab@gmail.com	0784849956	Barkani Kidundo
9.	Corael Nassawe	TARI MAKUTINGORA	M	nassawe@tari.go.tz	0786611522	Corael Nassawe
10.	DEVOTHA MCHAU	TARI-MKURUPESA	F	dvmchau@yahoo.com	0653073598	Devot Mchau
11.	ANWAR NUSUMBA	TARI HQ	M	realb197@gmail.com	0743387481	Anwar Nusumba



**CAADP-XP4 KNOWLEDGE MANAGEMENT & DATA CAPTURE NATIONAL STAKEHOLDER MEETING**  
**LAND MARK BEACH HOTEL, DAR ES SALAAM, TANZANIA, 22<sup>ND</sup> FEBRUARY 2021**

No.	Name	INSTITUTION	Gender (M or F)	EMAIL	TELEPHONE # Home Address	Signature
12.	Stella L. Harangombe	TARI - MAKUUPAA	F	stellalibent	0757-953440	<i>Stella</i>
13.	GODWIN MYONELLA	SOCIAL NETWORK	M	mwatima1979@gmail.com	0787 2587 25	<i>Godwin</i>
14.	ROSE M. UBWE	TARI SELIAN	F	rose.ubwe@tari.go.tz	783 494 73	<i>Rose</i>
15.	Rashid S. Likiho	MOA	M	wikuge@gmail.com	0712 800233	<i>Rashid</i>
16.	Ndalama S. Pastory	MOA	M	shadrailpastory4@gmail.com	0745104446	<i>Pastory</i>
17.	Matondo Kifungo	MOA-ICAD	M	matondokifungo51@gmail.com	0768 097 067	<i>M. Kifungo</i>
18.	SABIR J. WAZIRI	MOFP	M	sabir.waziri@hssm.go.tz	0769128430	<i>Sabir</i>
19.	HIDAYA O. SENGU	TMA	F	mamadama2@gmail.com	0754388968	<i>Hidaya</i>
20.	GERALD KITABU	ICAD/MOA	M	Kitabugerald@gmail.com	0713612698	<i>Gerald</i>
21.	VIDAH MATHA	TARI	F	vidahmatha@gmail.com	0754294250	<i>V. Matha</i>
22.	DAINES P. MTEI	MOA	F	dainesmtei@gmail.com	0716947524	<i>Daines</i>



#### Annex 4. List of Participants from Zambia's Stakeholder Consultative Workshop

S/N	Name	SEX	Institution	PHONE No.	EMAIL ADDRESS	DISTR ICT	STATU S
1	Christopher Mbewe	M	Ministry of Agriculture - Planning	0977784 022	<a href="mailto:chrismbewe@gmail.com">chrismbewe@gmail.com</a>	Lusaka	Confirm ed
2	Alinuswe Chimfwembe	M	Ministry of Finance	0978294 811	<a href="mailto:alinuswe5@gmail.com">alinuswe5@gmail.com</a>	Lusaka	Confirm ed
3	Masiliso Sooka	M	Zambia Statistics Agency	09777871 175	<a href="mailto:msooka@live.com">msooka@live.com</a>	Lusaka	Confirm ed
4	Stephen Chundama	M	Zambia Development Agency	0977708 027	<a href="mailto:Stephen.chundama@zda.org.zm">Stephen.chundama@zda.org.zm</a>	Lusaka	Confirm ed
5	Kalengo Mumba	M	Disaster Management and Mitigation Unit	0974911 911	<a href="mailto:mumbakalengo@yahoo.com">mumbakalengo@yahoo.com</a>	Lusaka	Confirm ed
6	Nasiba Nyambe	F	Ministry of Community Development and Social Security	0977817 376	<a href="mailto:nasibanyambe@yahoo.com">nasibanyambe@yahoo.com</a>	Lusaka	Confirm ed
7	Happy Mulolani	M	Ministry of Agriculture - Reporter	0972028 107	<a href="mailto:mulolanih@gmail.com">mulolanih@gmail.com</a>	Lusaka	Confirm ed
8	Yotam Nyirenda	M	Ministry of Agriculture - Planning	0977768 560	<a href="mailto:mr.ybnyirenda@gmail.com">mr.ybnyirenda@gmail.com</a>	Lusaka	Confirm ed
9	Charity Lubumbe	F	Ministry of Gender	0977179 886	<a href="mailto:lubumbecharity@gmail.com">lubumbecharity@gmail.com</a>	Lusaka	Confirm ed
10	Auckland Kuteya	M	<i>Indaba Agricultural Policy Research Institute</i>	0977181 797	<a href="mailto:auckland.kuteya@iapri.org.zm">auckland.kuteya@iapri.org.zm</a>	Lusaka	Confirm ed
11	Susan Phiri	F	CAADP Youth Network Zambia	0977570 984	<a href="mailto:sussana.phiri@gmail.com">sussana.phiri@gmail.com</a>	Chilang a	Confirm ed
12	Mweemba Chijoka	M	Ministry of Fisheries and Livestock – Planning	0977388 061	<a href="mailto:Chijokam@gmail.com">Chijokam@gmail.com</a>	Lusaka	Confirm ed
13	Dorcas Kabuya	F	CCAREDSA Focal Point Person - Ministry of Agriculture	0977439 597	<a href="mailto:domucar@yahoo.com">domucar@yahoo.com</a>	Chilang a	Confirm ed
14	Jones Malama	M	CCAREDSA Focal Point Person - Ministry of Agriculture	0964286 550	<a href="mailto:jozmalama@gmail.com">jozmalama@gmail.com</a>	Chilang a	Confirm ed

15	Natasha Mhango	F	CAADP Reporter - Ministry of Agriculture	0976520206	<a href="mailto:natashamhango15@gmail.com">natashamhango15@gmail.com</a>	Lusaka	Confirmed
16	Doreen Nawa	F	CAADP Reporter – Zambia Daily Mail	0977224174	<a href="mailto:dorkel2005@gmail.com">dorkel2005@gmail.com</a>	Kafue	Confirmed
17	Morgan Nyanga	M	Ministry of Commerce, Trade and Industry	0971924916	<a href="mailto:Demorgannyanga09@yahoo.com">Demorgannyanga09@yahoo.com</a>	Lusaka	Confirmed
18	Nicholas Lumamba	M	Ministry of Agriculture	0977495653	<a href="mailto:lumambanicho@gmail.com">lumambanicho@gmail.com</a>	Chilanga	Confirmed

**Annex 5: List of Participants from Eswatini's Stakeholder Consultative Workshop**

	<b>NAME AND SURNAME</b>	<b>CELL NUMBER</b>	<b>INSTITUTION</b>	<b>EMAIL ADDRESS</b>
1.	EMMANUEL KUNENE	+268 7611 0775	University of Eswatini, Eswatini Institute for Research in Traditional Medicine, Medicinal and indigenous Food Plants	<a href="mailto:enkunene@uniswa.sz">enkunene@uniswa.sz</a>
2.	THEMBUMUSA SIMELANE	+268 7635 0794	Ministry of Agriculture Information Department	<a href="mailto:khuleni2011@gmail.com">khuleni2011@gmail.com</a>
3.	NDODA MSIBI	+268 7606 8811	Ministry of Agriculture, National Plant Health Inspectorate Services	<a href="mailto:ndodamsibi@gmail.com">ndodamsibi@gmail.com</a>
4.	NHLANHLA SHONGWE	+268 7606 2609	Ministry of Agriculture, [Veterinary Services]	<a href="mailto:shongwenhlanhla62@gmail.com">shongwenhlanhla62@gmail.com</a>
5.	LYNN KOTA	+268 7606 3609	Eswatini Water and Agricultural Enterprise, [Smallholder Market-Lead Project]	<a href="mailto:lynnk@eswade.co.sz">lynnk@eswade.co.sz</a>
6.	NOKUPHIWA SITHOLE	+268 7608 5860	Eswatini National Agriculture Union	<a href="mailto:nokuphiwasithole@snauc.co.sz">nokuphiwasithole@snauc.co.sz</a>
7.	NDIMPHIWE SHABANGU	+268 7663 9497	Coordination Assembly for Non-Governmental Organisations	<a href="mailto:coord.assist@cango.org.sz">coord.assist@cango.org.sz</a>
8.	SANDRA MONSOUR	+268 7617 9829	SADC Unit	<a href="mailto:sandsmansu@gmail.com">sandsmansu@gmail.com</a>
9.	MELUSI SIMELANE	+268 7828 4334	Ministry of Economic Planning [Central Statistics Department]	<a href="mailto:mnguni123@gmail.com">mnguni123@gmail.com</a>
10.	MPHIWA GAMEDZE	+268 7613 5843	Youth Enterprise Fund	<a href="mailto:mphiwagamedze@yef.co.sz">mphiwagamedze@yef.co.sz</a>
11.	COLISILE MASILELA	+268 7617 8409	Eswatini National Youth Council	<a href="mailto:colisilem@snycc.org.sz">colisilem@snycc.org.sz</a>

12.	SEBENELE KUNENE	+268 7608 8078	Ministry of Agriculture, Economic Planning Department	<a href="mailto:desmondsebe@gmail.com">desmondsebe@gmail.com</a>
13.	JAFTA FAKUDZE	+268 7605 1903	Farm Chemicals	<a href="mailto:sales@farmchem.co.sz">sales@farmchem.co.sz</a>
14.	MADODA MDZINISO	+268 7657 4656	Ministry of Information Communication and Technology, [Research Science, Technology and Innovation Department]	<a href="mailto:mdzinisomm@gmail.com">mdzinisomm@gmail.com</a>
15.	LWANDLE SIMELANE	+268 7607 6136	Ministry of Information Communication and Technology, [Research Science, Technology and Innovation Department]	<a href="mailto:simelane.lwandle@gmail.com">simelane.lwandle@gmail.com</a>
16.	AYANDA SHABANGU	+268 7670 8379	Royal Science and Technology Park	<a href="mailto:ayanda142077@gmail.com">ayanda142077@gmail.com</a>
17.	MANGALISO MOHAMMED	+268 7633 7676	Eswatini Economic Policy Analysis Research Centre	<a href="mailto:mohammedm@separc.co.sz">mohammedm@separc.co.sz</a>
18.	PATRICK MKHALIPHI	+268 7602 8594	Eswatini Sugar Association	<a href="mailto:patrickm@esa.co.sz">patrickm@esa.co.sz</a>
19.	SIFISO DLAMINI	+268 7629 3075	National Agricultural Marketing Board	<a href="mailto:sifiso@namboard.co.sz">sifiso@namboard.co.sz</a>
20.	MANGALISO SIHLONGONYANE	+268 7802 7471	National Maize Corporation	<a href="mailto:mangalisos@nmc.co.sz">mangalisos@nmc.co.sz</a>
21.	SIHLE MABUZA	+268 7621 1499	Central Bank	<a href="mailto:sihlem@centralbank.org.sz">sihlem@centralbank.org.sz</a>
22.	KWAZI MKHONTA	+268 7633 5922	Ministry of Agriculture, [Department of Agricultural Research and Specialist Services], Research Officer	<a href="mailto:mkwazy@gmail.com">mkwazy@gmail.com</a>
23.	SIMILO MAVIMBELA	+268 7606 2607	Ministry of Agriculture, [Department of Agricultural Research and Specialist Services], Chief Research Officer	<a href="mailto:seemelo.seemelo@gmail.com">seemelo.seemelo@gmail.com</a>

24.	NCOMIWE MAPHALALA	+268 7657 7064	Ministry of Agriculture, [Department of Agricultural Research and Specialist Services], Research Officer	maphalalancomiwe@gmail
25.	STEPHEN MASEKO	+268 7611 8697	Ministry of Agriculture, Department of Information, Senior Officer	<a href="mailto:spmaseko@gmail.com">spmaseko@gmail.com</a>
26.	BONGANI MVUBU	+268 7628 1425	Ministry of Agriculture, [Department of Agricultural Research and Specialist Services], Research Officer, [CCARDESA ICKM Focal Person	<a href="mailto:bonganimvubu3@gmail.com">bonganimvubu3@gmail.com</a>

## Annex 6: Terms of Reference



# Terms of Reference

## Development of Knowledge Capturing Strategies and Guidelines

AUGUST 2020

### A. BACKGROUND

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) is a sub-regional organization established as a subsidiary entity of SADC and charged with the responsibility of coordinating agricultural research and development in the Southern Africa. CCARDESA is implementing a four-year EU funded project administered by IFAD called CAADP-XP4. The overall objective of the project is to enable agricultural research and innovation, including extension services, to contribute effectively to food and nutrition security; economic development and climate mitigation in Africa. The project is targeting seven countries in the SADC region and these are; Botswana, Eswatini, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe.

The project seeks to deliver five key outputs and one of them is on knowledge management which aims at enhancing knowledge management and communication for decision support sharing innovations and advocacy related to climate relevant agriculture within the SADC region. There is increased demand for agricultural quality statistical data and accessibility which have caused the development of new modern technologies, especially in the data collection processes. Data-based decisions cannot be made in the absence of accurate data. The SADC region has generally witnessed an unprecedented dearth of agriculture, climate change and research data, which has serious implications on the relevance of the decisions taken and program implementation. This situation poses a substantial challenge to CAADP in its preparations for reporting on the Indicators of the Malabo Declaration and to the targets that have been set for biennial reviews of CAADP plans at the country level. It also poses challenges at the level of grounding Sustainable Development Goals (SDGs) indicators on reliable data.

The use of modern approaches in data collection and sharing tools have been proven to improve collection, accuracy, and accessibility of information. Knowledge capture is an important element of knowledge management because it allows for knowledge transfer and retention. In order to bridge the knowledge gap and accessibility, CCARDESA through the EU funded CAADP-XP4 project is planning to develop guidelines for data capture, support the National Agricultural Research Extension Systems (NARES) on the development and implementation of data capture strategies as well as support data capture in the selected implementing countries.

To achieve the objective of this assignment, CCARDESA therefore wishes to hire the services of a team of two regional competent and reputable consultants to carry out the assignment. One will be a Lead Consultant and the other one will be the Assistant Consultant. The Lead Consultant will report and be accountable to CCARDESA while overseeing the Assistant Consultant.

## **B. PURPOSE OF THE ASSIGNMENT**

The overall objective of this consultancy is **to develop guidelines for knowledge and information capturing, support NARES on the development and implementation of the knowledge and information capturing strategies as well as support the process in selected implementing countries and operationalized at national and regional level.**

## **C. SPECIFIC OBJECTIVES OF THE ASSIGNMENT**

The specific objectives of this assignment are to:

- Develop KM data/information capture guidelines at regional level;
- Establish linkages with national institutions responsible for collecting agricultural information;
- Support NARES on the development and implementation of Knowledge capture strategies;
- Capacity building of focal points on the use of the knowledge and information capture guidelines;
- Support Knowledge and information capturing in the selected countries and publish it on the CCARDESA website and
- Document regional information and knowledge needed to meet the SDGs and commitments of the Malabo Declaration.

#### **D. SCOPE OF WORK**

The Consultants will work closely with 3 technical staff from CCARDESA to accomplish the task. In executing this assignment, the Consultants will undertake the following specific tasks:

- Develop appropriate methodology to collect the necessary knowledge and information from the CAADP-XP4 selected countries.
- Establish possible linkages with existing national hubs and partnerships with institutions responsible for collecting agricultural information in the SADC region – to assess what information they have and how they utilise it.
- Support information capture at national level in selected countries;
- Review the related knowledge, information, data, practices and literature that pertains to the information/data capturing guidelines.
- Facilitate the development of information capture strategies at national level;
- Coordinate, collect, analyze, and publish through the CCARDESA website the regional information needed for the SDGs and for commitments of the Malabo Declaration.
- Facilitate a training workshop (organized jointly with CCARDESA) on the use of the knowledge and information capture guidelines in relation to knowledge management systems operated by the CAADP-XP4 implementing countries
- Draft a report that will include KM guidelines for agricultural information capture in SADC countries, guided by the literature and consultations carried out

#### **E. METHODOLOGY**

The Consultants are expected to propose a robust methodology for undertaking the assignment which should be detailed in the inception report. The first part of the assignment will be done at CCARDESA, the second part at national level and will cover the seven implementing countries the last part will cover 3 selected countries.

Due to restrictions on travel and meetings, the assignment will be done virtually. The consultancy will commence with an inception meeting with the Secretariat at which the details of the assignment will be explained and the consultants will give a response on their understanding of the task.

#### **F. DELIVERABLES**

The key deliverables of this assignment are as follows:

- An inception report spelling out the proposed methodology, detailed activity work plan, time scale, and validation plan for the delivery of the consultative workshop, an outline for the guidelines for information and knowledge capture as well as an outline for the consultancy report;
- Linkages established with KM national data institutions;
- KM and Information Capture guidelines;
- National knowledge capturing strategies;
- Factsheet with KM data from the 7 countries;
- A virtual workshop to validate the Knowledge capturing guidelines and national knowledge capturing strategies with stakeholders;
- Training workshop report;

- A consultancy Report.

## **G. SUPPORT TO THE CONSULTANTS**

CCARDESA will support the Consultants during the implementation of the assignment. The Consultants will work very closely with the contact persons at CCARDESA in the delivery of this assignment. The support will include the following:

- Provide background document that may be required by the consultant;
- Introduce the consultant to the national ICKM focal point persons or contact persons in the seven implementing countries;
- Liaise with national ICKM focal points to get information required by the Consultant;
- Mobilize national ICKM focal points for the virtual training on the data capture guidelines;
- Mobilize stakeholders to participate in the validation workshop;

## **H. QUALIFICATIONS AND WORK EXPERIENCE OF THE CONSULTANTS**

- A minimum of a master's degree in Information and Knowledge Management or Agricultural Economics or a closely related field,
- At least Ten years' experience in the Knowledge Management Strategy development; preferably in systems management, Data capture and guidelines development and biometry.
- Proven ability to work both independently and as part of a team
- Experience in similar assignment (**development and operationalization of Data capture strategy**),
- Good working knowledge of agriculture and the Malabo declaration milestones and SDGs.
- Experience in working with regional organizations and in Southern African countries,

## **I. DURATION**

Thirty-Five (35) input days spread over 70 calendar days for the Lead Consultant and Thirty (30) input days for the Assistant Consultant.

## **J. Duty Station**

The Consultants shall be based at their own place of work but interact using online means and, where possible, through face-to-face interactions with the stakeholders, ICKM national focal point persons/information and data officers and policy makers.

## **K. REPORTING**

The consultants will be supervised by the CAADP-XP4 Project Coordinator or delegated officer at the CCARDESA Secretariat.

## **L. APPLICATION**

The Consultants will be expected to submit a technical and financial proposal to CCARDESA Secretariat by 4<sup>th</sup> September 2020 at 16:00hrs to:

The Executive Director  
Attn: Procurement Officer  
CCARDESA Secretariat  
Private Bag 00357, Gaborone, Botswana  
E-mail: [registry@ccardesa.org](mailto:registry@ccardesa.org) copy to [bmakara@ccardesa.org](mailto:bmakara@ccardesa.org)