
Building the CIARD Framework for Data and Information sharing -- Kenya Case

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Accessing agricultural content in Africa has not always been easy for most researchers and other stakeholders in agriculture hence the need to implement policies and strategies that would enable sharing and exchange of information and data. Policies and strategies both at National and institutional level are key in ensuring the three AAA"s (Availability, Accessibility and Applicability) of information/data

In the case of Kenya, the government has placed a lot of emphasis on using ICT to improve the livelihoods of Kenyans. To this end, a number of documents have been put in place for example the Government Strategy and National Information & Communications Technology (ICT) Policy paving the way for institutes like KARI to develop policies that meets its specific needs. Unfortunately at Institutional level (for example the KAINet Partners) little has been done to implement policies or strategies to foster sharing of scientific information/data. In cognizance of this KAINet's institutional partners, developed of ICM strategies for each partner institution was done they still have to get formally endorsed by senior management.

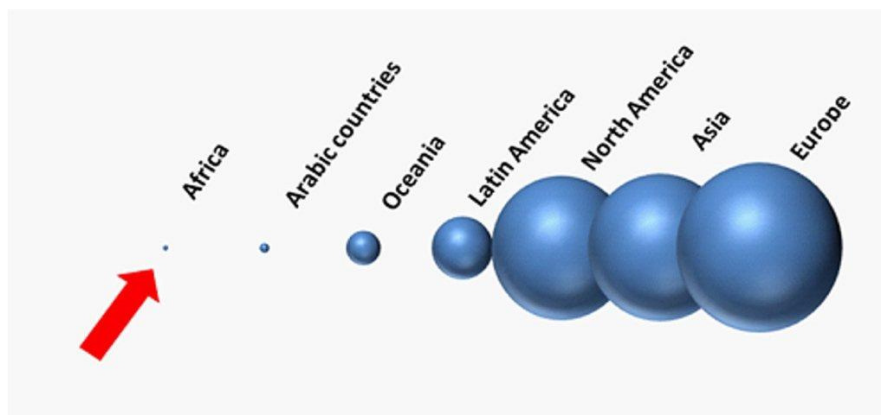


Figure 1: Content Accessed from Africa

Mechanism of sharing information

To support the lack of agricultural related content accessibility and visibility, the Food and Agriculture Organization (FAO) of the United Nations in conjunction with DFID made available to Kenya financial and technical contribution in support for the establishment of the Kenya Agricultural Information Network (KAINet) .This is to build a common and freely accessible information system for the generation, collection, processing archival and dissemination of agricultural information.

KAINet adopted Webagris as its platform to implement partner institutional and national repositories and from lessons learnt from the implementation, it is adopting

the Agridrupal and AgriOcean Dspace to enhance accessibility and visibility of local metadata. These are complete, multilingual web-based systems used for processing and dissemination of agricultural bibliographic information.

With IRs developed at KARI-HQ, KEFRI, MoA and JKUAT the national repository (KAINet) harvested from them. A KAINet website was then developed using drupal for the purpose of enhancing web visibility to KAINet. A web-based repository developed on Webagris with a search engine that makes the repository accessible and visibility was then integrated onto the site give KAINet a one stop platform of both the web presence and online repository.

KAINet Database accessible through <http://www.kainet.or.ke> includes both research literature and local agricultural knowledge with more than 38,000 records and 1,500 full text documents. The scope of content ranges from climate change, forestry research literature, agricultural related literature, water use, and simple brochures/leaflets of which is mostly metadata with 0.5% of the it is full text attachments.

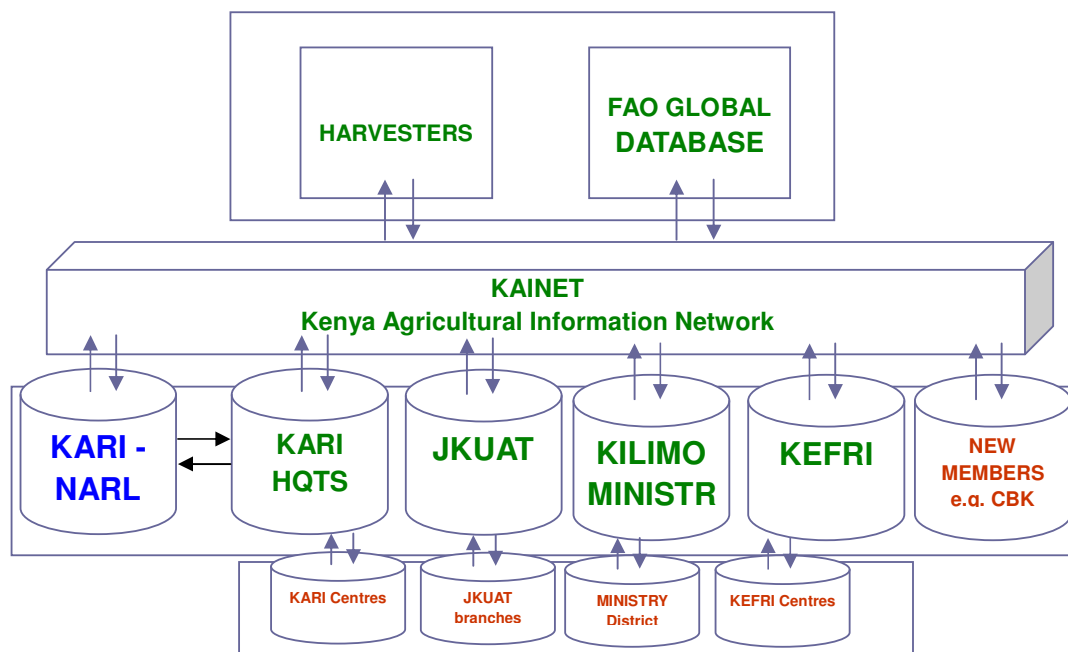


Figure 2: KAINet Network Structure

Interoperability

For the past 20 years or so, the need to exchange information between various partners pushed researchers to develop architectures for the interoperability of information systems. To ensure KAINet partners and other stakeholder are able to exchange data amongst themselves we adopted systems that meet specific architectural and functional requirements for information exchange. Using WEBAGRIS and Agridrupal that have AGRIS Application Profile, this was achieved .The AGRIS Application profile is a standard created specifically to enhance the description, exchange and subsequent retrieval of agricultural Document-Like Information Objects (DLIOs) .It is a format that allows sharing of information across dispersed bibliographic systems and is based on well-known and accepted metadata standards. Some partners within the KAINet family have implemented other tools

that promote interoperability using the Open Archives Initiative Protocol for Metadata Harvesting and Internal/External RSS Feeds (Agrifeeds and e-Agriculture).

Interoperability within KAINet has increased the accessibility of the information/data and has resulted in partner institutions harvesting metadata from the FAO Database and *visa via verse* with Institutions like KERFI growing its repository from 236 records to 1,156 records over a period one year. Access of real time news and events from other agricultural related sources like Agrifeeds and e-agriculture has improved the information/data on KAINet.

Visibility has been enhanced with the KAINet repository being registered at the CIARD Ring and the KARI repository being among the few African repositories at the OPENDOAR (<http://www.opendoar.org>). While via the goggle analytics the access hits have grown from to almost 5,000 since last year June for KARI to almost 40,000.

To ensure further interoperability, members of the KAINet need to join KARI example and implement Web 2.0 tools for example a simple RSS feeds that ease exchange and sharing of information. As we look at improving sharing in the near future we need to implement RDF ([Resource Description Framework](#)) that would enable exchange of richer metadata that can easily be re-processed and re-packaged as new information/data. A long term solution is conduct research into the possibilities of making data sets available and accessible.

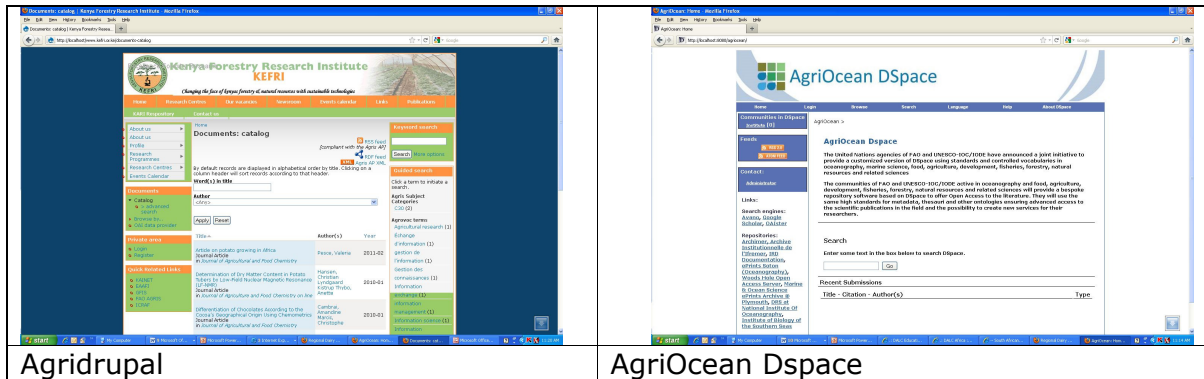
Figure 3: A image of the KAINet site with the RSS feeds

Challenges (obstacles and constraints)

Access to information is critical for enabling citizens to make informed decisions which affect their lives. According to Justin Chisenga (2006), even with the development of ICT and other tools for sharing information, unfortunately the responsibilities of information managers in developing countries is not simple.

The first challenge is the development of the institutional repositories, design and set up of platforms that promote sharing and exchange of data. This is occasioned by the lack or limited capacity and skills in the new emerging web 2.0 tools that foster exchange. The second challenge is the lack of proper institutional policies and strategies that support the use of open access software's added to the lack to awareness on copy rights and IPR (Intellectual property rights) issues by content generators. The last bit as to some extent hindered the collection of metadata from the content generateors. The third challenge, as noted by Ahmed Rafea, poor mechanisms and infrastructure for sharing and exchanging agriculture knowledge generated from research at national and regional levels continue to bedevil the conceived goals. Many research activities are repeated due to the lack of such mechanisms and infrastructure at the national level. The fourth challenge, for accessible and visibility of institutional repositories should be published on Internet, for those institutions that maintain their institution repositories and dynamic website separately, the website is hosted by an ISP (Internet Service Provider) or single machine (unless mandatory), they are lagging behind others and find it a challenge to share and exchange information/data. Most of the institutions lack the ICT infrastructure and capacity in understanding of the new information trends to publish their resources online. There have been several lessons learnt one of which

is to do with, System comparability. Most government-based institutions largely depend on proprietary software systems that limit them in sharing and disseminating information. In addition there is a need to choose the right tools for the different member institutions based on a sound requirements analysis. Clearly, in view of the above, there is great need to inform and educate academics and researchers so that they have a clear understanding of the role of IRs, how they relate to their rights and how they may advance their visibility Kgomotso H. Moahi (2009).



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