



**Use of innovative ICT tools to
improve dissemination of rice
information in Kenya:
“A case of the Kenya Rice
Knowledge Bank”**

Boniface Akuku*, Makini F, Wasilwa L, Makelo M, Kamau G

**Assistant Director, Information Management & Communication
Technology, KARI**

UBUNTUNET-CONNECT – LUSAKA, ZAMBIA, 10-14 NOVEMBER 2014



Presentation Outline

- Introduction
- The KRKB Framework
- Objectives
- Methodology
- Results and Discussion
- Conclusion





Introduction: Experience ICT Innovation & Knowledge Management Excellence in Agricultural research



Organic Farm Fresh
Fruits & Vegetables





Introduction

- The Kenyan Rice Knowledge Bank (KRKB) is a comprehensive national **repository** of **research, extension, training** and other materials related to rice and rice production **knowledge**



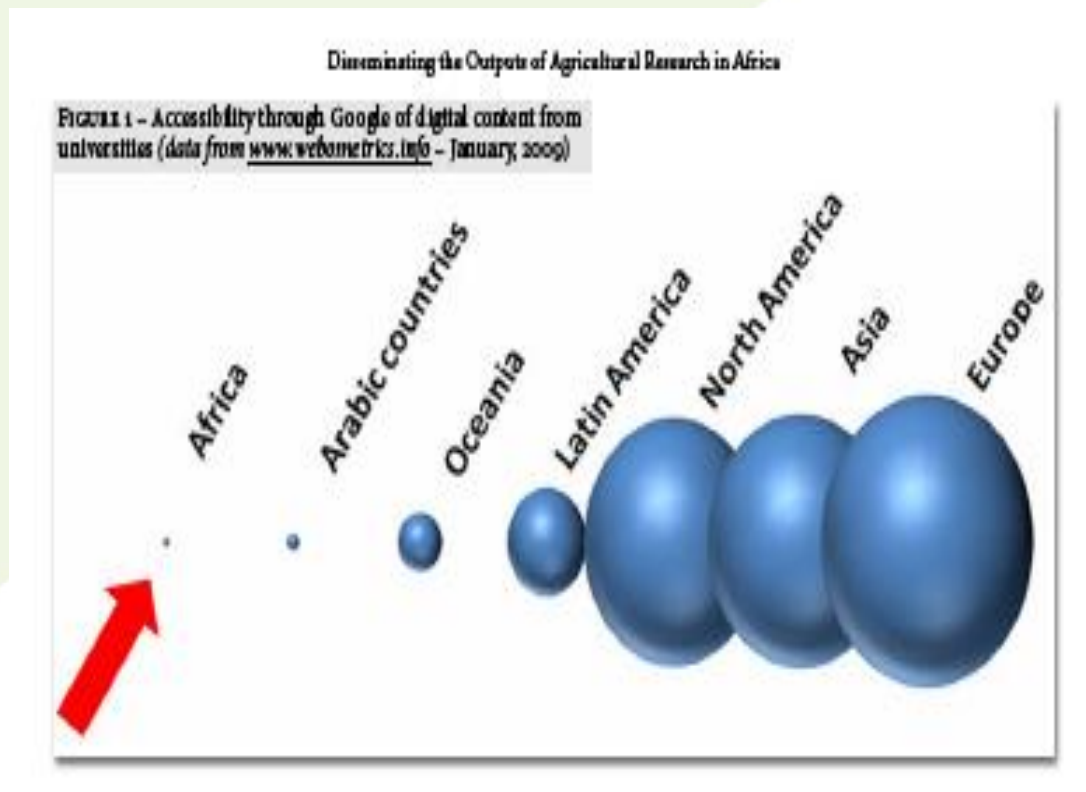


Introduction...

The KRKB provides farmers with **online practical knowledge solutions**. It is a showcase of **rice farming techniques**, and **best practices** from KARI's **pool of knowledge from research findings and learning** in Kenya, for all value chain actors most importantly the farmer.



Justification: Agricultural Research Visibility & Accessibility



A serious problem has emerged **Information** is “trapped” in paper

***Africa is very poor in knowledge
Dissemination***

Source FAO report 2009



The Kenya Rice Knowledge bank:

Framework



- The KRKB is developed using open source software, extensible framework for building and deploying knowledge bases utilizing RDMS, text indexing engines.
- Anchored on modern ICT structures to facilitate effective comms, dissemination & processing of inf. & Knowledge





Kenya Rice Knowledge Bank

The portal provides access to Rice knowledge and information.



The portal through its knowledge management systems **is an efficient warehouse and repository of relevant research** information, knowledge and technology in rice production.





THE KENYAN RICE KNOWLEDGE BANK

- About us
- Agronomy Guides
- Step by Step Production
- Resources
- Other Crops



Farmers preparing rice farm in Ahero

Main Menu

- Home
- Feedback

Login Form

About us

Welcome To The Kenyan RKB

The Kenyan Rice Knowledge Bank is a leading pan-African rice research organization committed to improving livelihoods in Africa through strong science and effective extension services.

Search here

Main Objective



- **KARI envisions a vibrant commercially oriented agricultural sector, propelled by innovative technologies, knowledge and approaches that respond to demands and opportunities.**
- The KRKB aims at **sharing rice farming knowledge** from **national** and **international** research centres and other stakeholders with **farmers** and **extension agents** with the ultimate goal of **improving livelihoods** of the rice farming communities.





Objective 1: ICT and MDGs

- The KRKB takes advantage of opportunities offered by information and communication technologies (ICT) to **enhance availability of knowledge**, information and technologies generated through strong science and effective partnerships.



Objective 2: KM as a development tool

- The purpose of knowledge management is to create, transfer and apply knowledge with the purpose of better achieving objectives:
 - Knowledge as enabler of institutions and governance
 - Knowledge as a driver of competitiveness & productivity
 - Knowledge as facilitator of welfare & environment



Others KRKB objectives...

- Create a knowledge & **technology repository**
- Provide information, knowledge & **technology gateway**
- Provide sustainable support for future **strategy formulation** in Rice production & **Research**





Objectives...

- Provide **low cost real time** platform for information access
- Provide a **dynamic technology** platform
- **Foster linkage** among researchers, farmers & collaborators
- **Create a platform to catalyse** & strengthen existing institutional capacity through **convergence & networking**





KRKB Goals

- To develop a sustainable, up to date, comprehensive National Rice Knowledge Bank that shares rice production knowledge from national and international research centres and other stakeholders with farmers and extension agents.'
- To show case that ICT innovative tools (e-agriculture) is a good model for addressing the 21st Century challenges in agriculture.





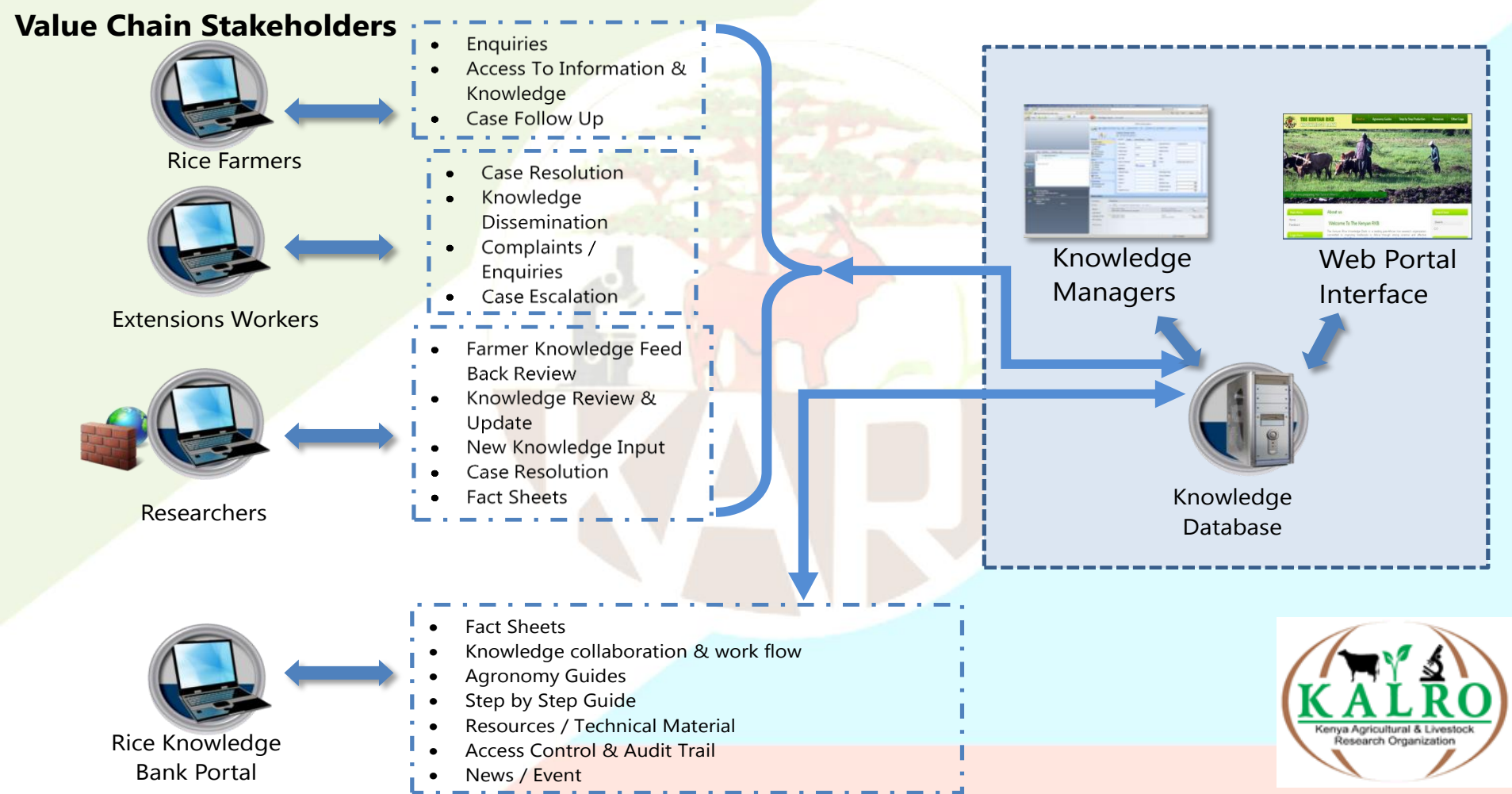
Methodology

- The Kenya Rice knowledge bank (KRKB) system is a web portal built on **open access standard** platform.





Methodology: Solution Architecture





Open Access standards

- The KRKB is developed using **open database connectivity standards**.
- Open access principles exists in the institution
- Support for open access to **knowledge facilitation, dissemination rapid knowledge transfer initiatives**

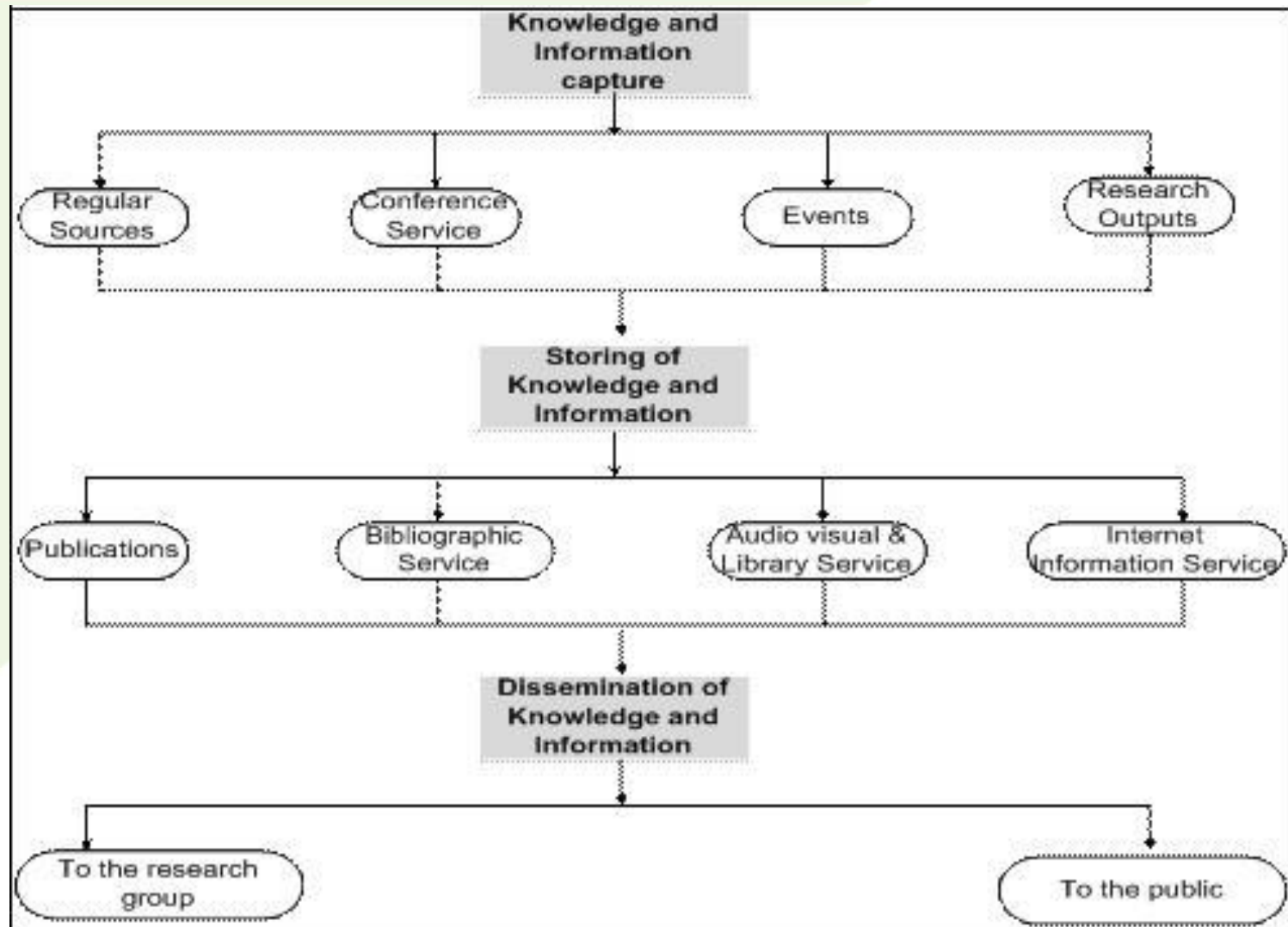


Knowledge and information tools

- KB Creation---→KB Storage---→ KB Dissemination---→KB use
- Effective KM →Right Knowledge
→Delivered to Right person → At Right Time→ In User friendly Manner that Enables recipients perform efficiently



Knowledge and information process





Write shops

- Content development scenarios
- Content packaging
- Facts sheets development
- Content validations





Results: Research Informatics

KRKB is a user-based platform instrumental in harnessing the **power of scientific knowledge and technology transfer** to rice farming in Kenya

- **ICT Innovation transforming agricultural research knowledge disseminations and sharing.**





Results: Knowledge Reuse

The KRKB offers a systematic reuse of scientific knowledge, better access and application results in cost reduction for farmers





Results: Enhanced Visibility

- **Accessibility, availability and reliability and actionable information in rice production in Kenya**
- **Accelerating the research and extension systems towards farmer and stakeholders friendly approach**



Results: Open data Access achieved

- **Effective and efficient resource utilization strategies through partnership & convergence**
- **Single window arrangement for obtaining technological solution in rice farming & research**



Results: Reduced cost and time of information flow



- ❖ **Real-time access to knowledge using simple and cheap**
- ❖ **Inclusive and sustainable Rice agricultural research backed by right ICT technology & innovation**



Contribution

- The Kenya Vision 2030
- MDGs
- CAADP framework
- Science Agenda





Discussion: Value of ICT

"you want know the value ICT makes to research institutions? Try to live without them..."

International Telecommunication Union (ITU, 2006)



Discussion: Why ICT Innovation in Agriculture



- **Agriculture is generally fairly conservative by nature**
- **“In a world where most of the poorest are farmers, investments in agriculture are the best weapons against hunger and poverty. To help the poorest seize agriculture’s potential, **we need to unleash as much innovation as possible.**” *Bill Gates, Keynote address 4th Feb 2014 Abu Dhabi***





Innovation in Agriculture

“History shows us that the most effective route to keeping global food prices low is to **massively increase investment in agricultural innovations.”**

Dr Frank Rijsberman, CEO of CGIAR Consortium





CONCLUSION

- **Conducting Agriculture research and technology development has little value if the information doesn't reach the farmers & stakeholders without loss or delay**
- **The food security remains a challenge, a dream and fragile hence the need for innovative approaches such as KRKB where ICT is driving agriculture**

Way forward!

- “Better Research starts with better information”, that it is available when and where it is needed to make decisions and innovate, ensuring that data becomes knowledge to move Research beyond theory to practical application.



ACKNOWLEDGEMENT



Eastern Africa Agricultural Productivity Project (EAAPP)



Kenya Agricultural Productivity Programme

Promoting agriculture for faster development