

OVER 54

Farmer Based Organizations on board

OVER 186

MSAs were recruited to profile farmers within the DFAs and ACEs.

OVER 254,364

farmers have been digitally profiled countrywide

OVER 2,058

farmers have subscribed to the service bundle including insurance

OVER 479

farmers have been compensated for crop loss.

OVER 8,111

agronomic messages have been sent to farmers growing Maize, Sim-sim, Beans and soya.

Over 400,000,000M UGX

has been recovered from the 3 SACCOs and 1FBO from last season's input loan.

4 REGIONAL MEETINGS

held targeting to build capacity of farmers and leaders of the FBOs on Loan recovery, Marketing strategies, and Institutionalization of MUIIS within the targeted institutions



Kule Edison, MSA, Rwenzori Cooperative Union explaining to farmers about MUIIS.

EXPERIENCES AND LEARNINGS ON THE MUIIS PROJECT IN UGANDA

MUIIS, a digital project that has been running since 2015 in Uganda, aims at extending services to farmers once they are digitally profiled. There are four major agricultural information products namely, Weather Alerts, Crop Agronomic messages, Crop Insurance against drought/dry-spell and Market information and trend analysis which are packaged into one service called the MUIIS Service Bundle. These services are only accessible to small scale farmers producing maize, beans, soya beans, sesame, through their mobile phones. Uganda is one of the luckiest countries to benefit from a project of such nature that addresses the knowledge gap that exists among small scale farmers through provision of targeted information on their mobile phones whilst working under the cooperative structure. To date, MUIIS has profiled over 254,364 farmers from 54 Farmer Organizations, Area Cooperative Enterprises (ACEs), District Farmers Associations (DFAs) who are members of the Uganda Cooperative Alliance (UCA) and the Uganda National Farmers Federation (UNFFE). The journey of implementation of the MUIIS project has not been a simple one however we have experienced amazing successes and learnings that we would like to share with you through some of our stakeholders.

ENSIBUUKO TECHNOLOGIES



Ensibuuko is a core partner on the MUIIS project whose major purpose is to provide ICT solutions. Ensibuuko was founded to provide ICT solutions including electronic banking systems to financial institutions in the developing world.

Given our experience and expertise, we offered technical solutions to the MUIIS project right from its design, built the ICT infrastructure that is currently used to support all systems around the project work. This has resulted in Ugandan farmers being digitally profiled country wide, with a major goal of extending real time and accurate information in terms of agronomic tips, index-based insurance and weather tips generated from satellite to their mobile phones in a preferred language.

In addition, Ensibuuko has been able to develop a product called MOBIS - a cloud-based microfinance management system or platform designed to help savings and loans in cooperatives to go paperless and become more efficient by digitizing how they manage customer data and transactions. We work with expert technology and business teams to build solutions that strive to equalize access to financial and technology services for the under-banked African community.

ACTIVITIES IMPLEMENTED

Developing a complete and well established ICT infrastructure that enables service delivery to all profiled farmers in Uganda. This is been done through;

- Developing data collection tools for profiling farmers using the open data kit and ONA, we built an offline enabled mobile data collection app that agents can use even in the most remote areas.
- Developing a ussd menu for farmers to subscribe for services they receive through their mobile e.g. farmers subscribing for seasonal insurance.
- Developing systems to enable generation of real time actionable messages from partners like aWhere and eLeaf for each of the farmers algorithms for agronomic analysis based on satellite data for both weather and agronomic. Generation of the data is based on the GPS locations of farmers that predicts weather and agronomic conditions thus information is generated, digested into a 120 character text message in the local language the farmer prefers.
- Developing a message engine to dispatch automated agronomic SMS to subscribed farmers: A message engine that oversees the sharing of information with farmers who are subscribed.



A team from Ensibuuko working together to ensure that the complete development of the ICT Infrastructure of MUIIS is fully established and functioning.

- Construction of a dashboards for access to the data by all stakeholders: A web application was built with analytics and data interaction functionalities and a robust authorisation engine to support multiple access of various partners.

EXPERIENCES AND LESSONS

A lot of experiences derived over the course of the project have re-enforced our belief that technology is critical for best farm practices. The agronomic module generates SMS that is backed by satellite data from aWhere and e-leaf, this has proved to be very useful to the farmers and for us it has been very insightful on how data can be leveraged to drive action at the farm level.

Initial challenges were around the literacy of the farmers who could not read the English messages that were being sent to them. Translation was done for all message systems although a certain percentage of farmers still has the difficulty of reading even in the local languages.

Crop rotation and movement amongst the farmers does present us with new information in regards to their farms. This in effect changes the location of the farm requiring updates to the system of the GPS for the new farm. The new subscription tool incorporates this into its design and agents can now submit new GPS information while subscribing the farmer in case the farmer has changed the farm.

Through the process of the development of the product, our focus was around flexibility and making sure that evolving requirements for the product were met. Most importantly, communicating with the user as frequent as possible to inform product iterations.

“ I am a 38 year old university graduate from Mbarara University of science and technology with a bachelor’s degree of development studies. I come from Kyarumba sub-county, Mughete village, Kasese district in the western part of Uganda. I am a farmer of coffee, maize, beans and matooke, and also double as a social worker.

I work as a field extension officer for Mt. Rwenzori Coffee Farmers’ Cooperative Union Limited for the last five years. When the MUIIS project started in 2016, I was given the responsibility to work as a MUIIS Service Agent (MSA).

One of my major roles is to sell the MUIIS service bundle to farmers in my region. When the project was introduced to farmers, they appreciated the gap the project was addressing and were excited to learn that one can receive agronomic information through their mobile phone in their local languages. Farmers expressed interest in subscribing for the services especially when they discovered that on top of

receiving agronomic information, weather alert tips, they had index based insurance for their crops, and the MUIIS services were affordable. During the last season, the MUIIS Input loan greatly boosted the uptake of the bundle, as this was a great incentive that farmers had always demanded.

The loan component should be given much attention and priority, for example, it helped me acquire inputs that I needed to improve my yield. Last season, my bean yield was 550 kilograms, a rise from 200kgs from the previous season. Marketing and constant awareness creation of the MUIIS project is fundamental to ensure that farmers are always sensitized on new products and services. In addition, Farmer Based Organizations (FBOs) will adopt the project and help pitch it to the various networks within the communities, hence building its sustainability.”

Kule Edison, MSA, Rwenzori Coffee Farmers’ Cooperative Union, Kasese District.



“ The coming of the MUIIS Project in Kapchorwa has made me do a lot as far as maize and bean production is concerned. The areas that I experienced the most learnings include the following;

- Pitching of the MUIIS service bundle to famers has been one of the interesting areas. The introduction of the project of such a technological nature to famers brought on board many questions and technological challenges that the farmers are facing. Most farmers are still illiterate thus understanding how the technology works and how it supports increased production through use of satellite information, needs a lot of time and sensitization for better uptake of the MUIIS service bundle. Experience has shown that once farmers understand how the technology works, supported by prompt and timely information, through the mobile phones, the sky is the limit for this project.
- Throughout the previous seasons, farmers who interacted with the technology have appreciated the initiative and continue to demand for the

service. The other key observation is that farmers need to be sensitized to increase awareness within the communities since the services being provided are season-based thus close and frequent contact with farmers remains paramount.

- The role of partnerships in project implementation is key, for example EARS provides insurance information, NARO has trained us to give appropriate agri advisory services, UNFFE and UCA support our ground work of reaching farmers and having them subscribe onto the bundle. These partnerships enrich knowledge and skills sharing which gives farmers confidence to go large scale.

SOME CHALLENGES

- Lack of consistence in the message flow regarding weather forecasts;
- Delay in loan disbursement which in turn delays the acquisition of inputs for early planting;
- The loan portfolio per acre is small.”

Mutai Fred, MSA, Sabinu Area Cooperative Enterprise.

PARTNER LEARNINGS

NATIONAL AGRICULTURAL RESEARCH ORGANIZATION (NARO)



NARO is a third party partner on the MUIIS project that plays a major role jointly with AGRA to provide support and training of MUIIS Service Agents (MSAs) and other partners in Good Agronomic Practices (GAP) highlighting the importance of early field preparation, use of improved seeds, recommended spacing, proper use of fertilizers (organic, inorganic and their combination), timely weeding, control of pests and diseases and timely harvesting.

The dissemination approach used was farmer managed demonstrations / learning centres. Soybean yield increased from 1 t ha⁻¹ by 157 and 239% with application of inorganic fertilizers and manure, respectively. Bean yield increased from 0.88 t ha⁻¹ by 188 and 269% with application of inorganic fertilizers and manure. Economic analysis show that use of manure. The Economically Optimum Fertilizer rates in soybean production is economically beneficial with Benefit to cost ratio of 1.99 and 2.5, respectively compared to 1.56 for farmers practice. For beans the use of manure and Economically Optimum Fertilizer rates is economically beneficial with Benefit to cost ratio of 2.00 and 2.34, respectively compared to 1.34 for farmers practice.

NARO provided support to the Agronomy team during the development of agronomic and weather tips to ensure that they are of the right quality and informative. Furthermore, NARO played a great role in the migration of the Fertilizer Optimization Tool (FOT) for the Lake Victoria Crescent Agro-Ecological Zone to a MUIIS K-App developed by New Wave Technologies. NARO jointly with AGRA collected and conducted a Rapid Crop Yield Assessment (RCYA) to determine whether MUIIS project has achieved the 25% yield increase and also increase in water productivity. Data

collection for the RCYA was carried out jointly by MSAs from UNFFE, UCA and facilitators.

EXPERIENCE: MUIIS has demonstrated the value of ICT in the dissemination of information, the value of accurate and reliable weather information is important. The need and value of agricultural insurance to farmers when they have lost their crops to the erratic weather patterns is an excellent development which should be promoted through awareness creation.

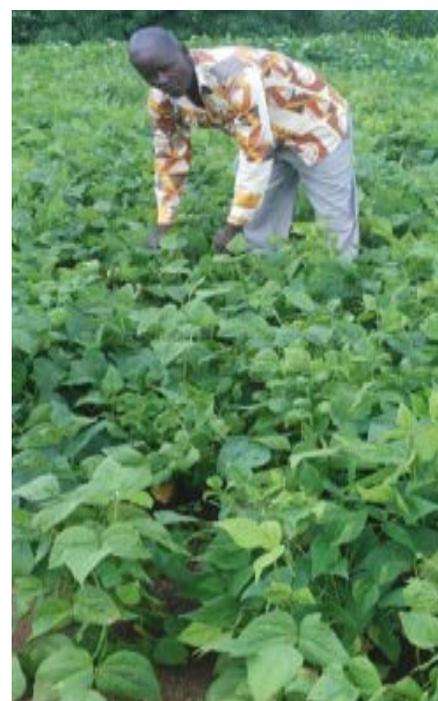
LESSONS LEARNT: Working with multi institutions is quite a good approach because the problems faced by farmers cannot be solved by one organization.

CHALLENGES: The major challenge is that some institutions dominate others especially when they handle /control resources. In addition, team members don't value or accept established methodologies because they are not from their disciplines. Also organizing joint events in many cases becomes a problem with no partner willing to release resources but also give priority to activities where they have strength or are directly accountable.

RECOMMENDATIONS: The multi institutional and disciplinary approach is the way to go if we are to improve the livelihood of farmers in Uganda. Use of ICT and reliable weather forecast is also critical. The same applies to solving challenges faced by farmers when marketing their produce.



Maize without Fertilizers in Kwapa SC, Tororo District



Bean field without fertilizers / manure in Makutu SC, Iganga District

There is a need for a combination of approaches in technology transfer and dissemination, if we are to improve production and farmers livelihood. Marketing should be given highest priority.

A FORMER SUGARCANE FARMER FINDS GOLD IN SOYBEAN WITH SUPPORT FROM MUIIS PROJECT

It's 6:00 am and armed with the knowledge of that day's expected weather, Nanzige Dorothy aged 36, a mother of 2 is up for gardening on her soybean farm, so that she comes back early to attend to her newly opened small grocery shop. She embraced the MUIIS project in March 2017, when she was profiled and subscribed. Having been a sugarcane farmer which takes 18 Months to mature and given that she has small land for production, her family was faced with a number of challenges like financial hardships and hunger and had nothing to show in regard to the sugarcane venture because all proceeds ended up in debt. She then ventured into soybean production with assurance of insurance and agronomic tips from the MUIIS project given that it was her first time to plant the crop.

The agronomic tips she received on her Phone helped provide her with knowledge on how and what to do with her farm which resulted into a bumper harvest of 1.1 ton of grain in 1.3 acres. She decided to bulk all her produce given that the farm gate price at harvest time was low. She sold off her stock in February at 1800/= per kilo fetching herself a fortune. She used part of her proceeds to open up a Grocery shop and part of the money was topped up by her husband. In addition, they acquired a plot of land in a nearby trading centre.

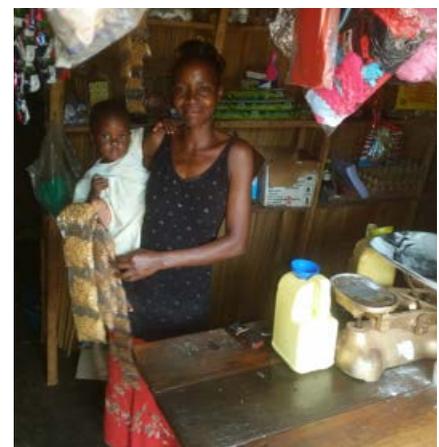
Using the knowledge acquired from MUIIS, she has expanded her soybean production acreage this season. Her plan is to start construction on their acquired plot and increase her grocery stock after this season's harvest.



Above is Nazige Dorothy inspecting her thriving soybean garden which is due for harvest this month of June 2018



Nazige with remains of season B 2017 stored grains of soy in a gunny bag and displaying soy packaged fried nuts. She left it purposely for product development.



Nazige in her newly opened retail shop as result of bumper harvest from last season, thanks to the MUIIS Project.

