

- ▲ Title: **Strategic use of ICTs by rural women farmers for Agriculture and Rural Development in Northern Uganda: Experiences, lessons and best practices**

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Executive Summary

Lack of access to relevant, timely and authenticated agricultural information by rural communities is a major impediment to agricultural development in Uganda due to inadequate extension service delivery systems. Information and Communication Technologies (ICTs) has the potential to leverage this bottleneck especially when it's applied in a unique setting or Community. In 2005, a Project on *"Enhancing Access to Agricultural Information using Information and Communication Technologies"* with support from the Technical Center for Agriculture and Rural Cooperation (ACP-EU-CTA) was initiated in twelve parishes/villages of Maruzi and Kole Counties in Apac and [now] Kole Districts in Northern Uganda.

Traditional and Modern ICT tools such as the radios, mobile phones, community radios, audio tapes, world space satellites, internet and computers were deployed to enable rural women farmers' access agricultural information. Engagement strategies bringing women farmers, policy makers, agricultural experts and other stakeholders were conducted e.g. the Lango Forum on e-Agriculture. Partnerships and collaborations with research institutions and other NGOs involved in the areas of agriculture were instituted and information materials were repackaged in appropriate formats and distributed to women groups. These were anchored through the set up of a multi dimensional Information Center in Apac District with access to ICTs and agricultural resources. The set up of the Center supported project implementation and two way linkages with the women farmers.

This Paper also presents experiences of one woman farmer, Ms. Harriet Oloro, who dropped out of school, got married and is now the focal point of attention in her community improving her own life, earning better income, educating her children and serving as change agent within her community. The Paper details application of e-Agriculture, m-agriculture, capacity building and engagement strategies employed by WOUGNET while at the same time sharing successes and view point of one youth farmer. Overall, the paper will highlight the important role women play in agricultural development all over the world e.g. as clearly stated, the FAO's State of Agriculture 2011 "Closing the gender gap", asserts that the empowerment of women could raise farm productivity by 20-30 percent, increase national agricultural output by 2.5 to 4.0 percent and ultimately, lift 100 to 150 million people out of hunger. Yet, even though women are major producers of food crops in most of the world, they lag behind men in ownership of land, access to income from land, access to information and the ability to share and learn from this knowledge(FAO, 2011).

Introduction

Agriculture is the major source of livelihoods for rural farming communities in Uganda and is the mainstay for over 80% of the total Population. The sector can be categorized under four major subsectors, namely; Crops, Livestock, Fisheries and Forestry. The Crops sub sector is by far the largest in terms of area of coverage and contribution to GDP (Mukiibi, 2009). According to the Government of Uganda (GoU) Vision 2040, the declining agricultural production in Uganda is attributed to high cost of farm inputs, poor farming techniques, limited agricultural extension service delivery, limited markets and inadequate application of technology and innovation. However, there is need to adopt technologies which increases the overall on-farm production and productivity through increased utilization of modern technological inputs e.g. high yielding crop varieties, application of fertilizers, water management etc. Transformation from the subsistence to market led agriculture is needed to attain this goal and contribute to rural development. The Plan for the Modernization of Agriculture aims at providing access to information and technologies as key pillars of the Government planning framework for the transformation of subsistence Agriculture to market oriented commercial agriculture. (NAADS, GoU 2012)

Women of Uganda Network (WOUGNET) is a Non Governmental Organization established in May 2000 by several women's organizations in Uganda to promote and support the use of information and communication technologies as tools to share information and address issues of sustainable national development collectively. As part of its mandate to improve rural women's access to agricultural information and ICTs, WOUGNET with support of the Technical Center for Agriculture and Rural Cooperation (CTA) initiated a project *entitled "Enhancing Access to Agricultural Information through the use of Information and Communication Technologies"* (EAAI) in 2005. This Project was implemented in Apac District, and now Kole District (political fragmentation of districts, led some project counties placed under new districts), one of the least developed districts in Uganda targeting grassroots women farmers as the main beneficiaries.

In 2005, a baseline ICT study was conducted by WOUGNET in the four sub counties of Apac, Akokoro, Akalo and Bala in Apac District and it was found that only 62% of the respondents had access to agricultural information through radio, which was the dominant means, however, 19% were not satisfied with the quality of the information. Use of other ICTs as a source of information was almost non-existent for instance only 0.8% used mobile phones. In addition, in 2005, the Forum for Women in Democracy (FOWODE) conducted a study on *"Enhancing women's entitlements and effective participation in the National Agricultural Advisory Services (NAADS) program in Uganda"* which study found that only 14% of households in Uganda had access to agricultural extension service. This was not only unacceptable but undermines efforts to improve agricultural productivity since lack of information is a major constraint to increased agricultural productivity.

According to the 2005 survey, the women farmers lacked information on how to improve quality of their products, improved seeds and crop varieties, sources of farm implements/inputs, plant diseases, pests and their control, soil management and conservation. Lack of such skills hindered production levels of the farmers and hence low incomes and increasing poverty situations. The *“Enhancing Access to Agricultural Information through use of Information and Communication Technologies”* project with support of Technical Center for Agriculture and Rural Cooperation (ACP-EU-CTA) was implemented in the villages of Atik, Abedi, Apac, Kungu, Awila, Apoi, Aumi, Agege, Angic, Adyeda, Bar Akalo and Adyang of Maruzi and Kole counties and the target was rural women farmers.

Women farmers were formed into groups of 30 members equipped with ICT tools such as the mobile phones to help them access information about market opportunities, to call into the radio agricultural talk shows, interact with colleagues and facilitate exchange of information. Radio cassettes were provided to enable the women listen to weekly agricultural radio talk-show. The talk-shows not only involved experts, but experienced women farmers as panelists alongside agricultural experts. The women farmers groups would listen to such agricultural talk-show ask questions or comment and hold their group meetings on how they would practically apply the information and knowledge gained from the talk show.

This project was anchored by the set up of a multi- dimensional information Center called the Kubere Information Center (KIC) located in Apac Town to act both as an information resource point as well as to support project implementation and two way linkages with the farmers. The Kubere Information Center (KIC) was set up in a market area strategically to target women as they go to the market since one of the gender issues in development is women’s time to participate, access services and hence this was a strategic move to proactively engage women. At the center, local agricultural content was produced and disseminated via radio and SMS messages as well as on audio tapes, video tapes and CD-ROMs. The content was made available into Luo, the local language widely spoken in the community and disseminated further to the women farmers.

This approaches, was in line with the Government Plan for the Modernization of Agriculture (PMA), through its sub component of the National Agricultural Advisory Services (NAADS) focused on providing access to information, knowledge and technologies to transform rural subsistence agriculture to market oriented and commercial ones. It also underscore the strategic objectives of the Government of Uganda’s National Development Plan’s core objectives of promoting equity and increasing household incomes for rural farmers as well as promoting science, technology, innovation and ICTs to enhance the country’s agricultural competitiveness (GoU, NDP 2010-2015).

Three major strategies deployed in this project includes

- 1) **The use of e-Agriculture.** E-Agriculture evolved as a field focusing on the enhancement of agricultural and rural development through improved information and communication processes. Partnerships were developed with community radio; Radio Apac in order to ensure that information was disseminated to farmers. These were repackaged into local languages; Luo and also in English, transcribed and formatted into a series of weekly radio agricultural programs involving agricultural experts and experienced women farmers, disseminated through audio tapes for farmers to listen and also made available at the information center. Lango-Forum on e-Agriculture, a bi-annual event which brings together agricultural experts, farmers, policy makers and stakeholders to discuss the important role agriculture plays in national development highlighting benefits and challenges were also instituted
- 2) **The use m-Agriculture.** This refers to the application of mobile technologies in agriculture. The project used mobile phones in which women farmers were able to access market information, call agricultural experts, KIC staff and extension workers. Partnership was instituted with FoodNET in Uganda in 2005-2006 to support provision of market information (MTN Market Information Service) and trainings were given to women farmers in the use of mobile telephony to be able to access marketing information.

In order to facilitate these strategies, WOUGNET deployed the use of web based platforms including social networking for example the Kubere Information Center website was set up and linked up with WOUGNET website through the RSS feeds. The KIC website is a bi-lingual website (both English and Luo). A face book page and a Flickr account were also set up.

- 3) Capacity building and engagement strategies. Example partnerships with existing sources of agricultural information was instituted including with the Agency for Sustainable Development Initiatives (ASDI), Volunteer Efforts for Development Concerns (VEDCO) and Food Net. Also partnership was made with the Radio and Internet Program (RANET) of the – Uganda Metrological Department and the Apac District Agricultural Office. Furthermore, a question and Answer arrangement (QAS) to assist farmers in technical issues were also made and this was done in collaboration with the National Agricultural Research Organisation (NARO), the local Coordinator of CTA's Question and Answer Service in Uganda and with the Food and Agriculture Organisation of the United Nations – Uganda (FAO/NARO) through the Agricultural Research and Extension Network (ARENET). The ARENET Project sought to use internet to bridge the gap between researchers, extension workers and farmers

Progress in terms of Use of Phones and Computers to date

The 2010 evaluation of the WOUGNET project *'Enhancing Access to Agricultural Information using ICTs* in Northern Uganda, measured against the 2005 baseline survey revealed increased usage of ICT tools among women and ICTs further widening opportunities for women to actively participate in government processes as well as civic and political spaces. The study also showed that ICT has the potential and the stimuli to help women move and advance from a poverty stricken background to a better income and well informed citizenry hence reducing social differences between men and women which could have been exacerbated with the absence of such opportunities presented by ICTs.

Box 1

In 2005, the use of computers and telephones was at 4% and 25%, and their awareness levels were at 12% and 75% respectively. The use of community meetings stood at 28% (n=402). By 2010, ICT usage had increased among the target beneficiaries with radio usage at 94%, telephone usage at 82%, computer usage at 8% while community meetings were at 85% (n=110).

Experiences of One Ms. Harriet Oloro, a woman farmer in Apac District Northern Uganda shows that the right but simple use of gender sensitive ICT applications combined with local traditional means of communication and information based on local needs and expectations will contribute to improve gender equality and women's empowerment and hence contributing to poverty alleviation through improved agricultural production.

As Hafkin & Huyer explains, it is not the technology itself that will empower women. ICTs are tools that can open up a range of possibilities but they also have characteristics and properties that go directly to the roots of women's inequality offering access to information, help them escape from isolation and give them a voice. Women have a great deal to contribute to the design, use, and application of knowledge and information in terms of their local knowledge, innovation, creativity, and perspective. All of these aspects combined make ICTs potentially unique tools for empowerment and closing the gender gap. (Hafkin & Huyer, 2006)

Harriet Oloro is 38 years Old, a resident of Bar Owelo, Atana Parish, Apac District and a member of Oribcan Women's Group. Harriet dropped out of school due to challenges of paying school fees and got married. We talked to Harriet and here is her story.

"The Project started by WOUGNET changed my life to a self reliant and hard working person. I am now empowered socially, economically and politically. I am now able to provide my family with all the basic needs like food, school fees, medical care and clothing. I am also happy that my skills in better farming methods, computer, internet, mobile phone use and radio presentations have increased my networking opportunities and i can speak confidently as well as stand for political elective positions"

Harriet says that before joining the project as a group member, majority of people in her community thought it was the responsibility of men to provide school fees, attend community meetings and be elected leaders and yet the project has empowered her to speak, articulate and represent the views of her people in all fora without fear. She speaks highly of her achievements as a woman farmer.

"In the first rain this year, I got almost 40 bags of Maize and this is a big achievement for me as a woman. This second season, I have 2 acres of simsim and another 3 acres of maize and am expecting to earn more than 3 million Uganda Shillings after harvest. From the farm proceeds, I am planning to buy Land and construct a house for renting. I am proud because my children now go to better schools and yet before they were studying in village schools and i had left all the responsibility to my husband. My first born is studying in a very good school in Senior 3 at St. Catherine Girls School, another at Aduku SS and the last born in Awir Boarding Primary School"

ICT skills and access to Agricultural Information did not only increase agricultural productivity, better incomes but went beyond to empower women, build their confidence as well as providing the courage to vie for elective political spaces and contribute to the development of their respective communities.

“In 2010, I hosted a Daily Monitor Newspaper Journalist who came to interview me as one of the successful rural women farmer to feature among women nominated for the Rural Woman of the Year Award. I featured in that Newspaper but besides farming, I support development work for instance, I am a Trainer of Trainers for Action for Development (ACFODE), an NGO supporting women’s empowerment and ending violence against women. I am also a member of the independent budget monitors with the Apac Anti-Corruption Coalition (TAACC) which helps monitor social service delivery within communities. I am a community facilitator for PASUD a local CBO. I also served as the Chairperson Procurement Committee of the National Agricultural Advisory Services (NAADS) between 2007-2012”

Harriet has co-founded another group primarily engaged in income generation and loan scheme to enable members improve on their farming activities *“Under the group we saved over 7 million and I am the Chariperson of the group. We also attract support from local government and NGOs in the district who supply members with improved breeds of goats to boost the quality of our local breeds. We are also given improved seeds of maize varieties, sorghum and Cassava cuttings. Under NAADS Program of the Government, we have also benefited from the piggery and Citrus varieties”*

Harriet concludes that most rural women farmers today feel empowered and their husbands have embraced the changes. They are also able to apply the right skills, buy better farm inputs, earn better incomes and pay school fees for their children without over depending on their husbands. She stressed that women have built a strong desire to use information and communication technologies for agricultural development

The Youth View Point

A few months ago, I spoke to Mr. Gilbert Egwel, one of the prominent youth in Agriculture advocate in Uganda a head of the Africa Agriculture Science Week (AASW6) held in Accra, Ghana and he argued that there is need for the Government to support and streamline the Agricultural Value Chains system in the country so that it is easy for farmers and all actors involved along the chain to benefit mutually from each other. He said one of the greatest challenges facing rural farmers is lack of better market prices for their produce. He however, noted that its important especially for youth to get involved in any part of the agricultural value chain depending on their interests so that they are able to reap the best out of agriculture. *“Because of varied interests, not all youth can participate at production level in the agricultural Chain and thus they can choose to be active even in the areas of marketing, including processing and or value addition”* says Mr. Egwel, a fruit farmer in Apac District, Northern Uganda who is venturing into marketing alongside crop and fruit farming. He is one of the youth professionals with a passion in farming.

An essay contest organized by CTA ARDYS in 2010 titled *“A story of a young fruit grower in Apac, Northern Uganda”* submitted by one Maureen Agena won an award as finalist under the category *“increasing Rural Agricultural Productivity Through Technology”* and this was a story of Mr. Egwel. Last week in an interview, he maintained that after 6 years of farming strategically, he is expanding to involve marketing where he buys produce from farmers and farmer groups which he in turn sells to his suppliers. He says he has made several contacts with input suppliers especially seed suppliers who ensure after harvest the crops are sold to them. *“Last season i bought about 17 bags of beans and i still have it in store, i will have to sell this sometimes next year in March so that i am able to fetch good prices out of them. At that time, there will be already scarcity of the beans”* adds Mr. Egwel

Mr. Egwel still contend that the greatest challenge to farming as a youth is over relying on “rainfall” because in the event of drought, farmers are greatly affected and this discourages. Despite the effect of drought this year hitting many farmers in Northern Uganda, Mr. Egwel reminded me that indeed his business in Agriculture pays him better than what most youth earn on average at their places of work. His greatest harvest was in 2011, when he got over 70 bags of groundnuts and earned over 4.5 Million Uganda Shillings at the end of the year. He advised many young people to take up agriculture by taking advantages of the opportunities ICT presents in agricultural development.

Challenges experienced in the Project

- The way in which agricultural information is delivered in the local media doesn't favor rural communities for instance, the marketing information broadcast on National Television in Uganda are broadcast only in the night when women are so tired and asleep and worst of all, rural communities does not own television sets. Even the National Newspaper Daily – the New Vision, a Thursday pull out on agriculture does not benefit a rural person since they can not afford and read.
- Most of the Agricultural Resources produced by Government agencies, NGOs etc. are not in local languages. There are limited efforts to ensure that agricultural information is appropriately repackaged for the benefits of rural communities

- Poor roads network in rural areas do not allow the women to be able to freely transport their produces to areas with better prices and hence sometimes, they end up selling to retailers because the roads are so poor that an attempt to transport the produce to better market areas still consumes the would be profit for farmers. The infrastructural bottleneck is a big problem to farmers
- Lack of subject matter experts to authenticate information at project level also proved a major challenge. Other challenges includes low ICT awareness in rural areas compared to urban areas and low literacy rates

Lessons Learnt and Recommendation

- 1) Information and Communication Technologies project can create impacts in remote communities. However, no technology can be used in isolation. Multiple use of different ICT tools innovatively and strategically can cause the desired change
- 2) Government must support and invest in ICT and general infrastructures in rural areas as this is where most of the agricultural production takes place. Its not enough to institute favorable ICT Policy environment without conditions and means that allow it flourish
- 3) Partnerships and Collaborations are significant. For instance, in the WOUGNET project, it was important to collaborate with Agricultural Research institutions and agricultural based organisations both at local and national level.
- 4) ICT Projects at Community level require time. Since ICT projects does not provide tangible inputs or outputs, people take long to appreciate them. The process of transfer from information to final product is process and the community needs time to understand, and so such project scan not be hurried
- 5) Government must invest in Agricultural extension service delivery and provision so that farmers are able to adapt to the new technologies, farm inputs, varieties and best practices.

The strategies instituted by WOUGNET significantly changed the production levels and quality of farming of women farmers. It increased their knowledge and skills about the use of both traditional and modern ICT tools in Agricultural development. Consequently, there were increased productivity levels, better incomes and livelihoods. The opportunities ICT presented widened and broadened the possibilities of women to actively participate in socio economic and political processes within their respective communities. Many women were able to vie for elective leadership positions at different levels both from the lower local Government administrative units to the upper administration. The young generation (youth) is also capable of utilizing the opportunities ICT present in modern agriculture. The achievements registered under the project were all in line with the Government of Uganda's Plan for the Modernisation of Agriculture (PMA) through its sub component of NAADs aimed at technology transfer, knowledge generation and access to information. It also underscore the strategic objectives of the National Development Plan (NDP) geared towards increasing household incomes and promoting equity as well as advancing science, technology, innovation and ICTs to enhance competitiveness. All these Government Policy Framework is expected to contribute to the country's Vision 2040 which aims at transforming Uganda Society from a peasant to a modern and prosperous country within 30 years through change from a predominantly low income to a competitively upper income segment by 2017.

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