

Towards improving farmers' livelihoods through exchange of local agricultural content in rural Uganda

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Background

For years, conventional wisdom among government and the civil society has been that in order to have higher and better farm output, use of modern farming techniques is paramount. True as it may sound, the practicality of implementing modern farming techniques in grassroots farming communities is questionable. This is primarily because its adoption comes along with the need for money to obtain farm inputs like hybrid seeds, fertilizers, pesticides, herbicides and machinery. The grassroots farmers in rural Uganda who are living on barely one US\$ a day cannot afford this.

Also, culturally in Uganda, marriage is an institution which is highly respected, and in most communities it is carried out traditionally. Whereas the man is the head of the household, the woman carries the childbearing and raising responsibilities, looking after the house, doing all the domestic work and feeding the family. It is common practice to find that whereas the man owns the land, the woman tills it. The proceeds from the farm are sold off by the woman and the money given to the man who then decides how to best apportion it. It is important to mention at this point that this culture has today been diluted with many families moving away from it. This is attributed to the various interventions by government and civil society that promote joint ownership, decision making, access and control of the land with its resulting proceeds and other household property.

These were some of the major issues raised by farmers during a brainstorming session that involved Busoga Rural Open Source and Development Initiative (BROSDI). BROSDI is an NGO which focuses on the thematic areas of agriculture, reproductive health rights including HIV/AIDS, and the rights of children with special emphasis on orphan children (<http://www.brosdi.or.ug>). It works with government and various members of civil society in empowering the rural communities into examining their adverse situations and devising practical means for addressing them, together with local leaders, farmers and government representatives from the agriculture department in Mayuge District. The brainstorming session was held at the BROSDI Development Centre in 2004. From this session, the Collecting and Exchange of Local Agricultural Content (CELAC) Project was born (<http://www.celac.or.ug>). CELAC aims to improve the livelihoods and food security of rural farmers, especially women. It engages government and civil society in knowledge sharing and information management of local agricultural content using various information and communication technology (ICT) media. CELAC is implemented by BROSDI with working partners Hivos, Linux Solutions, ICTARD and FICOM.

Knowledge Sharing Forums

Sveiby describes knowledge as an intangible resource that exists within the mind of the individual (Sveiby 1997). The farmers from time immemorial have had vital farming knowledge passed on to them by their parents. This farming knowledge is based on use of local content, for instance:

Dilute 1 litre of milk with 9 litres of water. Spray the solution every 10 days to prevent mosaic virus in tomatoes, tobacco and sugarcane. Weaker solution of 1 part milk to 10-15 parts water applied every 10 days is effective in controlling mites and plant diseases in many plants e.g. blights mildew, other fungal diseases and mosaic virus. Spray every 3 weeks to control spider mites and caterpillar eggs...

This is an example of a message that was sent out through Project SMS on 15 August 2005^{vi}. This kind of information is what is shared among the farmers during the Knowledge Sharing Forums.

At the onset of the discussions during the Knowledge Sharing Forums, after introductory preliminaries, the CELAC team leader, in about 15-20 minutes explains to the farmers what 'use of participatory methods' is all about. The starting point is always their seating arrangement. It is common practice for farmers to sit in a classroom-setting manner. This seating approach does not favour interaction thereby affecting the flow of discussions. The visitors (in this case the CELAC Team) are typically made to sit at the front and face the farmers who sit in defined rows just like in a classroom. This immediately brings in a psychological divide in terms of status leading to varying individual inferiority complexes. The farmers feel shy at raising their concerns and contributions and fear making mistakes. They carry the blame for a failed discussion, and feel uncomfortable in making contributions, often leaving it to the more vocal persons. This is not a healthy environment for a Knowledge Sharing Forum. It is important that during the forums, everyone present participates fully at all levels. That way, the team gets to capture more information.

The farmers are therefore asked by the CELAC team leader to choose between sitting in an 'O-Shape' and a 'classroom manner'; and give reasons for their choice. It is interesting to note that the team is yet to find a farming community that opts for a classroom setting. In actual sense, the meetings that follow are all conducted using the O-Sitting method.

The farmers are then asked to choose amongst themselves their Convener for the day whose responsibility is to steer the members present through participatory discussions directed towards generating information for a targeted crop or livestock type. For the case of the crop types, the discussions are divided into preparation, planting, weeding, pruning, soil fertility, pest and disease control, harvesting, and post harvesting. For livestock, they normally discuss fertilization, birth and looking after the young, feeding at the different levels, housing, pest and disease control and marketing of products. During each session, the farmers concentrate on 'how they do it', 'the good and bad practices' and 'new ideas'.

The option to have a farmer take the role of the Convener is directed towards the advantages that come along with peer to peer education and learning. The Convener is given a tool box that has pens, A4 plain paper, cards, markers, masking tape and manilla paper. She is then asked to be creative with the help of the members present. The CELAC Team then takes on the documentation role with the help of a radio cassette, laptop, digital camera, pen and paper.

The Convener uses different methods. Some of the methods used include group discussions, the tree method, card sorting, demonstrations and frequency tables. It is important to note that sometimes the methods are not known to the CELAC Team and, in such cases, they are compelled to document them as well and also ask the members to give the method a name. When the methods used are familiar, the team tells the members the name if they do not know it already.

Knowledge is a vital vehicle to development. Interestingly, with each district visited, knowledge sharing for personal development is a new concept among the farmers. After the first knowledge sharing forum in Pallisa District, one farmer Namutosi Rose acclaimed that:

Gwiko is my friend, everybody's friend... We all know him and that he rears turkeys... What we didn't know is that he has such enormous amounts of knowledge in turkey rearing... Our turkeys die everyday yet we have the cure in our homes... More so, we call the 'cure' stubborn weeds and keep digging them out!

Gwiko Geroshom is one of the biggest local turkey farmers in Pallisa District. He uses purely local methods to treat his turkeys. He even conducts surgical operations himself. When the CELAC Team asked the only veterinary doctor in the village to affirm this, he said that Gwiko had never been to his clinic for drugs or any form of assistance for his turkeys. Gwiko is in his late 40s, has been a turkey farmer all his life and acquired all his knowledge from his parents and through trial and error.

Namutosi on the other hand is another farmer whose livelihood is largely dependent on turkey rearing. Unfortunately, most of her turkeys always die off within the first five months after hatching and she has spent enormous amounts of money on medicinal drugs from a nearby veterinary clinic. From the Knowledge Sharing Forum, she was able to learn how to use weeds to treat her turkeys that she incidentally has on her farmland and which she has been destroying. She also learnt how to maintain the turkey houses and rear the young birds to maturity. She learnt all this from a man she knew but it never occurred to her that he had practical answers to her challenges.

After the local content sharing sessions, besides the ICT methods used by the project to disseminate information, the CELAC Team also introduces the already existing CELAC District Agricultural Network concept to the members: its formation, how it works and its main objectives. The members are then left alone to decide whether they would like to be members of the Network or not. Again, the team is yet to encounter members that are not interested in being part of the Network. The members are then

asked to choose one representative from each village who henceforth becomes the Village Knowledge Broker (VKB). These are chosen based on the following characteristics:

- They have to be sociable and willing to share knowledge;
- They have to be active and living in the rural areas; and
- They should be farmers, preferably women.

When electing VKBs, computer literacy and the ability to read and write are not a must. More than two thirds (68%) of the population aged 10 years and above were literate in 2002. This is an increase from the 54% observed in 1991. However, wide sex disparities still exist in the literacy rates with 76% of the males being literate compared to 61% of the females (Government of Uganda ???). Computer literacy and the ability to read and write are not obligatory because the project helps the VKBs to improve the quality of their task by encouraging intergroup adult literacy classes as well as providing them with training, support, information, etc. The VKBs are expected to be the information vanguards of the village they represent. Knowledge is processed and repackaged and then disseminated back to the VKBs who in turn pass the information on to the village members.

Means of dissemination

The project uses different ICTs to disseminate the packaged knowledge, now termed 'information'. Methods used are: radio, text messages on mobile telephones (SMS), publications, the website, music, dance and drama.

Radio

The project uses radio primarily because it has been rated by far the most effective information dissemination method in rural areas (Agren paper ???). The privatization and liberalization of the communication industry in Uganda has seen the mushrooming of various FM radio stations. Unfortunately, many of these have limited aerial coverage making it very costly to air the programme on all the local radio stations. The task to have a radio station with a relatively large aerial coverage led the team to choose Radio Uganda hoping that it would reach many farmers.

Radio Uganda is the oldest radio station in the country and is said to have the widest coverage. Unfortunately, a few months after the project began, the farmers sent SMS complaining that they had failed to tune in to the radio station; and that those who succeeded had difficulty in getting a clear and hazy-free sound reception. The team conducted a mini-survey asking the members to respond by SMS indicating the most appropriate radio station with the highest listenership in their area. The responses were tallied and hence the option to use Radio Star.

Today, every first Sunday of the month, the farmers share knowledge on Radio Star from 3:00 pm – 3:30 pm. Listeners are free to call in and ask questions pertaining to the crop or livestock type being discussed. The radio programme is also recorded and cassette tapes are sent to the district so that those farmers that missed the programmes

can listen to the tapes at their convenience. The project also sends listenership reminder notices to the farmers by SMS every first Friday of the month. These SMS indicate the Radio Station, time, date and the crop or livestock type to be discussed.

SMS

SMS is used a lot more than just informing the farmers about schedules for radio broadcasts and research exercises. The CELAC Project mainly uses this methodology to send agricultural information to the farmers on a weekly basis. This is done every Monday, and the information is also uploaded on the project website for others to access. At the end of the Knowledge Sharing Forums, members are asked to write down their phone numbers or even numbers of people from whom they can receive information on a weekly basis. Upon receipt, the SMS is recorded in a book and today, the other farmers do know that every Monday, such a person receives information so they ask for it themselves.

It is important to note that you do not have to be a rural female farmer to receive the weekly SMS. The database is composed of phone numbers from persons involved in community development work, individual farmers residing in rural as well as urban areas, male farmers, organizations and even government representatives. The activity that brings them together is 'agriculture using local content'. The information that is sent out is mainly derived from the Knowledge Sharing Forums. To send out this information, for those with phone numbers in Uganda and using the MTN network, the team uses Gmail. To send SMS to those persons on other networks both in Uganda and beyond, the team uses a mobile handset.

One challenge this method poses is that most mobile phones take up to only 140 words and yet the SMS messages almost always exceed that. This however does not prohibit sending more than 140 words as the phone on the recipients' side breaks down the message into 140 words per SMS. As a result, the members receive more than one SMS, sometimes up to five SMS consecutively.

Publications

Publications are also used in an attempt to disseminate information. This is by sending out monthly newsletters and information brochures. At the onset of the project, the team was very enthusiastic about using newsletters to disseminate information to the farmers. These were printed in English and Luganda, the most widely spoken local language in the country. Unfortunately, they proved quite expensive and also were not the preferred format by the community. The information portrayed in the newsletters was similar to that in the information brochures, the only difference being that it is broken up into many brochures. The project therefore opted to produce more information brochures and disseminate those to the farmers. These are in the form of 'How to Guides' and can be downloaded in PDF format from the project website.

Music, dance and drama

Music, dance and drama are one of the traditional ICT methodologies that are still used. In the olden days, the drum for instance was used to send messages out to the people by the kings. Songs were used, especially by parents, to educate their children, especially the girls about how to look after children, husbands and homes. Today,

these are still being used to convey messages to both the adult and younger population.

The CELAC Project also uses music, dance and drama to portray the information from the Knowledge Sharing Forums. Orphan children who are members of the Hope Children Club in Mayuge bring to life the knowledge shared. This is recorded and available on DVD and videotapes, and is used by farmers who can access computers and video decks. This approach is also a rational answer to the farmers who cannot come for the forums due to household chores and also those who are in areas not yet covered by the project. In the coming phase, the project is looking into having them available on the Internet for others to burn onto their DVDs. It is also planned that the DVDs be shown at the village squares during the evenings using projectors and then discussions are held afterwards.

The project targets having all information portrayed on the project website. This is yet another form of dissemination. It enables people in different regions within Uganda and beyond, provided they have access to the Internet, to access agro-related information and use it at their own convenience. The website is monitored on a monthly basis so as to customize it to best fit the priorities of the website visitors.

In an attempt to disseminate information to the different stakeholders including farmers, other categories of civil society members and government, the project has adopted use of a variety of ICT methods to cater for their different preferences. An example is a farmer who receives the weekly SMS and may need more clarification and therefore gets it from the radio programmes; or a farmer whose preference is information brochures whereas another may not prefer them because of her inability to read both English and the local language, Luganda.

Knowledge Sharing Forums improve livelihoods

Emmanuel Maganda, a maize and chicken farmer from Mayuge District noted:

If you sell as an individual, they will cheat you... But if you sell as a group, many farmers together, you have a better bargaining power.

Cissy Serunjoji the CELAC Luwero District Chairperson said:

Use the knowledge acquired to fully exploit your farm and then you will have higher yields and when sold off, more returns.

These are examples of advice that the farmers give to each other. The bottom line is that knowledge can be shared but it is up to the farmers to adopt this knowledge to increase their returns and income. Some success stories are shared below:

1. Okware

From the Knowledge Sharing Forum in Luwero District, Mrs. Okware Gertrude, an orange sweet potato farmer learnt the need to diversify her crop and livestock. Today, she has added floriculture to her agricultural activities. She says that she has started small by supplying the local market and intends to diversify to production for the export market. The money she gets from the floriculture is used to boost her chicken farm.

2. Waiswa

Waiswa heard about a meeting for women only and out of curiosity attended the meeting. There he learnt how to take care of his banana plantation better. He learnt the essence of mulching which he practices today. He says his plantation looks neater and he has noticed that the banana fruits are bigger; and looks forward to selling them. He also learnt the need to diversify to other crops for increased income. Today, Waiswa has a rice farm and looks forward to the Knowledge Sharing Forum on rice scheduled for the second phase of the project. His wish is that the CELAC Luwero District team quickly shares knowledge on rice planting, so that he too can get to know more about it. Upland rice is widely grown in Luwero District.

3. Gwiko

Gwiko has all his life been involved in turkey rearing. When the CELAC Team organized the first Knowledge Sharing Forum in Pallisa District, it was all about turkey rearing. The team sent information brochures on 'how to grow the orange sweet potato' at a later date. With this information, he has today started planting sweet potatoes for both his family and as a cash crop. During the forum, he learnt the need to invest money from the sale of farm outputs from colleagues. He is planning to buy vines for the orange sweet potato from the CELAC Luwero District team from the sale of his first harvest and plant it in the next season.

Gwiko also used to share his bedroom with his turkeys. It was constructed in such a way that the family slept on one end, and the turkeys on the other. During the forum, he learnt the need to have a separate housing facility for the turkeys and also how to care for them so as to avoid pests. He thereafter constructed another house for his turkeys and actually acknowledges that he is saved from the smell of the turkey dung.

4. Namutosi

Namutosi from Pallisa district has today constructed a house for her turkeys that she keeps clean and disinfects weekly as compared to them sleeping outside where they were previously being stolen and/or bitten by snakes.

5. Local methods or drugs

The chairperson of the CELAC Pallisa District team also happens to be the sub county veterinary officer. He has a clinic in Budaka town and today, from the knowledge acquired from the forums, advises farmers according to their preference: local methods or veterinary drugs.

6. Kiwendo and Cissy

Kiwendo and Cissy from CELAC Luwero District are trained orange sweet potato farmers who have increased the acreage on their orange sweet potato garden due to improved markets for their produce. They now know how to process the crop and to sell it as flour for porridge. Their worry before was that if they had bumper harvests, they would lose a lot to rot.

7. Zungu

Zungu's turkeys were always sickly but he now keeps in close touch with Gwiko who advises him on how to look after his turkeys. He has also realized that many of the weeds Gwiko uses are growing as weeds in his large farm. He now takes care of these weeds and has opted to plant them as boundaries on his farm.

Challenges faced by CELAC

Information hoarding is the major challenge. People still are concerned with the notion that if you share your knowledge, then you stand a higher chance of being out competed in the process. There are various ways that the project team goes about this, for example, during the opening remarks a mini-sensitization is done with emphasis on the need to share if you too want to learn. Also, during mobilization, the focal person is asked to identify those farmers that have mass information and they are visited by the team and requested to attend. They are strategically picked upon to share their knowledge and the team has not had a case where unwillingness to share information lasted to the end of the forum. Normally, participants let go and start to share when they realize that they too are learning freely.

Another challenge is information overflow. The community has so much developmental information, which is scattered, and many of the times confined to individuals and homes. Many do not intend to hoard it but just lack the appropriate forum to share it. To address this, the CELAC Knowledge Brokers are requested to periodically hold mini-Knowledge Sharing Forums. They are also requested to send information periodically to the CELAC Team which is in turn disseminated using the weekly SMS or the website.

People have differing susceptibility to change. Whereas some accept it faster, others do not. The community is not used to sharing information and, even if they do realize the essence after one discussion, it is paramount that the process is introduced gradually to them. That is the reason why they are involved in mobilizing and conducting the forum. In the next phase, they will be involved in the documentation process. Use of peer-to-peer learning has also eased the process.

The farmers, other members of civil society and government need to create a commitment to compete and cooperate, to change, to challenge, and a commitment to allow time for this to happen.

Lessons and conclusions

Knowledge sharing and information management using ICT methods for improved livelihoods have been the core of the project. In the process, the project has some lessons to share.

The rural communities have mixed views on women only projects. Women gatherings often raise high curiosity especially among their male counterparts. As a result, it is not practical to have a women only project, because the men have to be involved in some way. Their involvement is beneficial to the project provided they are not the dominant players. When other males see their involvement, project reception in that community is eased.

It is also important to understand that each community addresses gender concerns differently. Therefore it is important to understand the specific community culture. This also helps in understanding and making plans in advance on how to address the foreseen challenges and take advantage of the strengths.

Even if it is true that the rural communities have a lot of information, to get it requires a lot more than just mobilizing people and get them sharing. It requires planning at the base level; and conducting a mini-research to find out issues pertaining to culture, gender, other players, receptivity of persons and others. Then adjusting the plan according to the results, and visiting the community.

The rural community adopts faster provided they are taught how to do so in a participatory manner. Classroom teachings should be avoided and peer-to-peer learning and teaching should be encouraged.

The project team, the district networks, government and other members of civil society have to work together in order for project ownership to prevail. To do this, the team has fully empowered the district to conduct activities, as well as be involved in income generating activities and attain district registration as a Community Based Organization.

Information is a vital tool to enable and increase farmers' livelihoods, provided the farmer knows how to positively exploit the information acquired. This information needs to be shared so that others not only have and use it, but can also customize it to have better output; and it can be shared again thereafter. The following approach has worked for BROSDI: identify key needs or issues; determine appropriate knowledge sharing and information management initiatives; and then communicate these initiatives in a language that matches the problem being solved and the target group.

Abstract

For years, conventional wisdom among government and civil society has been that in order to have higher and better farm output, use of modern farming techniques is paramount. This is true provided the farm inputs like hybrid seeds, fertilizers, pesticides, herbicides and machinery are readily available. This is not the case for rural farmers in Uganda, who are mainly women. The Collecting and Exchange of

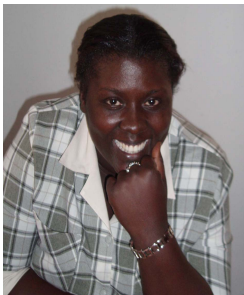
Local Agricultural Content (CELAC) Project works in close partnership with government and civil society to promote knowledge sharing and information management of local agricultural content using various ICTs. The information collected is disseminated back to the farmers and members of civil society locally and internationally using the project website; weekly SMS; the annual Knowledge Fair; radio; information brochures and newsletters; and DVDs. The project has a number of challenges, including information hoarding. To overcome this, the project staff explains the challenges during the opening remarks and also through mobilization at the initial district Knowledge Sharing Forum. Information overflow is yet another challenge. To address this, the CELAC Knowledge Brokers periodically hold mini Knowledge Sharing Forums. Information derived then is sent to the CELAC Team which then disseminates it through the weekly SMS or the website. People have differing susceptibility to change, which is another challenge. To address this, the project involves the community in planning and implementation, and also engages them in peer-to-peer learning.

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About the author



Ednah Karamagi Akiiki was born in Uganda way back on 22 August 1970. She is a university graduate with an honours degree in Bachelor of Science and currently pursuing her Masters degree in Business Administration. She has 9 years of involvement in community development work, and is currently writing a book on knowledge sharing and information management using empowering participatory methods. Her field of expertise in community work is sustainable agriculture and farmers' micro finance; gender; HIV/AIDS; involvement of the vulnerable persons; and conflict avoidance, resolution and management. In addition, she is involved in use of ICT, open source and development mediums for improving community and individual rural livelihoods. Ednah is currently the General Manager for BROSDI, an NGO that emphasizes the use of ICT, open source and development mediums for improved household incomes in the thematic areas of agriculture, HIV/AIDS and orphan children.

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