

Partnership Facility Final Report

Mobile solutions to network regional NARS

- 1. Strategic Theme (Goal):** Knowledge for Development
- 2. Project Manager:** Jane Frances Asaba
- 3. Period of Project:** Jan – Dec 2007
- 4. Budget Total:** £20,000; Euros 37,722 (Co-funding from 8th EDF through ASARECA)
- 5. Project Code:** DR60002

1. Executive Summary

The Mobile Agricultural Information System (MAIS) is an outcome of a project funded under the CABI Development Fund (CDF) in 2006. CABI Africa in partnership with two networks of the Association for Strengthening Agricultural Research in East and Central Africa (ASARECA), namely the Regional Agricultural Information Network (RAIN) and the Coffee Research Network (CORNET) identified the need for MAIS as a resource for agricultural-sector stakeholders to access information and use technologies resulting from research. The MAIS is being piloted with stakeholders of ASARECA and through a partnership between CABI, ASARECA (CORNET and RAIN) and Virtual City Limited, a young, innovative company with expertise in developing knowledge management solutions. The MAIS integrates web and mobile technologies, exploiting the power of hand-held devices such as Personal Digital Assistants (PDAs) and mobile phones to provide access to information to users, particularly those in remote and inaccessible areas. The system which is based on users' needs facilitates publishing and viewing of information on research activities within ASARECA programmes and provides links to partners' websites. It is currently being tested among agricultural-sector stakeholders of in Kenya, Uganda and Tanzania. The stakeholders include researchers, information officers, extension workers, livestock and coffee industry partners in the public and private sectors. The MAIS enables users to access information such as project activities and outputs; announcements of research grants and training activities; market news such as prices of major agricultural commodities on national and regional markets; early warning information on crop and livestock pests and diseases; and weather updates. Registered users will be able to receive SMS alerts on their mobile phones of important information e.g. tasks they need to action, new emails received or new information posted in their areas of interest. The system also provides a forum for stakeholder to network, share information, ask and respond to technical questions. The system demonstrates the potential role of Information and Communication Technologies (ICTs) especially the use of the web, short messaging services (SMS), email and Wireless Access Protocol (WAP) in promoting access to agricultural and development information. If successful, the pilot project will be scaled out to other users in the East and Central Africa region and in Sub-Saharan Africa.

2. Project Background

In 2006 CABICDF funded a project entitled "Identification of pathways to improved dissemination of research information in Africa: a pilot project" whose objective was to identify methodological and technological innovations for improved dissemination and uptake of research information in Africa. The project was a collaborative initiative involving CABI and three networks of the Association for Strengthening Agricultural Research in East and Central Africa (ASARECA), namely the Regional Agricultural Information Network (RAIN), the Coffee Research Network (CORNET) and the ASARECA Animal Agriculture Research Network (A-AARNET). The project partners consulted various agricultural-sector stakeholders in the East African region on their information needs, how they accessed agricultural information, and their ICT preferences. They identified ICTs and partnerships that could offer potential solutions to their needs. The outcome of the consultations was an action plan on possible solutions to improving access to information, one of which as a project proposal for testing a mobile technology-based pilot information system for dissemination of agricultural information. The system would be based on regional research networks under the ASARECA. Mobile technologies were identified because of their potential to provide access to data to their stakeholders most of who are knowledge workers based in remote areas where telecommunication infrastructure is non-existent.

Subsequently, in 2007 CABI and ASARECA (RAIN and CORNET) agreed to collaborative in a second project to develop the proposed system, later named the Mobile Agricultural Information System (MAIS). Both CABI an ASARECA provided funds for the project and CABI undertook coordination of the project activities.

The MAIS is based on the priority needs of agricultural-sector stakeholders and will exploit the power of the internet and hand-held devices such as Personal Digital Advisors (PDAs) and mobile phones to provide access to information to these users.

3. Project Purpose

To pilot test a system using SMS to network and share information between NARS that are members of regional networks under ASARECA.

There is urgent need for such a system because of the role the agricultural sector plays in African economies and the priority focus that the African leadership has given to the sector which accounts for about 60% of the continent's active labour force, 17% of Africa's total GDP and 40% of its foreign currency earnings. The Comprehensive Africa Agricultural Development Programme (CAADP) is promoting technology generation, dissemination and adoption. Many regional and sub-regional development organizations including the Forum for Agricultural Research in Africa (FARA), the African Union (AU) and the ASARECA have prioritized dissemination and uptake of research information as a critical area that needs strengthening.

4. Brief description/outline of the Project activities, and /or methodologies

CABI Africa played a coordinating role in the project which included the overall supervision of system development. The following key activities were undertaken:

1. Liaising with RAIN and CORNET network coordinators to arrange for funds to be released
2. Commissioning an ICT company to start development of the system. This included developing the Terms of Reference, putting out a call for “Expressions of Interest” to develop the MAIS, selecting the successful bidder and providing all the necessary support to ensure the selected ICT Company embarks on system development.
3. Liaising between ICT company and RAIN and CORNET network coordinators to ensure fulfillment of objectives/TORs
4. Organising consultations including meetings and workshops with partners to review system and provide feedback.
5. Collating information for the system and coordinating partner inputs
6. Contribute to the management the to pilot system (with ASARECA) and monitor user feedback during the piloting phase
7. Coordinating roll-out and user training on the system.

5. Brief description of the Project outcomes

The development outcomes from the immediate work and the wider impacts achieved to date include:

1. A novel web-based Mobile Agricultural Information System (MAIS) which demonstrates how modern technologies can support networking and information sharing among national agricultural-sector organisations (NARS).

Although still a prototype MAIS has been very well received by the “core group” of stakeholders from NARS (RAIN and CORNET networks). However, the system has not yet made an impact on their work because it is still under development. Currently upgrading the beta version to version 1 is on-going. In addition, the project partners are working with the developers to obtain content for the system. Work at this stage has been rather slow for a number of reasons, namely (i) the time-frame allocated to developing the system not sufficient due to delays in realizing funds by ASARECA (ii) there were technology constraints outside the developer’s control that resulted in delays in putting the system online. However, the activity picked up and version 1 of the system was ready by mid-Dec 2007 although pre-testing was delayed till end of January 2008 due to the political unrest that followed the December 2007 elections in Kenya where company developing the system is based. The system can be accessed at <http://196.201.141.139/mris/> . Pre-testing of the system is due to start and feed-back from the core group of users and partners will help to refine the system.

Although the project outputs are yet to be fully realized, the following additional outcomes have been realised:

2. Contribution to the development of MAIS has been realized and the experience gained will be used in other knowledge management systems.
3. Developed stronger relationships with ASARECA and its networks (now converting to programmes)
4. Relationship developed with Virtual City (VC), an innovative firm which is internationally recognized. There is potential in continuing to work with VC to build on the current system and in other initiatives.

CABI is a key stakeholder in this project and will continue follow-up implementation of pending activities, mainly to move the prototype system from version 1 through to the final version that will be released for pilot testing by May 2008. Major coordination activities will therefore be led by ASARECA. The new schedule of activities is given in the section on follow-up below.

CDF funding supported all the coordination work related to consulting with stakeholders to confirm the need for the system; the technologies to be used; developing the partnership to undertake the project; soliciting funds from ASARECA; and developing and piloting the system.

6. Project Beneficiaries (immediate and longer term)

In the short term the project stakeholders are the NARS, particularly the ASARECA networks that are involved in the pilot project (RAIN, CORNET). These stakeholders include researchers, information officers, extension workers, traders and processors of agricultural commodities (crops and livestock, etc.) in Kenya, Uganda and Tanzania are participating in testing the pilot system. Theoretically, any stakeholder of the three networks could benefit from the system as long as they have functional mobile phones and are willing to pay for the costs of communication. In the longer-term, more ASARECA network partners are expected to benefit from the system. Since ASARECA has 7 research programmes (17 commodity/thematic networks) covering 10 countries of East and Central Africa, the system has the potential to benefit a broad range of stakeholders.

7. Contributions to CABI Partnership Facility Goals and subsequent Programmes/Actions

The project is in line with CABI's development mission of improving people's lives worldwide by providing information and applying scientific expertise to solve problems in agriculture and the environment. A novel multi-stakeholder project was supported which is promoting access to knowledge for development. At the same time, are provided expertise in information system development and management; in collating and updating content; and in sourcing for funds to maintain the system.

The project will contribute to the agenda for the Comprehensive Africa Agricultural Development Programme (CAADP) which focuses on technology generation, dissemination and adoption as one of the pillars for promoting agricultural development. Additionally, the MAIS is expected to contribute to building the Regional Agricultural Information and Learning Systems (RAILS), one of FARA's five region-wide initiatives aimed at addressing the priorities for agricultural development. It is anticipated that the pilot system will be up-scaled to include more agricultural- sector stakeholders in the East

and Central African region and subsequently in SSA since the ICTs in use have wide applicability. The system is thus expected to have a positive impact on the conducting of African Agriculture.

Usage of the MAIS is currently being monitored and its benefits and impact will be assessed once the system has been promoted widely. Some of the parameters that will be used for assessing the benefits/impact include: the number of stakeholders (institution, networks, individuals) participating in the system including those providing information to the system, the number of stakeholders accessing the system, the number of stakeholders whose work /businesses will have improved or been facilitated as a result of using the system. Some of this data will be generated by the system (Google Analytics - <http://www.google.com/analytics/>) and some will be collected through user surveys.

8. Dissemination of Results

Progress reports/briefs on development of the MAIS have been regularly shared with project partners, who in turn promote the system in their organisations. A stakeholder workshop to promote the system was held in Sept 2007 in Nairobi, Kenya. During this workshop 13 key stakeholders from the NARS (research, extension and agro-processing industries) in Kenya, Uganda and Tanzania were trained on the system and this “core group” of users will participate in piloting the system and are expected to promote it widely in their organizations and beyond.

9. Follow-up

Follow-up activities include the following:

- Collating additional information from partners and uploading it into the system (Version 1) – Jan/Feb 2008
- Opening up system to “Core group” of users for pre-testing – Early Feb 2008
- Obtaining feed-back on version 1 from “core-group” – by mid- March 2008
- Implementing changes and upgrading System to Version 2 – end of March 2008
- Introducing the system to a broader group of stakeholders who will participate in testing the it – End of March 2008
- Obtaining feed-back on version 2 from broader stakeholder group – by end of April 2008
- Implementing more changes to system arising from feed-back – first week of May 2008
- MAIS goes live to the public – Mid May 2008 (latest early June 2008)
- Promotion of the system using all means available to stakeholders in the ECA region – mid-May 2008

Post project review and evaluation

The purpose of this form is to evaluate the project in terms of science and finances. By this process lessons can be learned and our performance can be optimised both in terms of outputs and revenue generation.

1. Title of Project	Mobile Solutions to network regional NARS
2. Project code	DR60002
3. Summary of success	The project has developed a “Mobile Agricultural Information System (MAIS)”, a novel web-based resource for sharing information which is intended to improve information access and use by stakeholders in the Agricultural sector in the ECA region. The next step is to pilot and roll-out the system to research networks under ASARECA and other agricultural-sector stakeholders in ten ECA member countries. The project is thus contributing to strengthening of partnerships and rationalisation of resources.
4. Region	East and Central Africa
5. Description of the project and main findings [100 words max]	The MAIS is based on mobile technology, integrating internet with mobile phone- technology and other hand-held devices such as Personal Digital Advisors (PDAs) which allow access to large volumes of information in remote and inaccessible areas. Based on wireless infrastructure, the system will enable many stakeholders to effectively participate in agricultural development activities.
Potential impact ▪ Who has benefited already and how? [50 words max]	Improved dissemination and uptake of research outputs and subsequently improved agricultural production. RAIN, CORNET members who are partners in development of the system. Others NARS who were trained on the pilot system and received PDAs to be used in testing the system.

<ul style="list-style-type: none"> ▪ What is the actual or potential impact of the project? [50 words max] 	<p>There is potential to scale-up the information system to include users in the wider ECA and SSA region. With the rapid advances in ICTs, the system could be developed further to make use of more efficient technologies which deliver larger volumes of information in a cost-effective manner. This is expected to strengthen networks of researchers and other agricultural-sector partners so that they are able to communicate and work more effectively together. Improved communication is expected to improve overall performance of the sector.</p>
<ul style="list-style-type: none"> ▪ Why is your project novel? [50 words max] 	<p>It is the first initiative in the agricultural sector in the ECA region that uses mobile-phone technology to enable professionals to access information for their day to day work.</p>
<ul style="list-style-type: none"> ▪ What made your project successful? [50 words max] 	<p>Rapid developments in the technologies (ICTs) and decrease in their prices and the interest and participation of ASARECA and other partners.</p>
<p>6. Human interest [50 words max]</p>	<p>There is increasing demand for solutions to improving access to information among agricultural –sector stakeholders and this is fuelled by the growing mergers and partnerships in the sector.</p>
<p>7. Names and countries of the Partner Organisations (s)</p>	<p>Kenya, Uganda, Tanzania</p>
<p>8. Lead Scientists Names and Organisations</p>	<p>Mrs. Dorothy Mukhebi, Coordinator ASARECA-RAIN Charles Agwanda, Coordinator CORNET</p>
<p>9. Funding body</p> <ul style="list-style-type: none"> ▪ Programme 	<p>DFID, EU (through ASARECA) CABI Partnership Facility</p>
<ul style="list-style-type: none"> ▪ Dates 	<p>Jan –Dec 2007</p>
<ul style="list-style-type: none"> ▪ Follow-on project 	<p>Testing of the pilot system and up-scaling to other partners.</p>
<p>10. Further information</p>	<p>The original CDF budget to the project was Approx. £20,000. ASARECA (CORNET and RAIN) contributed Euros 37,722 (Co-funding from 8th EDF) and additional to buy seven PDAs and two modems which are being used in the pilot project.</p>
<p>14. Author</p>	<p>Jane Frances Asaba</p>
<p>15. Date</p>	<p>31st Jan 2008</p>