GROW MORE.
SELL MORE.
*284*10#

TO SUBSCRIBE
DIAL *284*10#

One of the farmers from Budaka District Farmers Association who received his compensation.

KEY ACHIEVEMENTS FOR THE QUARTER

30 MUIIS service agents trained and equipped WITH KNOWLEDGE AND SKILLS ON HOW TO ACCESS THE PROFILING TOOL ONA.

1 billion Uganda shillings disbursed TO FARMERS THROUGH MUIIS INPUT LOAN.

54 Farmers who incurred losses due to drought DURING THE FIRST SEASON OF THE 2017 COMPENSATED.

700 farmers reached, OF THESE 394 WERE MALE AND 306 FEMALE.

Over 5000 acres of maize, beans, soya bean, sesame HAVE BEEN SUBSCRIBED FOR COVERAGE.

FULFILLING OUR COMMITMENT
MUIIS COMPENSATES ITS FARMERS WITH INSURANCE PAYOUTS

Weather insurance is regarded as a powerful tool to protect smallholder farmers from the economic impacts of natural disasters. In cases in which insured farmers suffer a loss, insurance payouts mitigate the financial consequences that otherwise could have forced them to apply disruptive coping strategies. Over 70% of Uganda's population are employed in the agricultural sector, majority of which are smallholders, whom due to low income levels are unable to pay for private extension services, and have limited access to recommended crop management practices. The The MUIIS business is addressing the information service gap by providing an e-extension service, an alternative platform using aggregated farmers geo-data with help of satellite and mobile phone technologies, providing accurate weather information, crop agronomy tips and market linkages in real time through SMSes. Farmers have the ability to receive messages in local languages.

MUIIS is currently leveraging a digital database of over 180,000 farmers generated from 54 Farmer Based Organizations across all regions in the country. Farmers are profiled and subscribed in their respective Rural Producer Organizations/Farmer Groups under DFAs, SACCOs, and ACEs. Using high technology innovations,

CTA

G4AW
GEODATA FOR AGRICULTURE AND WATER

Netherlands
Space Office

the MUIIS business has built models that predict drought severance using crop biomass, Leaf Area Index and Evapotranspiration rates to provide seasonal and crop specific thresholds with Index Drought Insurance to cushion smallholder farmers from persistent drought/ dry-spell in the current face-off climate change in Uganda. The major enterprises focused on by the MUIIS business include sesame, beans, maize and soya beans and the respective farmers who are profiled and subscribed receive early warnings related to climatic conditions based on their local setting. In order for a farmer to access such a service he/she must be profiled with proper GPS coordinates locating their farm or farms for accurate information tailored to the location of their gardens. Note that the 14,000 is not insurance cover. It is the cost of the bundle including the information service and insurance. The moment a farmer is subscribed into the system, such farmer is directly monitored by use of satellite technology with the help of the GPS coordinates of his or her farm. In case a farmer is affected by drought, Insurance will calculate the total percent loss of the crop yields which is determined by crop index based insurance. Compensation is determined by the percent total crop loss incurred by the farmer as a result of drought. This is calculated based on weather index of a particular area with the help of GPS of a farmer's garden monitored by satellite. In 2017 season one, over 100 farmers subscribed for the MUIIS business bundle and 54 farmers were compensated and the pay-out received through their mobile phones.

The drought index insurance service is provided by EARS (Netherland), a MUIIS consortium partner whose role is to provide insurance, receive hourly Meteosat data, and process the data to daily temperature, radiation, evapotranspiration, cloudiness and precipitation of farmers' fields and works closely with the National Agricultural Insurance Consortium (NAIC).

SATELLITE SUPPORTED AGRONOMIC ADVICE FOR FARMERS

A team from MUIIS testing and taking 4point coordinates for a farmer's garden in Zirobwe.

HOW IT WORKS

Vast fleets of satellites orbit the world monitoring everything below; the data is used for various purposes, from predicting the weather to monitoring the status of vegetation and crops in the fields. "The status of crops in the fields?" you might wonder, indeed, satellite observations can be converted into quantified information that tells you everything related to the status of the crops growth, water use and need and nutrient content. Because satellites are able to roam freely around the world, information is available even for places that are hard to reach on the ground.

The technology used to covert satellite observations into information is called Pixel Intelligent Mapping, or PIMapping, which is the core business of MUIIS partner eLEAF (www.eleaf.com). PIMapping analyses how much solar radiation has been emitted by the sun, how much was reflected back into space and absorbed by the soil, and, most importantly, how much has been used by the crop for photosynthesis. From that satlot of information can be derived; the biomass growth in tonnes/area that can be converted into yield; the amount of water that was used by the crop to grow; the moments when the crop did not have access to sufficient water; and what is the mineral status of the crop to name a few. These are all basic ingredients that agronomists need to be able to advice farmers to optimize production, as is applied in the MUIIS project.

AGRONOMIC TIPS

Under the MUIIS business, the whole of Uganda is mapped on a daily basis (since January 2017) resulting in a wealth of information that agronomists can source from. To be able to analyze such a vast dataset, the MUIIS consortium partners developed an algorithm that ranks the various data inputs following a pre-determined decision tree that uses data from all MUIIS partners such as the field inputs from UNFFE and NARO. Based on field, climatic and crop conditions the ranking determines if an agronomic tip needs to be sent out to one of the MUIIS subscribers.
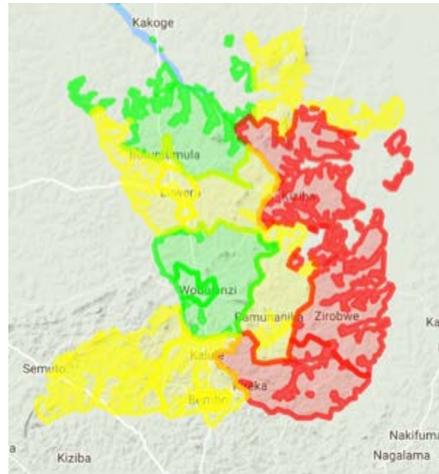
For example, when the algorithm detects a decline in growth, it evaluates if the crop suffers from a lack of access to water; if this is the case and no rain is expected, an SMS is sent out to the farmers requesting them to water their crop. The active advice is supplemented with non-satellite based information, such as pre-season advice, expertly provided by the team of local and international agronomists that support MUIIS.

SEASONAL CHANGES

Since daily data collection for the whole of Uganda started in January 2017, a few interesting statistics have been observed and are used as input for the agromic tips. A clear regional trend is visible, where the crop growth or biomass productivity in the regions of Mukono and Luwero is high on average as compared to lower productivity in the regions of Kitgum and Ngora.
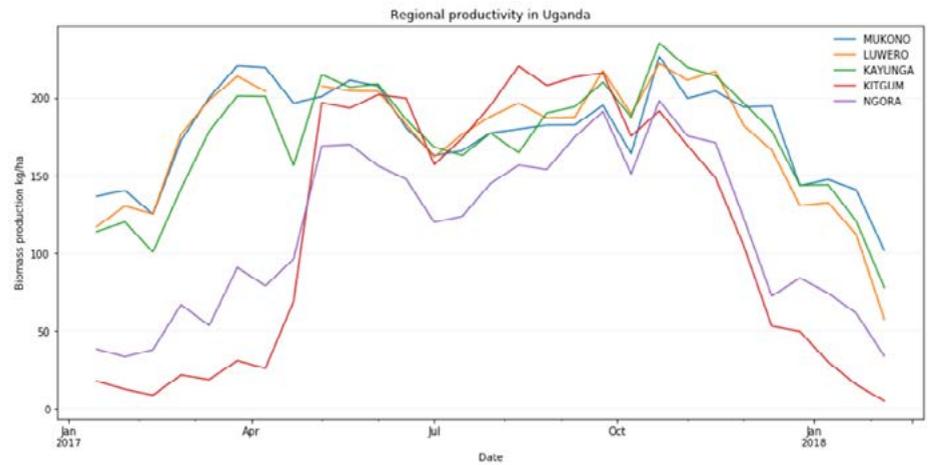
When comparing seasons, we observe that production in the first season of 2018 started late unlike the first season of 2017. In the below image of the Luwero region this is seen by the high productivity observed in the northern and central area of Luwero in 2017 while in the same week in 2018 productivity has not peaked yet, thus requiring an updated schedule of agronomic activities. This information gives the basis of the MUIIS agronomic tips, making them relevant and up-to-date!
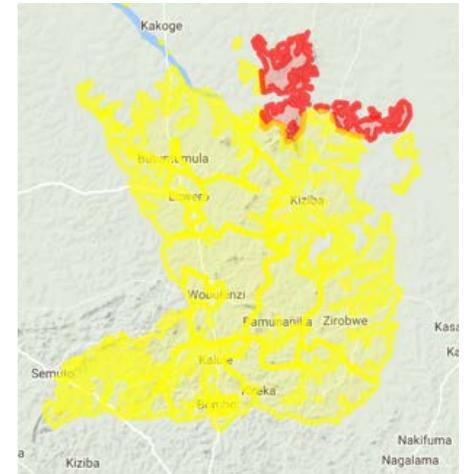
Zooming in further at field level, the information is telling us the status of the farmers' fields and allows for farmer specific tips. Knowing the field locations, the data allows field production to be compared with regional and seasonal production and determines whether this is in line with the expectation, and its potential yield. Detailed look at the field data can indicate specific issues like infield variations caused by pest and diseases or water stress that the agronomists can act upon by sending tips.

In this way, the satellite information aids the agronomists and growers with unbiased and frequent information

Regional productivity in Uganda

2017 1st week Feb.

2018 1st week Feb.

they use to send out tips that increase the productivity of the farmers, fulfilling the objectives of the Market-led User-Owned ICT4Ag Enabled Information Service (MUIIS).

eLEAF is a MUIIS business partner based in the Netherlands that provides satellite based applications and data to optimise crop production and water management. Whether you are managing a multinational agro-holding or developing complex water management policies, eLEAF`s state-of-the-art products will provide
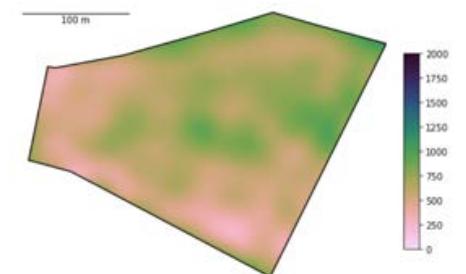
an extra dimension and support you to optimise your outputs. More information can be found at muiis.cta.int and eleaf.com.

WORKSHOP ON EXPERIENCE CAPITALIZATION

MUIIS had an opportunity to participate in an Experience Capitalization workshop organized by CTA for its ICT4AG Uganda partners. The workshop took place in Ishaka - Bushenyi (Uganda) from 18th – 23rd Feb 2018. The main objective of the workshop was to reinforce the capacity of the agencies to share programme engagements, successes, experiences and lessons. The components were majorly around sharing knowledge and Experiences on use of ICT i.e. Drones Mapping and Satellite Technologies to establish a Digital Database of farmers to provide information services

to farmers. The workshop was attended by representatives from MUIIS, NUCAFE, Igara Tea Factory, ESIPPS and ECODATA - West Africa. All the above agencies have been supported by CTA to conduct farmers' profiling including the acquisition of geo-referenced data, digital database development and management system, open source GIS (QGIS), and setting up effective data flows from the field (enumerator/agents) to farmers through the Information system infrastructure

MSAs from Rukiga SACCO at the training on profiling.

MUIIS SERVICE AGENTS REFRESHER TRAINING

In preparation for the rollout of MUIIS bundled services products for crops season one 2018, 54 Farmer Organizations selected from District Farmer Associations (DFAs), Area Cooperative Enterprises (ACEs) and SACCOs actively working with MUIIS attended a two day refresher training which was held in Kampala on 18th – 19th January 2018. This was attended by MSAs and leaders from all the 54 selected FBOs. The event was to orient the institutional leaders on the MUIIS Agricultural Input Loan and how it will operate under the existing UCA/UCCFS structures, MOBIS and profiling technology to ensure proper loan monitoring and farmers' verification processes. The training was conducted by the on ground team with support from CTA, UNFFE, UCA, Mercy corps and Ensibuko technologies.

TRAINING OF RUKIGA SACCO AGENTS ON PROFILING

In a bid to increase subscriptions and profiles of the MUIIS business, Rukiga SACCO was brought on board to mobilize 1,000 farmers to access the MUIIS service bundle products. To ensure farmers were reached and profiled a total of 30 MUIIS Service Agents (MSAs) were trained on how to access and use the ONA application tool to profile farmers using mobile phones. The training was conducted by Ensibuuko technologies, a third party partner of the MUIIS business offering ICT solutions. The training took place on the 6th February 2018 and was held at Rukiga SACCO. The training covered the following topics; over view of MUIIS, installation of ONA collect on android devices, the ONA collect menus and navigation, downloading MUIIS forms onto the phone and data types available in the forms as well as practical sessions to test the knowledge of the MSAs.

FACILITATING ACCESS TO INPUT FINANCE

One of the key goals of the MUIIS business is to become self-sustaining with the leadership of the farmer organisations UNFFE and UCA moving forward. As part of its sustainability initiatives, MUIIS is collaborating with Rabobank Foundation to offer seasonal Agricultural Input Loans to subscribed farmers as an additional service bundle product. The loan component has been integrated into MUIIS Service Bundle. Farmers are profiled, vetted and approved to receive the MUIIS input loan through their respective SACCOs or Farmer Organizations. As a result of this intervention, the MUIIS business has supported 1,822 farmers through the SACCOs of ZAABTA in Zirobwe, Baitambogwe in Mayuge, Sebei farmers SACCO in Kapchorwa, and Stride SACCO in Kasese to access the loan and over 1billion Uganda shillings has been disbursed. Farmers are expected to repay the loan by the end of the season, July-August 2018.

Farmers from Basyakulhu Bakekulhu Growers Cooperative, Kasese district, gather to receive the MUIIS input loan.