



Tanzania Agricultural Research Institute **Knowledge Management Strategy**



Developed within the framework of
the **KM4AgD** Agenda

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Forum for Agricultural Research in Africa (FARA)

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About FARA

The Forum for Agricultural Research in Africa (FARA) is the apex continental organisation responsible for coordinating and advocating for agricultural research-for-development. (AR4D). It serves as the entry point for agricultural research initiatives designed to have a continental reach or a sub-continental reach spanning more than one sub-region.

FARA serves as the technical arm of the African Union Commission (AUC) on matters concerning agricultural science, technology and innovation. FARA has provided a continental forum for stakeholders in AR4D to shape the vision and agenda for the sub-sector and to mobilise themselves to respond to key continent-wide development frameworks, notably the Comprehensive Africa Agriculture Development Programme (CAADP).

FARA's vision is to "Reduced poverty in Africa as a result of sustainable broad-based agricultural growth and improved livelihoods, particularly of smallholder and pastoral enterprises" its mission is the "Creation of broad-based improvements in agricultural productivity, competitiveness and markets by strengthening the capacity for agricultural innovation at the continental-level"; its Value Proposition is the "Strengthening Africa's capacity for innovation and transformation by visioning its strategic direction, integrating its capacities for change and creating an enabling policy environment for implementation". FARA's strategic direction is derived from and aligned to the Science Agenda for Agriculture in Africa (S3A), which is in turn designed to support the realization of the CAADP vision.

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Acronyms

AGORA	Access to Global Online Research in Agriculture
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central
BOD	Board of Directors
CAADP	Comprehensive Africa Agriculture Development Programme
CCARDESA	Centre for Coordination of Agricultural Research and Development for Southern Africa
CGIAR	The Consultative Group for International Agricultural Research
CMS	Content Management System
CKMS	Communication and Knowledge Management Strategy
COMESA	Common Market for Eastern and Southern Africa
CTA	Technical Centre for Agricultural and Rural Cooperation
GDP	GDP
DMS	Document Management System
FAAP	Framework for African Agricultural Productivity
FARA	Forum for Agricultural Research in Africa
ICKM	Information Communication Knowledge Management
ICT	Information and Communication Technology
ICU	Information and Communication Unit
IT	Information Technology
K4DP	Knowledge for Development Partnership
KM	Knowledge Management
MAFC	Ministry of Agriculture and Food Security
M&E	Monitoring and Evaluation
MIS	Management Information System
MoA	Ministry of Agriculture
OP	Operational Plan
OS	Other stakeholders
OU	Other units (secretariat)
NARI	National Agricultural Research Institute
NARS	National Agricultural Research System
NPP	Networks, Programmes and Projects
PAAP	Policy Analysis and Advocacy Programme
PR	Public Relations
RAILS	Regional Agricultural Information and Learning System
TARI	Tanzania Agricultural Research Institute
TCO	Technical Communication Officer
URL	Uniform Resource Locator (web page address)
USD	United States Dollars



Strategy

1. Introduction and Policy Environment

Agricultural development is the engine of economic growth since agriculture has the potential to lift out of poverty the majority of rural population in Tanzania. The sector contributes to 27% of the GDP and provides jobs, sustenance and income to about 80% of the population. Thus, agriculture is critical to poverty reduction (MAFC, 2013; Mnenwa & Maliti, 2010). To realize the sector's potential, information and communication technologies and knowledge management are of paramount importance to improve the livelihoods of the society where agriculture is the predominant income generating activity. Different studies have shown that information and communication technologies are crucial to economic and social development in developing countries (Osei-Bryson et al, 2014). This is due to the fact that information and communication are significant factors in the performance and growth of economies and their importance is relevant in accelerating growth in the agriculture sector. To that end, both traditional and modern ICTs offer promising solutions to strengthening and expediting the delivery of agricultural information to both urban and rural communities.

To harness the promise of ICT and knowledge management in advancing the national priorities and enabling development goals, the Government of Tanzania initiated the building of the National ICT Broadband Backbone (NICTBB) in 2009. The strategic approach was to ensure that ICTs are diffused into the public at all levels, enabling maximization of benefits and welfare of Tanzanians. The NICTBB is intended to provide reliable, efficient, and cost effective accessibility and connectivity to ICT infrastructure; enhance socio-economic development and create knowledge-based society. The Government had also introduced the National ICT Policy in 2003 which aims to integrate ICT in improving living standards and quality of life; raise national awareness levels on the role and potential of ICT in sustainable development and increase the size and quality of skilled human resource base.

To attract the potential users of ICTs so as to improve efficiency and productivity, the Government has exempted the value added tax (VAT) on ICT equipment and tools. Besides, the Universal Communications Service Access Fund was established under the Universal Communications Service Access Act of 2006.

Since the agricultural development depends on information reaching potential stakeholders, the Government included an information component in the National Agricultural Policy of 2013.

The policy points out the importance of information services for agricultural development. The implementation of the National ICT Policy and that of the National Agricultural Policy is creating an enabling environment for strengthening information and communication infrastructure to facilitate the delivery of packaged information on improved agricultural technologies to increase productivity and income for farmers.

To improve information communication and knowledge in the agricultural sector, the Ministry of Agriculture developed the Agricultural Sector Communication and Knowledge Management Strategy (C&KM) in 2013. The strategy aims to facilitate the development of sustainable agriculture for the increased productivity. Specifically, the C&KM Strategy aims at facilitating meeting the information needs of key stakeholders in the agricultural sector through efficient and effective gathering, disseminating and sharing of agricultural knowledge. The agricultural research and development system as an integral actor in agricultural productivity, depends largely on well-organized information and knowledge sharing initiatives to generate and promote the dissemination of appropriate technologies for enhancing food security and income generation. To promote agricultural research in line with the CAADP Compact, the Tanzanian government strives to increase public research investment to 1 % of the Gross Domestic Product (GDP). The enabling environment has the potential to attract institutions from both public and private sectors to strengthen agricultural research for development (AR4D) and for them to benefit from ICT infrastructure and knowledge management.

Governmental and non-governmental institutions playing a role in AR4D in Tanzania

The Tanzania National Agricultural Research System (NARS) includes the following institutions:

- The Tanzania Agricultural Research Institute (TARI) a semi-autonomous institution with its network of 17 research stations located in seven agro-ecological zones, and the Tropical Pesticides Research Institute (TPRI), a semi-autonomous public institution under MoA
- The Tanzania Livestock Research Institute (TALIRI) and the Tanzania Fisheries Research Institute (TAFIRI), which are semi-autonomous public institutions under the Ministry of Livestock and Fisheries Development (MLFD).
- Private sector research institutions, namely the Tanzania Coffee Research Institute (TaCRI), the Tea Research Institute of Tanzania (TRIT), Sugar Research and Training Institute of Tanzania (SRTIT) and Tobacco Research Institute of Tanzania (TORITA).
- Semi-autonomous institutions falling outside the agricultural sector lead ministries. These include the Tanzania Forestry Research Institute (TAFORI), Sokoine University of Agriculture (SUA) and the University of Dar es Salaam.

Many national and regional initiatives have called for improvement of knowledge management, including enhanced use of ICTs at all levels. Effective knowledge management therefore includes

finding ways, tools and media that will enable people with similar interests to collaborate to seek and share knowledge. The Tanzanian NARS maintains collaborative partnerships with regional and international organizations to strengthen information communication and knowledge management in agricultural research. Regionally, the Forum for Agricultural Research in Africa (FARA) has supported information and knowledge sharing in Tanzania through the Regional Agricultural Information and Learning System (RAILS) -- designed to improve access to agricultural knowledge -- and the Dissemination of New Agricultural Technologies in Africa (DONATA), designed to improve access to new technology and innovations.

The country also maintains collaborative knowledge-sharing relations with the international agricultural research institutes, especially the CGIAR group; for instance, the AfricaRice initiative on Rice Sector Development Hubs that aims to improve the knowledge exchange in Tanzania focusing on rice. The intergovernmental bodies such as CABI and CTA are key partners in ICKM and related capacity-enhancing supports over the years. At the sub-regional level, Tanzania is party to and a founding member country of CCARDESA (since the SACCAR era) and the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA). These regional, sub-regional and international agricultural research and development bodies have played significant role in enhancing knowledge sharing for agricultural research and development in Tanzania.

The growth of ICKM in Sub-Saharan Africa faces many challenges. Tanzania is a low-income country with a population of 44.9 million; like other lower-income Sub Saharan countries, it faces similar access challenges that prevent efficient use of ICTs and related knowledge management systems. Despite the inhibiting factors to efficient ICKM in Tanzania, participating institutions in agricultural research for developments have continued to play their role in enhancing information and knowledge sharing. The institutions under the Agricultural Sector Lead Ministries (ASLMs), non-governmental organizations, the private sector and farmers groups are key actors in information creation, storage, management and dissemination.

TANZANIA AGRICULTURAL RESEARCH INSTITUTE

Tanzania Agricultural Research Institute (TARI) Act was enacted by the Parliamentary Act No. 10 of 30th September 2016 with the mandate of carrying out agriculture research in the country. TARI is semi-autonomous and is responsible for all agricultural research activities conducted by the National Agricultural Research Systems (NARS) in Tanzania Mainland. Its mandate is to conduct basic and applied research, promote, coordinate agricultural research, and advise the government and other stakeholders on matters related to agricultural research for sustainable development. TARI has a strategic plan that includes improving information and knowledge management system in the areas of research.

Tanzania Agricultural Research Institute (TARI) with mandate to research, coordinate and promote agricultural research in the country, over the years it has developed a number of technologies

and accumulated knowledge in both tacit and explicit. These technologies and knowledge need to reach end users for increasing crop production and productivity. The challenge we are facing now, is that TARI knowledge base is disorganized as there is no one repository for storage of knowledge and information which also limit retrieval and sharing to end users. The danger of not having knowledge management systems may culminate to loss of all what the institute has developed over the years, and cannot be available for future reference and use. The need for the Institute to strengthen Knowledge Management (KM) has been emphasized in TARI strategic plan under Key Result Area 4 and also re-emphasized by TARI Communication Strategy. Hence the objective of this document is to develop the first draft edition of the Knowledge Management (KM) to be further developed on the basis of TARI procedures and the KM4AgD Framework.

TARI VISION STATEMENT

To be the Institute of Excellence for agricultural research in the country and beyond

TARI MISSION STATEMENT

To generate and promote application of knowledge, innovation and agricultural technologies as catalyst of change in achieving agricultural productivity, food and nutrition security, sustainable agriculture and economic growth involving stakeholders in the country and global community.

GUIDING PRINCIPLES

In pursuance of its mission and vision, TARI will implement this strategy guided by the following core values:

- i. **Integrity:** TARI will always strive to be credible and consistent in its actions;
- ii. **Transparency:** TARI endeavors to convey correct, timely and complete information about its services and products. TARI will establish mechanisms for participatory resource allocation, peer review, information sharing and allow open discussion on resource mobilization ventures. TARI's pursuits for transparency will also ensure integrity in all aspects. This will promote professionalism and ethics in agricultural research service delivery. NARS stakeholders will be encouraged to share credit, benefits and risks and manage conflicts of interest.
- iii. **Accountability:** TARI will always be accountable to agricultural research activities in order to foster agricultural development. TARI will promote the principle of value-for-money in resource allocation, utilization and reporting among the various actors in the NARS.
- iv. **Team work:** TARI will always work together to achieve its corporate goals;
- v. **Professionalism:** TARI will always adhere to ethics and uphold quality and standards in performing its duties;
- vi. **Excellence:** Exercise competency through professionalism and ethical conduct. TARI will ensure that all service providers comply with standards of excellence and will provide conducive environment for creativity in the frontiers of science.
- vii. **Equity:** Observe equal opportunity and treatment for our internal and external stakeholders without discrimination against gender, religion, race, affiliation and ethnicity

Principles of Operation

1. The primary guiding principle is to ensure technical excellence and high quality standards in content production with regard to both information and communication products. It is also to ensure easy and equitable access to evidence-based information products and services from TARI.
2. Agricultural research information will be treated as a regional public good that is essential for economic and social development and for a just, equitable and healthy society. TARI will use an open access philosophy with respect to all electronic content produced by the organization.
3. Information that stimulates decision-makers nationally will be given priority, and the transfer of appropriate technology into agricultural research practice, which is suitable for adaptation and use by various levels of agricultural practitioners nationally will be promoted.
4. Knowledge and information intended to meet the needs of stakeholders will be shared and communicated in order to address priority problems and issues affecting society. This information will often deal with topics or target audiences both covered and not covered by commercial channels.
5. Print, audiovisual and electronic media will be used for publishing and disseminating information. The Web and social media platforms will become key tools for advancing knowledge sharing and continually adopting new methods and technologies.
6. The decentralized production and operation of information sources, connected through networks with direct and universal access, and free from geographical or scheduling restrictions, will be promoted.
7. Information will mainly be disseminated in official languages especially English, and translation into local dialects will be done as and when needed, by any concerned stakeholder.
8. Linkages and interoperability between information sources involved in agricultural research within and outside TARI will be expanded and promoted, where appropriate.
9. Decentralized production of scientific information products will be promoted when those products are proven to adhere to the highest quality standards and are also in accordance with cost effective procedures.
10. TARI technical staff will cooperate with partners working in the agricultural sector in strengthening their knowledge management and communication policies, and capacity in support of a food secure Tanzania
11. Proposals for new technical publications will be screened by a designated publications committee in order to ensure that publications: are in line with TARI's policies, reflect its priorities, meet the needs of stakeholders, have been properly peer reviewed, and contain information that is likely to be of long-term relevance.

Target Audience through this Strategy

TARI will address needs of mainly the following key stakeholders of agricultural research services in Tanzania:

- i. Policy makers: Government of Tanzania, its Ministries, Departments, Institutions, and Agencies, Parliament as well as local governments;
- ii. Clients: Farmers, agro input dealers, business private sector practitioners, agricultural advisory, media and extension service providers;
- iii. Research service providers: public and private agricultural research institutions, companies, advisory service providers, universities, and other academic institutions
- iv. Non-Governmental Organisations (NGOs), Community Based Organizations (CBOs) and Civil Society Organisations (CSOs); and
- v. Development partners

TARI CORE FUNCTIONS

TARI coordinates implementation of agricultural research programs, projects, and interventions. The core functions of TARI are to:

- Conduct, promote and coordinate basic, applied, and strategic agricultural research.
- Advise the government on the formulation of national policies, laws, and regulatory frameworks for promoting and regulating agricultural research.
- Formulate and oversee the implementation of intellectual property policy of the Institute.
- Formulate research standards, code of ethics, conduct and practice, and guidelines for delivery of agricultural research services.
- Set, in collaboration with key stakeholders, national agricultural research agenda and priorities of the national agricultural research system and coordinate the implementation of such agenda and priorities;
- Establish and operate an efficient system of documentation, dissemination and promotion of information on agricultural research;
- Promote advancement of skills by providing facilities for training research personnel for the Institute and other stakeholders for better carrying out basic, applied and strategic research;
- Mobilise funds for agricultural research and development;
- Coordinate and promote cooperation and collaboration with other countries, institutions, scientific or professional societies and other agricultural research service providers, with regard to agricultural research, development and technology transfer in the agricultural sector;
- Provide, undertake and promote consultancy services in research, training and dissemination of information in agriculture and allied sciences;
- Register and maintain a register of agricultural research service providers and their research projects in the public and private sectors;
- Promote seed deployment and multiplication;

- Establish and maintain gene bank for purposes of characterizing, evaluating and conserving plant genetic resources; and
- Perform any other functions related with agricultural research for better carrying out the purposes of TARI Act.

2. Rationale

TARI being a research institution, has accumulated explicit and tacit knowledge which needs to be shared and utilized to continuously improve the institutional excellence in terms of knowhow and innovative thinking. In this case, TARI needs to embrace KM due to its accrued benefits which include: A a more efficient workplace; Fasterfaster, better decision making; increased collaboration; building organizational knowledge; optimizing employees onboarding and training process; increased employee happiness and retention, due to the valuing of knowledge, training, and innovation.

TARI has already established a website which in some way has provisions for uploading publications and updating important information about the Institutes products and services. However, this alone does not provide sufficient and reliable way for managing knowledge of the Institute. In this situation, where the Institute possesses a lot of knowledge, mostly available in standalone computers and other in individual shelves, dilapidated stores or reading rooms and libraries, it is difficult to access and share for useful use or its availability for many years to come is not guaranteed. It is therefore important that, TARI invests to develop or acquire decent and efficient knowledge management system (KMS) to adequately fulfill its mandate.

3. Situation Analysis

Effective and efficient KM depends on existence of knowledge management namely: Roles, **Processes, Governance** and **Technologies**. A successful KM strategy relies on identification and assignment of roles and responsibilities to various stakeholders that are directly or indirectly involved in KM. An effective and efficient knowledge management system is expected to have structures for collecting the knowledge; mechanisms and strategies for capturing; and sharing and updating the knowledge. TARI has a structure of sharing information at a national level. The presence of a functional TARI website, and center's homepages provide an opportunity for setting up structures for KM and establish a national agricultural knowledge hub. This section provides KM SWOC or SWOT analysis under TARI.

Components	Strengths	Weaknesses	Opportunities	Challenges
<p>Roles</p>	<p>TARI has a strategic plan that includes improving information and knowledge management system in the areas of research.</p> <p>Presence of a functional TARI website, and center's homepages that provide opportunity for setting up structures for KM</p>	<ul style="list-style-type: none"> Inadequate financial support towards KM interventions Absence of format and focus areas to guide KM interventions Limited focus on capturing farmers' indigenous knowledge and experiences Limited understanding of the type and format for capturing information 	<ul style="list-style-type: none"> Structures for collecting the knowledge; Mechanisms and strategies for capturing; sharing and updating the knowledge 	<p>Failure to collect relevant information related to the CCARDESA themes, Malabo declarations and SDGs.</p>
<p>Processes</p>	<p>TARI has a structure of sharing agriculture information at a national level.</p>	<ul style="list-style-type: none"> TARI has no KM systems No set of structures and guidelines for KM at a national level 	<p>TARI has a structure of sharing agriculture information at a national level.</p>	<p>Absence of a set of structures and guidelines for KM at a national level</p>
<p>Technologies</p>	<p>The presence of a functional website</p>	<ul style="list-style-type: none"> TARI does not have a national repository for capturing knowledge Inadequate capacity running a KM system 	<ul style="list-style-type: none"> Institutional websites provide an opportunity for setting up structures for KM. Presence of institutional websites or knowledge repositories in other institutions 	<ul style="list-style-type: none"> Cost of operationalization of the KM systems Linking Tanzania's knowledge base with the continental and global partners

Components	Strengths	Weaknesses	Opportunities	Challenges
Governance	TARI national role to coordinate of agricultural research nationally	<ul style="list-style-type: none"> TARI does not have a national agricultural KM strategy 	<ul style="list-style-type: none"> Existing KM strategies and KM systems from other collaborating national, regional and international agricultural research, development institutions; FARA, CCARDESA, ASARECA providing substantial knowledge through their Knowledge Hubs 	<ul style="list-style-type: none"> Absence of KM programs and interventions hinders harmonization and coordination in implementation of agricultural KM programs.

4. Themes

Theme 1. Knowledge Management in the Management System

Knowledge Management is a relevant business function, which needs to be anchored in the Management System as other functions, like Finance Management. The existing management and leadership instruments shall be adjusted and adopt knowledge management aspect:

a) **Knowledge Management Process:**

A dedicated KM Process shall be implemented, describing the PDCA-Cycle for KM and linked with the PDCA-Cycle of the organization. The annual KM Process shall describe the following steps:

- Analysis and review of the strategic context of KM, and planning/modifying the KM policy and strategy, including detailed action planning with clear roles, responsibilities, resources, budget, risks, deliverables and indicators. This shall be timely linked with the corporate planning and budgeting cycle. Knowledge objectives/goals shall be integrated or linked with the organizational output, outcome, and impact objectives (PLAN)
- Implementation of KM Actions (DO)
- Semi-annual review of achievements (CHECK)
- Definition of corrective action to assure the achievement of the objectives (ACT)

b) **A KM Governance Model shall be defined:**

The roles and responsibilities, as well as the required competences of the staff shall be defined and performance goals for knowledge-specific tasks shall be defined and anchored in the performance management system. Any staff member shall understand the organizational KM policy and the related general responsibilities for knowledge. They shall have clear knowledge objectives defined and resources for their achievement shall be agreed.

The Management is responsible for the development of a knowledge culture that supports the implementation of the KM strategy

The M&E system shall adopt indicators from the KM Strategy and review the achievement of the knowledge goals. An awareness and training programme shall be developed to raise the understanding of the km strategy and enable the staff to implement it.

Theme 1	
Benefits	<ul style="list-style-type: none"> • Knowledge Management (KM) acts as a pillar for strengthening TARI's client responsiveness • KM becomes a stable and sustainable element of Management and deliver sustainable benefits to the organization • Management and staff have clear understanding of roles and responsibilities in KM, as well as the competences to achieve knowledge goals. • The function of the Knowledge Manager provides coordination, efficiency and effectiveness, as well as sustainability of KM actions. • Knowledge Managements acts as a pillar for strengthening MoA and TARI client's responsiveness
Key measures	<ul style="list-style-type: none"> • Defining the KM policy, an annual KM process, KM strategy, roles and responsibilities with job descriptions, action plan, and performance indicators for KM on organizational and individual level.
Key Deliverables	<ul style="list-style-type: none"> • KM Policy developed • Regularly reviewed and updated KM action plan developed • Annual KM report (including M&E) • KM objectives anchored in the performance management system
Resources	<ul style="list-style-type: none"> • One full time staff for Knowledge Management • Contributions by all relevant units • Contributions by all knowledge workers • Financial Resources for training, reviews, reports, monitoring and evaluation
Responsibilities	<ul style="list-style-type: none"> • Knowledge Manager coordinates the KM process and advises the management and colleagues, provides training and support and reports on achievements. • The Management adopts KM to the strategy, takes strategic decisions, communicates the strategy and acts as a role model, creates a knowledge sharing culture and reviews the implementation of the KM strategy. • The KM Team contributes to the coordination and implementation of the KM Action plan • Human Resources Department creates terms of references for the new position and cares for the anchoring of KM tasks in the ToRs of all staff • TARI Board reviews and approves plans and reports
Target	<ul style="list-style-type: none"> • KM is a well understood and accepted function, sustainably anchored in the structures and processes of the organisation • All departments in the organization contribute to KM as a joint effort
Implementation period Risks and their mitigation	<ul style="list-style-type: none"> • Knowledge Manager engaged and KM Team established within 6 months. • All structures and process established within 12 months • Further implementation and improvement ongoing

Theme 1

Risks and their mitigation

- Risks: Resistance to create the position (Knowledge Management Position), lack of resources
- Mitigation: Leverage on people with KM skills, or those that have interest; involve the TOP-Management from the beginning; foster KM trainings at an early stage

Theme 2. Knowledge Products and Services

The organization provides a wide spectrum of knowledge services and products including:

- Scientific and popular publications
- Training and other capacity development activities
- Extension and outreach services
- Agricultural data

For each of the knowledge products and services, the organization shall determine the intended output with quality criteria, and also outcomes and impact. Specifically the usability and applicability of the products/services shall be evaluated.

On a regular basis, feedback by the users on the quality of the products and services shall be acquired, and the outcome and impact of the products / services shall be reviewed by simple means. The focus shall be to enable end-users to take action. Therefore the evaluation shall also include, to which extent the desired action has been taken. Based on the feedback, the formats/ templates shall be adopted.

A “Train-the-Expert” Programme shall be provided to all knowledge workers, to strengthen their skills in developing user-friendly, impactful knowledge products and to deliver excellent knowledge services.

The formats of the knowledge products and services shall be aligned with the formats of the other regional and continental partners to the extent possible and reasonable, for better interoperability and usability. Coordination with CCARDESA and FARA shall support this alignment.

Theme 2	
Benefits	<ul style="list-style-type: none"> • Higher quality and impact of knowledge products and services • Better use and interchangeability of k-products and services on regional and continental level • Strengthen communication skills • Understanding products' features allows the organization to present their benefits accurately and persuasively • Knowledge products and services facilitates knowledge translation and exchange among key players •
Key measures	<ul style="list-style-type: none"> • Define a process for development, dissemination/delivery, and review/improvement of knowledge services and products • Review products and services • Improve and align where possible to the regional/continental products and services • Implement the Train-the-Expert programme for all knowledge workers
Key Deliverables	<ul style="list-style-type: none"> • Process defined and implemented • Defined set of knowledge products & services improved • Process and equipment for video production available • Implementation plan for all knowledge products and service • Trainings for knowledge workers implemented • Roles and responsibilities as well as processes related to the K products and services are clear
Resources	<ul style="list-style-type: none"> • Time for review, improvement/development of knowledge products and services • Cost for video equipment and production • Training cost • Staff with knowledge synthesis and translation skills
Responsibilities	<ul style="list-style-type: none"> • Knowledge Management office/ coordinator • TARI management facilitate access to resources
Target	<ul style="list-style-type: none"> • 50% of products & Services produced and shared • Annual review knowledge products and services, continuous feedback • 50% of knowledge workers participated in the "Train the Expert" programme. •

Theme 2	
Implementation period	<ul style="list-style-type: none"> • Implementation of process: 3 months • Renewal of knowledge products and services: 3 months • Train-the-Expert Training programme: 6 months for the first 50% of staff. • Video equipment
Risks and their mitigation	<ul style="list-style-type: none"> • Risk: Lack of support and discipline of staff • Mitigation: We create awareness on the benefits of knowledge products and services, train people to perform better • Risk: Budget constraints • Mitigation: Demonstrate the difference in impact when knowledge products are improved. Leverage on existing project with a budget

Theme 3. Knowledge Agents (strengthening human knowledge assets)

Knowledge Management is a cross-disciplinary and complex domain and requires well capacitated Knowledge Managers as well as trainings for other functions, like managers, project managers, community facilitators, knowledge workers, and subject-matter experts who can lead or contribute to the transformation of TARI into a professional knowledge-driven organization.

The following trainings shall be provided and implemented:

- 1-2 staff members should participate annually in the KM4AgD Challenge or in a comparable Knowledge Management Certification Programme
- A knowledge leadership workout (2x1,5 hours) shall be provided to all managers/supervisors
- A “Train-the-Expert” Programme (5 x 1, 5 hours) shall be offered to all knowledge workers.
- Special trainings shall be provided in the areas of knowledge capturing, knowledge creation and dissemination (providing excellent knowledge products and services), as well as Community-Facilitation. These trainings shall be provided to those who take specific responsibility in related activities.

Participation in the KM4AgD Community of Practice

The Knowledge Manager as well as other staff working or being interested in KM shall join the KM4AgD CoP for Knowledge Managers and AI. This CoP shall help to benchmark the qualifications and develop a competency framework for KMers in Agricultural Development.

Theme 3	
Benefits	<ul style="list-style-type: none"> • Knowledge as a fundamental resource is professionally managed • Better and faster decision making • Increase of productivity and impact • Reduction of cost and unnecessary mistakes/redundancies •
Key measures	<ul style="list-style-type: none"> • Certified Knowledge Managers • Trainer managers, functional experts, and all knowledge workers • Conduct Benchmarking exercise with other organizations
Key Deliverables	<ul style="list-style-type: none"> • Implemented trainings & awareness workshops • Certifications • Benchmark results
Resources	<ul style="list-style-type: none"> • Time to manage the trainings; • Time for learning and participation in the CoP • Financial Resources for training (external trainers) •
Responsibilities	<ul style="list-style-type: none"> • Knowledge Manager, HR •
Target	<ul style="list-style-type: none"> • Conduct 2 training & workshops in a year • Regular participation in CoP with semi-annual transfer report • KM benchmarking exercise implemented •
Implementation period Risks and their mitigation	<ul style="list-style-type: none"> • Implementation of trainings within the first year • Ongoing trainings •
Risks and their mitigation	<ul style="list-style-type: none"> • Risk: Lack of interest (low) • Mitigation: Leadership commitment and cost-free participation; leverage on existing partnerships e.g. CCARDESA

Theme 4. Knowledge Hub (strengthening structural knowledge assets)

The current information systems show several strengths and weaknesses. The need for improvement is specifically in the following areas:

- Integrate the various siloed data and information. This shall specifically be fostered through the use of tags and a taxonomy that allows corporate-wide search along all data sources.

According to the Akosombo Integration Agenda, the following tools shall be favored:

- Using DSpace as a repository or document management system. However, through a taxonomy also other tools can be integrated.
- For business Intelligence / Data Management, DKAN is commonly used and recommended
- For Expert Finding, our current database shall be linked with FARADatInformS
- TARI shall join FARA's initiative to develop a continental Knowledge Graph for Agricultural Development, which will help to link continental resources and make them available to the extent desired. This will allow also to join AI-specific applications with our own resources.
- For the facilitation of Communities of Practice, the use of DGroups is recommended.
- All these functionalities shall be integrated in "TARI Knowledge Hub", which should be part of the intranet.

Theme 3	
Benefits	<ul style="list-style-type: none"> • Find and use knowledge resources faster, reduce time for searching • Reduce cost and increase quality • Strengthen collaboration within and beyond the organization • Linking existing knowledge systems and making them accessible at one point. • Prevent knowledge loss
Key measures	<ul style="list-style-type: none"> • Assess existing systems • Linking all siloes through tags, taxonomy and knowledge graph, based on API (application interfaces) • Link database with CCADESA's and FARA's database via DKAN • Open an account on DGroups, start CoPs there • Link expert database with FARA's expert database

Theme 3	
Key Deliverables	<ul style="list-style-type: none"> • The Knowledge Hub is online and functional, linking existing system and making them accessible on the knowledge hub • DGroups CoPs are functional and in use, integrated into the K-Hub • Continental Knowledge Graph and AI-Applications (participation) • TARI's experts are findable on FARA's expert database
Resources	<ul style="list-style-type: none"> • Human Resources (IT staff, KM officer, Top Management) • Financial Resource, cost to be determined based on Assessment results
Responsibilities	<ul style="list-style-type: none"> • Knowledge Management officer • Top Management • IT Manager
Target	<ul style="list-style-type: none"> • 100% integration of knowledge systems
Implementation period Risks and their mitigation	<ul style="list-style-type: none"> • 1 year development • Ongoing implementation and further improvement
Risks and their mitigation	<ul style="list-style-type: none"> • Risk: Resistance from departments and other stakeholders • Mitigation: Involve and strong leadership of top management • Risk: Mistakes in the technical development • Mitigation: Collaboration with experienced external/internal experts

Theme 5. Knowledge Communities (strengthening knowledge networks)

Thematic collaboration across departments and beyond the organization becomes more and more important to be up-to-date, to co-create solutions for our challenges, and to implement complex projects and initiatives. Communities of Practice (or knowledge communities) are the instrument of choice to strengthen collaboration and should be established with a clear purpose (formulated in a CoP-charter) and facilitated professionally.

A number of internal staff should be qualified to facilitate CoPs professionally, and a group of facilitators shall be established to strengthen each other in this challenging task. KM shall be the coordinator for this group and the driver for the advancement of loose networks towards professionally managed CoPs.

For internal CoPs, the use of abc (eg teams) is recommended, as it is already in use and links the CoPs with existing data and tools. For CoPs going beyond the organizational borders, the use of DGroups is recommended.

Theme 5	
Benefits	<ul style="list-style-type: none"> • Communities produce knowledge for national & regional use and benefit. • Members of CoPs are motivated because their knowledge products reach wider audiences/networks. • Promotes Culture of sharing knowledge
Key measures	<ul style="list-style-type: none"> • Training a group of CoP Facilitators • Establishing/upgrading Community of Practices in key thematic areas with a clear process and a CoP Charter; report semi-annually on achievements and outputs
Key Deliverables	<ul style="list-style-type: none"> • CoP Process defined and established • Team and DGroups functionalities defined, availed and facilitators instructed to use them • CoP Facilitators trained to facilitate CoPs • 5 initial CoPs established with a CoP Charter • Knowledge products and services regularly produced according to the Charter and disseminated by the CoPs
Resources	<ul style="list-style-type: none"> • Time for KMers and Facilitators (10 days) • Support of IT
Responsibilities	<ul style="list-style-type: none"> • Chairperson of KM committee to coordinate Community of Practice • KM team to support CoPs • Facilitators to facilitate the CoPs • TOP-Management to mentor the CoPs
Target	<ul style="list-style-type: none"> • Establish and promote 5 Communities of Practices within the first year • All CoPs to report on knowledge captured and shared.
Implementation period Risks and their mitigation	<ul style="list-style-type: none"> • Training of COP members within 6 months • Implementation is going
Risks and their mitigation	<ul style="list-style-type: none"> • Risk: Some experts may not value the CoPs • Mitigation: Start where the energy is; regular trainings to be provided; strong facilitators to be trained; group of facilitators supported by KM • Risk: Knowledge captured is only available to CoPs participants • Mitigation: Capture meeting outputs and share outputs widely

Theme 6. Knowledge Processes (strengthening collaboration)

Knowledge is a vital resource to the organization and these key knowledge processes shall be defined and optimized. This includes the following or more:

- Knowledge Capturing: Principles and processes for knowledge capturing e.g. After projects, after events/missions, and specifically knowledge capturing of leaving experts
- Finding knowledge: Principles and processes of how to research and find existing knowledge
- Knowledge acquisition: Principles and processes of how to acquire knowledge
- Knowledge creation: Principles and processes of how to create new knowledge (e.g. in teams, communities, networks; applying an innovation processes; using creativity techniques)
- Knowledge dissemination: Processes and instruments to disseminate knowledge
- Knowledge community process: How to establish, run and close a KC
- Knowledge organisation: Principles and processes of organizing knowledge (from file share to knowledge graph)

Theme 6	
Benefits	<ul style="list-style-type: none"> • More efficiently and impact in these core business practices • Saving time and money • Increase the quality of knowledge workers
Key measures	<ul style="list-style-type: none"> • Define and optimize the knowledge processes • Train staff in using them
Key Deliverables	<ul style="list-style-type: none"> • Process descriptions incl. roles, responsibilities, resources • Trainings
Resources	<ul style="list-style-type: none"> • Staff to develop processes and to implement them • Cost for training
Responsibilities	<ul style="list-style-type: none"> • KM as a coordinator; Wider KM groups for the implementation
Target	<ul style="list-style-type: none"> • 5 key processes defined and all related staff trained within 6 months
Implementation period	<ul style="list-style-type: none"> • 6 months for definition and capacity building • Continuous further development
Risks and their mitigation	<ul style="list-style-type: none"> • Risk: Low prioritization, feeling of bureaucracy and overburdening • Mitigation: Making the processes user-friendly, generating the experience of an alleviation

Theme 5. Knowledge Communities (strengthening knowledge networks)

Knowledge Communities are communities of people who are interested in the development of a knowledge domain and achieving common impact, like advancing best practices, policies or science. Knowledge Communities are an essential element in the knowledge ecosystem. They are essential prerequisites for delivering solutions and innovations.

Knowledge Communities will be created for different agricultural topics such as soils, phyto-genetic resources, biodiversity, pests and diseases, post-harvest and agro-processing, among others).

The functioning of knowledge communities will be ensured by the use of interaction/dialogue technologies for teams (internally), and Dgroups (externally) for interaction at regional or international level)

<i>Theme 5</i>	
Benefits	<ul style="list-style-type: none"> Producing knowledge for national, regional and continental use. Facilitating connections /dialogue between people with common interest and expertise in a specific topic. Supporting the capturing, collection, sharing, discussing, evaluating/reflecting, enriching, and disseminating of data and knowledge within a knowledge domain. Facilitating innovation, technologies and knowledge visibility, and learning.
Key measures	<ul style="list-style-type: none"> Knowledge Communities promoted/created Topics of interest in discussion Knowledge reports generated by communities of practices on achievements and outputs.
Key Deliverables	<ul style="list-style-type: none"> Communities' charters Number of knowledge products and services produced and disseminated by the communities of practices Quantity and quality of captured knowledge Topics of interest in discussion and learning
Resources	<ul style="list-style-type: none"> Time to motivate, advise and train CoP members Time for capturing knowledge and earnings from discussions / communities Technical and financial resources

Theme 5	
Responsibilities	<ul style="list-style-type: none"> • Knowledge Manager • KM Communities coordinators
Target	<ul style="list-style-type: none"> • At least 2 communities of practices created • 10 topics discussed •
Implementation period	<ul style="list-style-type: none"> • Motivation and creation of CoPs within 6 months. Implementation is ongoing
Risks and their mitigation	<ul style="list-style-type: none"> • Motivation risk: participating in a knowledge community may not be considered a value by some experts/institutions. Mitigation: Training

Theme 7. National Knowledge Partnership for Agricultural Development

TARI is an important stakeholder in the agricultural sector of the country and takes responsibility to the advancement of knowledge in the sector. However, many relevant actions can only be adequately developed and implemented in partnership with other key stakeholders. Therefore, TARI shall initiate - in cooperation with other players - a National Knowledge Partnership for Agricultural Development.

The NK Partnership shall convene the partners and assess the pressing challenges in the knowledge ecosystem (eg linking organizational knowledge repositories, sectorial knowledge dissemination, knowledge collaboration, knowledge integration, strategic orientation towards a knowledge value chain) and develop a National Agricultural Knowledge Agenda. Based on an agreed structure and a process to facilitate the partnership, TARI shall contribute actively in the core team of the Partnership. The Knowledge Partnership shall take responsibility in various sectorial CoPs and be an active contributor in the implementation of the Knowledge Agenda.

Theme 7. National Knowledge Partnership for Agricultural Development

Benefits	<ul style="list-style-type: none"> Achieving more impact in agricultural development through partnership, coordination of knowledge flows, joint knowledge agenda and actions. Achieving more sustainability in agricultural development through a targeted, systematic, integrated approach to national knowledge management based on clear structures, agreed governance model, and defined joint programs.
Key measures	<ul style="list-style-type: none"> Establishing a National Knowledge Partnership together with other key stakeholders in agricultural development. Establish a structure (governance model) and process. Develop a knowledge agenda, based on partner contributions (ranging from statements of leaders to collaborative events)
Key Deliverables	<ul style="list-style-type: none"> National Knowledge Partnership for Agricultural Development established National Agricultural Knowledge Agenda formulated and agreed TARI contributes to the success as a core team member.
Resources	<ul style="list-style-type: none"> Time for the development and mobilization of the partnerships Time for joining the core team Financial contributions to convene events
Responsibilities	<ul style="list-style-type: none"> KM Office with support/leadership of the TOP Management
Target	<ul style="list-style-type: none"> Knowledge Partnership is established and functional within 6 months with agreed structure and process Knowledge Agenda and action plan available in a first draft version within 6 months
Implementation period	<ul style="list-style-type: none"> 6 months for initial activities Continuous advancement
Risks and their mitigation	<ul style="list-style-type: none"> Risk: Knowledge Partnership is dominated by one key player. Mitigation: Run for a balanced core team and select a neutral facilitator



5. Roles and responsibilities

General KM roles and responsibilities

All offices, units, programmes, and projects within the organization/community will be involved in the implementation of the KM Strategy. Leading roles are highlighted as follows:

- **Management:** Gives orientation, leads the KM program and mentors the KM team. Approves adjustments in the Management system. mentors CoPs; dedicates resources to KM
- **KM Group:** Assures the coordination of the organizational knowledge management strategy and cares for the implementation in the respective departments. It includes representatives of departments, which play a relevant role in KM.
- **Knowledge Manager:** Coordinates all KM Activities and the KM Group; advises management and colleagues in all aspects of KM, provides training and support; joins KM Communities, conferences, trainings, and avails key learnings to colleagues; reports on achievements in KM and CoPs.
- **Facilitators of Communities:** Facilitate the Communities of Practice to achieve the maximum organizational impact; they share their experiences with each other and care for strong dissemination of CoP outputs
- **Subject-matter experts (lead experts):** Assure that the organization is acting at the state-of-the art in the specific subject area; contributes to CoPs and avails knowledge to colleagues; trains, publishes, captures and disseminates knowledge; contributes to the knowledge graph – if applicable
- **Knowledge workers (general responsibility):** Competent use of knowledge and application of the offered resources. Providing internal and external knowledge services

Table 3. Specific KM roles and responsibilities in the implementation of the themes

Roles and responsibilities	M	KMG	KM	FC	SME	KW
Theme 1: Knowledge Management in the Management System						
Activity 1 Provision of leadership support						
Activity 2 Knowledge Development Goals						
Activity 3 KM Policy developed						
Activity 4 Regularly reviewed and updated KM action plan developed						
Activity 5 Annual KM report (including M&E)						
Activity 6 KM objectives anchored in the performance management system						
Theme 2: Knowledge Products and Services						
Activity 1 Generation of knowledge products						
Activity 2 Provision of knowledge services						
Activity 3 Train of Experts						
Theme 3: Knowledge Agents (strengthening human knowledge assets)						
Activity 1 Implemented trainings & awareness workshops						

Roles and responsibilities	M	KMG	KM	FC	SME	KW
Activity 2 Generation of knowledge products						
Activity 3 Knowledge sharing & coordination						
Theme 4. Knowledge Hub (strengthening structural knowledge assets)						
Activity 1 Coordinate knowledge sharing activities						
Activity 2 Knowledge Skills Programme						
Activity 3 Capturing knowledge from projects						
Theme 5. Knowledge Communities (strengthening knowledge networks)						
Activity 1 Experiences sharing						
Activity 2 Training and support						
Activity 3 Capturing knowledge from Knowledge Communities						
Activity 4 Capturing knowledge from social media and apps						
Activity 5 Capturing knowledge from extension services						
Activity 6 Capturing knowledge from donors and other AR4D partners						

Roles and responsibilities	M	KMG	KM	FC	SME	KW
Activity 1 Provides training and support						
Activity 2 Sharing experiences						
Theme 7						
Activity 1 Setting up CoP						
Activity 2 Coordination of CoP						

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of certification	Assumptions
Goal	Enhanced utilisation of agricultural knowledge	Indicators as in the organizational strategic framework	<ul style="list-style-type: none"> TARI annual report KM annual report 	Agricultural knowledge is developed and used
Expected results	1. KM anchored in the Management System	<ul style="list-style-type: none"> Number of KM awareness workshops held % of senior staff who participated in KM training KM Group established KM activities plan approved No of employees trained in Knowledge Management (KM) practices 	<ul style="list-style-type: none"> KM annual report KM training Report Number of groups established Training reports 	Knowledge management coordination is effective, strategy is properly implemented and resources are sufficient
	2. Impactful portfolio of knowledge products and services	<ul style="list-style-type: none"> % of knowledge products developed according to knowledge gaps % of knowledge products and services developed and shared % of publications and papers by IIAM staff available on external platforms/library catalogues/e-repositories of partner institutions 	KM annual report	
	3. Advanced Knowledge Agents	<ul style="list-style-type: none"> Number of personnel trained in knowledge management Number of new knowledge management technician Number of technicians hired for the 	<ul style="list-style-type: none"> KM annual report Training reports 	

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of certification	Assumptions
	4. Impactful Knowledge Hub	<ul style="list-style-type: none"> • DSpace use for integration of data • DGroups use in communities of practices • Knowledge graph and artificial intelligence solutions • Data integrated at national, SROs and continental levels 	KM annual report	
	5. Strong Knowledge Communities	<ul style="list-style-type: none"> • Number of knowledge communities established • Number of topics discussed and learnings 	KM annual report	
	6. Performative Knowledge Processes	<ul style="list-style-type: none"> • % of staff trained in KM-related capacities using new skills • Number of lesson learned and shared • Number of knowledge-sharing events organized • Standards/ formats to capture knowledge in projects and events 	KM annual report	
	7. Advanced knowledge ecosystem (national knowledge partnership)	<ul style="list-style-type: none"> • Number knowledge partnerships established 	KM annual report	

7. Implementation Roadmap

Implementation Period	Y1: Q1-4				Years 2-10					
	1	2	3	4	5	6	7	8	9	10
KM presentation to TARI Team, conceptualization, awareness and goal setting	■	■	■	■	■	■	■	■	■	■
Review and validation of the KM	■	■	■	■	■	■	■	■	■	■
Creation of an inventory of agricultural research KM stakeholders and engagement	■	■	■	■	■	■	■	■	■	■
Preparation of Data base	■	■	■	■	■	■	■	■	■	■
Creation of an Tanzania KM Community of partnership	■	■	■	■	■	■	■	■	■	■
Strengthen coordination of KM activities, products and services	■	■	■	■	■	■	■	■	■	■
Capturing knowledge from projects, events and leaving expects and retired officers	■	■	■	■	■	■	■	■	■	■
Set up KM performance management	■	■	■	■	■	■	■	■	■	■
Establish an information system for wider dissemination of research and innovation results	■	■	■	■	■	■	■	■	■	■
Promote KM monitoring and evaluation activities	■	■	■	■	■	■	■	■	■	■

Stage of developing and dissemination

Stage of application, maintenance and further development



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