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the digital springboa...
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Update

rrent awareness bulletin for ACP agriculture

CTA

e-agriculture

The ICT4Ag conference produced key action points for future collaboration

Conference delegates identified ICT4Ag solutions to create a 'living' database

The final plenary session was an interactive platform focused on opportunities
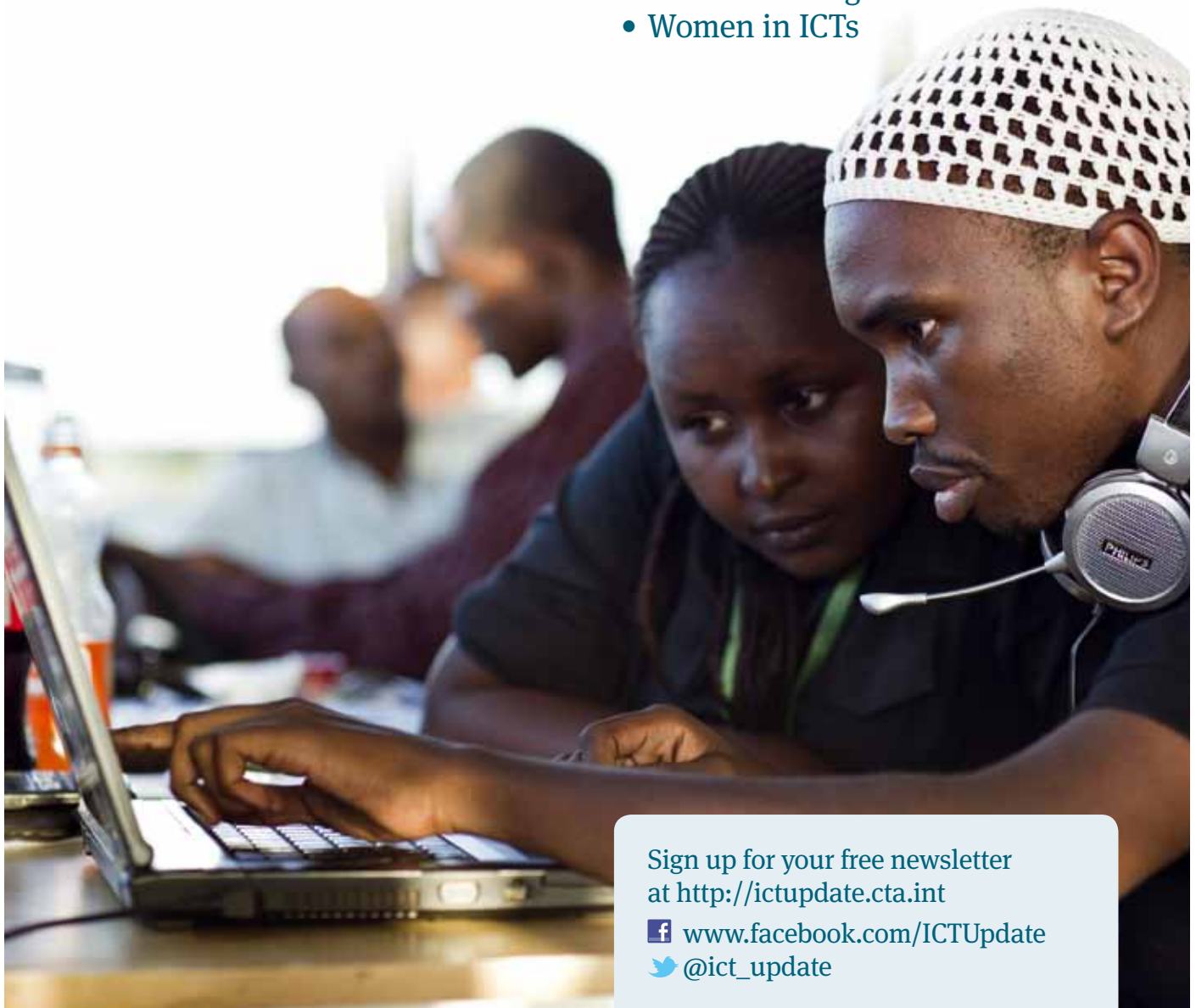
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Making it happen

ICT Update

a current awareness bulletin for ACP agriculture

CTA

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Contents

A new direction

This issue of *ICT Update* is special in many ways. To begin with, it is the 75th issue. What began in 1998 as a newsletter and became a slim 8-page publication in 2000, eventually evolved into a full 16-page magazine in 2010 with its own website, newsletter and a social media presence (see box for full timeline). *ICT Update* sometimes publishes expanded versions of the magazine to cover special events as well, such as this and the previous issue, which report on the ICT4Ag conference held in Kigali, Rwanda on 4–8 November 2013. Finally, this issue is also special because it marks a new direction for *ICT Update*, inspired by the ICT4Ag conference.

The title of this 'post-conference' issue is 'Making it happen'. All week long – in presentations, in hackathons, during Plug & Play Day, on blogs and in the corridors and booths of the conference venue – approximately 475 delegates presented, debated, brainstormed, innovated and networked. And at the end of the week, they produced a detailed plan of action.

The positive reactions by participants and organisers already point to a successful conference – if only because it provided a stage for a truly diverse group of people to marry 'a very cool field, ICTs,' as Agnes Kalibata, Rwandan minister of agriculture and animal resources referred to it, 'to a not-so-cool field, agriculture'. The true measure of success, however, will only become evident in the months following the conference, as delegates begin to actually 'make happen' the points on the action plan (see the guest editor article by Giacomo Rambaldi and Benjamin Kwasi Addom from CTA on pages 4–5).

This issue also follows up with the three leaders of the conference streams – Benjamin Kwasi Addom, Saskia Harmsen and Dady Demby – to see whether their sessions on emerging innovations, capacity strengthening and enabling environments, respectively, lived up to their expectations (see the three Q&A articles on pages 6–7, 14–15 and 19–20). CTA also sent a Knowledge Management team to Rwanda, consisting of Pete Cranston, Chris Addison and Krishan Bheenick, to report on the sessions. Three short articles based on their summaries appear on pages 9, 17 and 22.

Nawsheen Hosenally from CTA is introducing a new regular feature called 'Young voices'. She kicks off with an article that describes the experiences of a young team of social reporters at the ICT4Ag conference. This initiative is part of CTA's ongoing effort to engage youth in activities related to ICTs and agriculture. In addition to introducing a new feature, this issue of *ICT Update* is also moving in a new direction. Inspired by ICT4Ag, the magazine's new name from now on symbolises the bringing together of the digital and agricultural worlds at the conference in Kigali and hopes to build on its success. ◄

ICT Update, constantly evolving

1998	AfAgrICT-L email newsletter set up after ICT Observatory meeting. Aims to raise awareness of ICTs in Africa
2000	*ICT Update* launched to broaden coverage to ACP countries
2002	Website launches bimonthly magazine and e-newsletter
2006	*ICT Update* expands from 8 pages to 12 pages per issue
2010	*ICT Update* joins Facebook and Twitter
	ICT Update expands from 12 pages to 16 pages per issue
2011	Daily *ICT Update* buzz
2012	*ICT Update* introduces regular guest editors
2013	Magazine begins to change following ICT4Ag conference in Rwanda
2014	New ICT4Ag site with magazine and blog combined

Mark Speer (mark@contactivity.com) is editor of *ICT Update*.

Making it happen

The 2013 ICT4Ag conference in Rwanda was unique in that it brought together the ICT and agricultural sectors. Its success will be measured by the action taken by delegates after the conference based on a clear list of action points for the community.

Making it happen

The CTA-sponsored ICT4Ag conference held in November 2013 in Rwanda had several objectives, but the conference heading – the digital springboard for inclusive agriculture – succinctly summarises the main one. At this conference, a range of ICT innovations would present new opportunities to all groups in the agricultural sector in ACP countries and beyond. In that respect, the conference was a great success as approximately 475 delegates with 61 nationalities attended who, as director of CTA, Michael Hailu remarked, 'often don't come together in the same forum'.

Inclusion

Inclusion is an apt word to describe the success of the ICT4Ag conference. One of the initial drivers for CTA in designing this conference was that initiatives involving ICTs and agriculture were few and mostly fragmented and scattered. So the strategy from the outset was to employ a multi-stakeholder approach.

One aim was to have a farmer and farmer organisation representation of 10% at the conference (which was nearly achieved) and a higher representation of women than is normally the case at ICT or agriculture conferences (25% of participants were women). The youth, 'an incredibly valuable asset,' in the words of Jean Philbert Nsengimana, Rwandan minister of youth and ICT, would be abundantly present (43% of participants were between 18–35 years old) and leave its energetic mark on the conference. And it did not end there: many other groups were present as well (see box).

Something else that defined the conference – and became a kind of conference slogan as the week progressed – is the phrase 'Making it happen', which is also the title of this issue of *ICT Update*. 'Making it happen' was a key motivator for the conference organisers, who were determined to stage a different conference – one designed to eschew conference fatigue by being more interactive.

Not only did the organisers want to avoid burdening delegates with long speeches or PowerPoint presentations, but they also wanted to motivate delegates to go home energised after a week. So the aim was always to engage as many people as possible to actively participate in sessions, and have them return eager to act on what they learned. In the end, that would be the true measure of this conference's success.

So the question remains, what did the conference delegates take home with them, and will they act on it?

Designed for action

The conference was designed so that this very question would be a priority in everyone's minds. The three days of sessions in the different streams – on emerging innovations, capacity strengthening and enabling environments – were designed to lead to actions: after the speakers gave short presentations, the sessions immediately switched into interactive mode and the final session became a marketplace to take ideas forward.

To get the most out of this interactive mode, CTA used eight facilitators to lead the sessions and a team of knowledge management specialists to capture emerging content. They were assisted by a team of local young student facilitators trained the day before the conference start. The enthusiastic facilitators steered the sessions towards interaction by dividing delegates into groups and giving them tasks. They also ensured that each group worked towards solutions so participants could take away something concrete. This interactive structuring of the sessions was re-enacted on the final day to identify post-conference actions for the entire group of delegates.

The delegates were seated in a large circle of chairs in the main conference room. Behind them were cluster sheets listing the main findings from each of the week's sessions (see 'findings' box). One of the facilitators invited people to leave their chairs, which the delegates slowly but surely did. They were then asked to walk around the room and select what they considered the most important theme on a cluster sheet.

This exercise naturally divided the delegates into groups again, as had been happening all week. For half an hour each group discussed the theme on their cluster sheet. Each group appointed a spokesperson to describe what it was that made their particular theme so important, and what would need to be done next.

What next?

The main findings from the streams have been merged into action points as a vision for future collaboration (see the ICT4Ag website for full details). They illustrate the complexity of ICT4Ag issues and give a flavour of the discussions and debates that took place in the sessions.

Some of these key statements from the enabling environment stream include: involve all stakeholders, focus on farmers and farmer organisations, develop sustainable extension services, ensure access to ICTs in rural areas, standardise platforms for sharing data, provide understandable data and empower farmers through financial education.

Key statements from the capacity strengthening stream include: involve developers early on, involve women in decision making and capacity building, focus on the household as a central unit, promote local participation, and facilitate information and knowledge sharing.

And from the emerging innovations stream: use trusted organisations to share data, create a public platform to reduce data duplication, develop apps to support value-chain operators, build security into innovations to create trust, emphasise data visualisation, and create diversified business models in local languages.

The conference organisers, and indeed the delegates too, are well aware that there is not one cure-all answer to such a wide range of issues. But by discussing, collaborating and pooling their knowledge, and by forging new alliances and networks, the delegates have learned a great deal from people outside their particular fields and are therefore in a better position to take more effective action in the future.

The true extent of this conference's success can only be measured once it is clear how much positive change delegates will have managed to bring about as a result of the conference take-aways. Although it may be too early for a definitive verdict, there were already encouraging signs of delegates taking action during the conference – for example, innovators and investors sitting together and discussing future plans. Indeed, in general people felt that it was the right conference, on the right topic, at the right moment, in a country that is at the forefront of ICT innovation in Africa. These statements suggest that many of the conference delegates are already coming up with answers to the question 'what next?' ◄

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Giacomo Rambaldi (rambaldi@cta.int) is senior programme coordinator at CTA. He organised the ICT4Ag conference.

Main findings

- Build on existing communities
- Include and integrate gender
- Develop business models
- Centre processes and solutions around farmers and their needs
- Secure political and policy support for ICT4Ag
- Provide access to energy, devices and infrastructure
- Develop farmers' trust in developers, technology and content
- Adapt content and associated service providers
- Promote collaboration, partnership and community of practice
- Ensure high quality of data and visualisation
- Use ICTs to attract youth to agriculture
- Scale more than ICTs – also scale processes
- Diversify tools and channels to meet beneficiary needs
- Put farmers at centre

Participant breakdown in order of size

- private enterprise 19%
- ministries/public organisations/extension services 17%
- regional/international organisations/donors 16%
- civil society organisations (e.g. NGOs, churches) 12%
- research institutes 9%
- media (magazines, newspapers, radios, TV) 8%
- academia (schools, training centres, universities, agricultural colleges) 8%
- farmer organisations/cooperatives 6%
- other 4%
- embassies/diplomatic organisations 1%
- public libraries (national/town libraries) and information centres 0 %

CTA / YOHANNES ORISTE ZIROTTI

A living database for ICT4Ag

In your article in the last issue of *ICT Update* you mentioned that we need to coordinate efforts to monitor the impact of applications since there are so many of them. Have there been any positive signs during your stream sessions that this may be accomplished?

Making it happen

➜ Yes, this was already obvious early on during the Plug & Play Day and all the way through to the end of the conference, when presenters, speakers and participants

identified one of the main bottlenecks in the use of ICTs in agriculture. Applications, solutions and innovations are being duplicated and there is very little collaboration among developers. As stream coordinators, we are working hard to collate all the key messages from the sessions, analyse them and recommend a step forward. But it looks like one specific action that is likely to be taken as a first step will be to work with the stakeholders to identify and document ICT4Ag solutions so we can create a 'living' database. It will serve as an open platform that everyone can update as new innovations emerge. This effort will probably revive and upgrade some of the work done by USAID's Global Broadband and Innovations programme

that I was involved in between 2011 and 2012, which unfortunately, was not sustained.

Including stakeholders in the value chain is another key concern. Have the sessions come up with anything that would accelerate this process?

➜ You bet! CTA's approach to using ICTs in the agricultural value chain targets stakeholders and promotes ICT solutions that specifically address the needs of these stakeholders. The conference organisers did not wait until the conference was over to accelerate this process. In fact, the issue of inclusion was already considered while designing the conference sessions. So we did everything possible to include all the

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stakeholders in the various components of the conference. Farmers and farmer organisations were invited to the conference and given support to attend. And they were encouraged to share their stories in some of the sessions.

The conference also provided youth with a platform. Many of the participants were young women and men who contributed through social reporting and hackathons. Gender was also part of the conference design. The closing keynote speaker was a young woman from Cameroon: Rebecca Enonchong, founder and chief executive officer of AppsTech, a leading global provider of enterprise application solutions. In addition, researchers presented their work on ICTs and agriculture, policy makers participated in sessions solely designed for them and investors were given the

The issue of inclusion was already considered while designing the conference sessions

opportunity to listen and constructively criticise thriving solutions.

These steps were taken to highlight all the different facets of the conference theme, 'ICT4Ag: the digital springboard for inclusive agriculture'. The opportunities that this single conference platform provided to all the stakeholders are expected to further encourage and spur on those who feel or have been 'ignored' or 'left out' to make their voices heard.

One of the session leaders asked us to write onto a card what really 'wowed' us at the conference. Did anything wow you?
➜ Again, the output from the streams will actually answer this question better than I can. But I can verify that a number of the ICT solutions were able to make their mark at the conference. First there was mFisheries, a suite of applications developed at the University of the West Indies. Using a smart phone, fisherfolks can access weather reports, navigational tools, training tips on first aid, and information on emergency boat repairs. They can also find out while at sea what the fish prices are in different markets. Second, there was a well-received agricultural input e-verification system. The system allows farmers to use SMS to verify the authenticity of agro-inputs before using them. Users submit SMS queries to a local

short code, which delivers a reassuring authentication message within a few seconds. Third, there was a simple but powerful market information system from Madagascar with great potential that can be accessed via smartphone, tablet or computer. Rural eMarket is multilingual, context specific, easy to use, quick to adopt, and most of all, affordable for most rural projects.

In your article you mentioned that you were hoping to get app developers to fill some of the existing gaps – for example why do apps focus on market info, but less on post-harvest management? Was there any progress at the conference in that respect?
➜ The goal was to highlight the gaps in ICT4Ag solutions – areas of concentration versus areas of scarcity. This came up a number of times during the session discussions. For example, during the Plug & Play Day, which showcased over 36 solutions, it was clear that most of the applications focused on information related to market access. Areas such as farm management and postharvest management, to name two, were absent. It was interesting, however, that there were foundations and development partners at the conference who were looking for ICT solutions for some of these 'forgotten' components of the value chain. CTA has started a discussion with some of these partners to explore practical actions to address the issue.

In addition, the model being used by CTA for the hackathons is also expected to address this missing gap. The approach of a hackathon is to deliver real-time solutions to problems, but unfortunately many of the ideas cultivated at hackathons peter out afterwards or have difficulty finding investors. CTA designed this hackathon in such a way that stakeholders and developers can work together in an environment more conducive to the development of these ideas.

The title of this issue of *ICT Update* is 'Making it happen'. Are you confident that participants of this conference will take home what they've learned here and actually make things happen?
➜ Opportunities were created right from day one for peer-to-peer collaboration, developer–investor partnerships, and partnerships between technology and agricultural stakeholders. The final plenary session was a concluding platform focused on opportunities. It broke up the participants into a number of groups who brainstormed about what to do after the

conference. There was also a great deal of one-on-one networking all week, and that's definitely a sign that action is likely to be taken after the conference.

In my opinion, nothing will happen if the conference participants wait for the organisers to make it happen. They have to take initiative as well. Having said that, as the lead organiser CTA has invested a great deal in this conference and has plans of continuing the dialogue to make things happen. And there are a number of follow-up activities in the pipeline for next year, which are designed to assess whether things have been 'made to happen'.

Is there something you would like to add?
➜ Developing business models for ICT4Ag solutions was high on the agenda at the conference. It was observed that the sustainability challenge of solutions in the ICT4Ag sector is the result of poorly conceived business models. Most of the solutions are still donor-funded after all these years, and it is therefore difficult to scale up these solutions from their current pilot status. I believe this is something that needs to be urgently addressed on a separate platform.

There were a number of interesting discussions in the individual stream sessions, such as the issue of mobile finance for agricultural development, improving access to and the use of agricultural data through mobile technologies and other ICTs, and whether it is better to focus on individual applications or explore integrated systems that address most of the challenges along the value chain. Another issue that was discussed in detail was how to use social media tools for online media monitoring. These are crucial issues that will be fully analysed when the final outputs of the stream are ready. ◀

On facing page, Michael Hailu, director of CTA, and Agnes Kalibata, Rwandan minister of agriculture and animal resources, participate in a conference discussion.

CTA / YOHANNES ORISTE ZIROTTI

Selected submissions

Making it happen

Community multimedia centre

The Nakaseke Community Multimedia Centre in Uganda serves a total of 45,000 people, mainly subsistence farmers. It provides them with numerous services, including computer training, a mobile SMS service and a wireless internet network. The free Frontline SMS application helps farmers access market price information, giving them more bargaining power and making them less vulnerable to exploitation by middlemen. Frontline SMS helps users to manage announcements and reply automatically to incoming messages from farmers and buyers, thus shortening the distance between farmers and buyers.
➜ http://goo.gl/A34SIH

FLICKR / IICD

FLICKR / BIGDMIA

Video documentary in Malawi

If fishing communities in lakeshore districts in Malawi, such as Mangochi, do not adopt integrated fish-processing techniques, deforestation and surface run-off will increase. The use of free-falling coconut fruits to smoke fish together with natural wood reduces firewood expenses for fish processors, however, and this reduces deforestation. The quality of fish products smoked with coconut fruit and natural firewood is high quality and can fetch more on the market and reduce post-harvest losses. These innovations all came about through the use of a video documentary that attracted attention to this smoking process and highlighted how it would benefit the communities.

Mobile technology – the role of the private sector

New information is critical for resource-poor farmers living in rural areas of ACP countries. Yet most of these farmers are not only resource poor but also information poor. Mobile technology holds great promise in enabling information services to resource-poor farmers. There are many examples of mobile-based interventions in rural projects, but few have moved from the pilot phase to fully functional initiatives. Officials from government, the private sector and experts in mobile information systems need to further explore how effective partnerships between the public and private sectors can deliver mobile agricultural information services.
➜ http://goo.gl/1IE3Pf

FLICKR / GSZ

FLICKR / CGIAR

Videos to generate debate

ICTs are perfect tools to help communicate information – on climate change, for example – to large numbers of people quickly. IITA developed a video in a project in Uganda to generate debate around climate change threats as perceived by the farmers. Videos can be a fantastic window where the main characters are the farmers talking about agriculture and their own experience collaborating with scientific projects and the outcome they obtained from it. It also brings different players together, such as policy makers and development workers to see how farmers' choices to deal with the challenges requires a system-based approach rather than dealing with one given issue.
➜www.iita.org

Capitalising on demand

The session on 'ICTs/mobile apps for access to financial services and insurance' identified a number of lessons that will help improve the development of mobile financial services in ACP countries in the future.

Making it happen

The mobile financial services sector has a high profile, partly because of the huge market it can penetrate: more than one billion people have a phone but no access to banking. In Rwanda, the host country of this conference, the mobile finance context is atypical of many other national situations in that the programme being developed by the ministry of agriculture with Visa will operate across all mobile networks and all the major banks.

This session on ICTs, mobile apps and financial services presented cases from Zambia, a cogent, compelling report of success and failure in an e-voucher scheme; Grameen's m-finance pilot in Uganda with the Community Knowledge Worker network (CKW); and reports from an m-banking survey in Ghana.

The Ghana survey showed that there is continuing demand. Yet research by GSMA and the World Bank estimates that only one in ten of the one hundred-plus pilot mobile financial service schemes are gaining traction. The reasons for this include:
- difficulty getting the technology right;
- the reach of banks, who may have 100,000 customers, or even a telecom network with a million subscribers, is not large enough to be profitable; and
- potential consumers are not switching from informal systems, since they don't have a clear understanding of the potential benefits, distrust banks and many are not finanically literate. The Ghana research demonstrated the link between higher levels of education and increased preparedness to subscribe to m-money.

Lessons learnt

The cases discussed during this session led to the identification of a number of lessons. For example, the fact that there is high demand for these technologies but little traction means that approaches to mobile finance in agriculture must be informed by market research on farmer cash usage behaviour patterns. Moreover, impact should be measured by the development outcome. In the Zambia e-voucher case, technology needed to not only work well and to scale, but to ultimately improve health and livelihoods. This ultimate goal informed the intervention design, monitoring framework and definition of success.

Another point is that simply designing a good software solution or technology product is not sufficient for widespread use. The design of solutions should be driven by both end-user experiences and needs as well as the business and technical models. 'Appropriate design' involves a significant investment in research, communication, trial and error, and creative experimentation, all in a highly participatory mode that treats farmers as co-creators.

It is also important to realise that cost benefits are long term. Initial investments in technology often require a subsidy to prove the business model to private sector partners. In Zambia, the local cotton company only saw the value of the technology in terms of cost-saving and efficiency after the initial pilot, and even backed out afterwards since it was not willing to invest in the required scale and pace of change (moving to a credit rather than a cash system). Other donor funds have revived the project.

Particularly in rural areas, adopting new technologies depends heavily on the creation of local institutions or relationships of trust. The Grameen model rests on early evidence that the CKW local agent model is effective in building trust. In relation to trust, one delegate mentioned sharia banking and ethical financial models, such as Triodoos, as interesting alternatives.

Early providers were using unfamiliar technologies and methods, and so were allowed by regulators to experiment, as in Kenya, for example. But there are fears that governments may increase regulation and stifle innovation. So the role of and relationship with central regulators is key. Developing that relationship is a crucial factor in creating multi-stakeholder partnerships. ◄

e-voucher initiative in Zambia

In Zambia, MEDA is supporting its local partner, Zoona, to design and test agricultural e-vouchers. The e-vouchers allow smallholder farmers to receive some payment in cash after supplying their produce, while the rest is given via an electronic scratch card that can be redeemed over time. Farmers consider the scratch cards a convenient and secure mechanism as they eliminate the need to carry around large sums of cash, which can be stolen or destroyed in a fire, for example. The e-voucher is personal and therefore not prone to theft, and because money is stored electronically it encourages saving money for future use. In 2012, the e-voucher service reached over 20,000 in farmers.

BENEDICTE DESRUS / ALAMY

Mark Speer (mark@contactivity.com) is editor of *ICT Update*. With thanks to the CTA Knowledge Management team for their input.

Related links

Grameen Foundation Community Knowledge Worker initiative
➔ http://goo.gl/QsjrXA

mVisa, mobile branchless banking
➔ http://goo.gl/l526Ex

MEDA and Zoona e-vouchers
➔ http://goo.gl/D8OHZj

Mobile banking feasibility study
➔ http://goo.gl/EcF6wo

Plug & play

Making it happen

Mendeley

Mendeley is a combination of desktop application and website. It helps people manage and share content and contacts in research. Mendeley facilitates collaborative adding and tagging of papers, is interconnected with social media sites and can provide readership statistics. It also lets authors create and embed bios on other sites. This gives them control over what information is displayed about them, as they can update it at will. The International Food Policy Research Institute used Mendeley's group platform to create a collaborative bibliography group of research publications relevant to one of its 2011 conferences entitled, 'Agriculture, Nutrition, and Health.'

➜ http://www.mendeley.com

SUGUFI

SUGUFI is a virtual marketplace that serves as a matchmaker between farmers and buyers. It gives farmers a more reliable platform to promote their products and link up with potential buyers. Moreover, it enables buyers to find farmers who have products that they need quickly. Farmers and buyers connect by sending an SMS to promote or ask about products to one of the SUGUFI country registered shortcodes. SUGUFI thus not only supports farmers, but it also establishes a reliable supply chain to businesses such as hotels, restaurants, supermarkets and commercial buyers.

➜ http://coders4africa.org

CKW search system

The Community Knowledge Worker search system allows community knowledge workers to submit questions from farmers about their farming activities. A menu-based system displays different available categories of CKW search content on a mobile phone screen and the community knowledge workers choose the option they desire. The CKW search system consists of three major components: a mobile client application, a community knowledge worker's entry-point into the system; a server, which consists of a database that stores keywords and response data, and a web server that handles incoming requests and writes against the database; and a content management web interface used by the information services team to add, remove, and update both keywords.

➜ www.grameenfoundation.applab.org

Farmerline

Farmerline provides improved information access and communication pathways for smallholder farmers and agricultural stakeholders. It provides a web-based turnkey service, accessible by any organisation that has internet access anywhere in the world. Farmerline has been designed so that is is user friendly in all sectors and languages with no technical knowledge or hardware investment required. As a service specifically focused on smallholder farmers, Farmerline uses its technology to send voice and text messages, poll, and offer call-in services to link farmers to extension, markets, finance, agro-inputs and equipment services.

➜ www.app.farmerline.org

AGRICO

The large number of interventions and the many projects conducted by organisations make the task of extracting data for analysis and decision making highly complex. AGRICO is a software package that enables an agricultural cooperative to enter the references of its members, (such as groups and farmers), their employment contracts and data related to agricultural inputs (fertilisers and seeds, for example). After that has been done, all the cooperative needs to do is update the information for data extraction purposes, which will make it possible to conduct analysis by community, village, group, farmer and agricultural campaign.

➜ http://agrico.yam-pukri.org

Smart Village system

The Smart Village system provides a multichannel access platform that allows farmers to send and receive agricultural information, sell and purchase agricultural produce, and retrieve and track prices of particular agricultural commodities. The Smart Village system's services include farmer-to-farmer collaboration, alerts, farming guides, price retrieval and tracking, offering of and bidding on commodities, location services and e-extension services. These services assist farmers throughout the production cycle – from planning stage until sale, whether locally, regionally or globally. The Smart Village platform has already been set up at the Rwandan Broadband Service Corporation.

➜ http://goo.gl/Nt0dpB

AIRS

Farmers lack access to key location and crop information that would improve revenue through increased productivity and higher outreach to the market. Most of the mobile-based solutions that have been developed in the past assumed that farmers know what information they need and the syntax they have to use to retrieve the information. The Agronomy Information and Reminder System (AIRS) is a platform that allows data to be pulled from different sources, organised and distributed to relevant subscribed farmers. AIRS is an implementation of the platform that leverages the Technoserve database of the most efficient fertilizers for coffee productivity depending on the location and soil type. Farmers are able to receive precise fertilizer recommendations and other important agronomy information depending on their location.

➜ www.axis.rw

More family than team

Nawsheen Hosenally kicks off a new feature called *Young voices* with an article on the experiences of the young social reporting team at the 2013 ICT4Ag conference in Rwanda.

Making it happen

One of the highlights of the ICT4Ag conference was the presence of a social reporting team. Dressed in their white social reporting T-shirts, these dynamic young people from 11 ACP countries were omnipresent – taking notes on key points at sessions, engaging in discussions, posting live tweets, and interviewing and photographing panellists and other delegates.

The engagement of youth in agriculture and rural development is a key factor for the sector's sustainability and future. That's why CTA has been involving youth in its activities through various projects and programmes for the past years, and has recently developed a youth strategy to better integrate them.

The main reason for having a social reporting team at the ICT4Ag conference was to raise awareness about the streams, sessions and topics before, during and after the event. Training and involving youth in social reporting enabled CTA to strengthen their capacity and that of the organisations they are affiliated with on the use of Web 2.0 tools and social media for social reporting.

Massive interest

There were more than 500 applications from different countries following a call for social reporters in August 2013. This demonstrated substantial interest on the part of the youth for social reporting and their willingness to learn more on ICT for agriculture.

'When I applied to do social reporting at the ICT4Ag conference, I didn't really know what to expect,' said Catherine Banda from Malawi at the two-day training on social reporting in Kigali. Indeed, it was the first time that CTA had an official social reporting team at its annual international conference. And it was going to be a new experience for the whole team, including the social reporters and CTA.

CTA contracted a social reporting coordinator to lead the team. Ultimately, 15 reporters were selected to form the on-site team, and around 250 others formed part of a larger online team. The discussions immediately revealed how diverse the group was in terms of geography and also their involvement in agriculture and ICTs.

Both the on-site team and the online team had specific reporting tasks at the conference. The on-site team attended a two-day training on social reporting in Kigali prior to the conference. They were exposed to the different tools that would be used at the conference, as well as who the target audience was and how to package and disseminate the content via different channels.

The social reporters also worked with the conference Knowledge Management (KM) team. 'We don't want a lot of tweets or blog posts with content that doesn't bring much value. Concentrate on the examples of innovations shared, the secret ingredient that made an initiative or innovation successful, lessons learnt and the actions taken to make it happen,' Pete Cranston of the KM team told the social reporters during the training.

The pay-off

The coordination team observed a stark improvement in quality of the work delivered by the social reporters before and after the on-site training in Kigali, both in the tweets they sent and in the writing on the blog posts. At least two reporters were assigned to each session during the conference. While they sent tweets, took photos and videos, and wrote blog posts, they also had the opportunity to interact with speakers and chairs from the sessions.

Meanwhile, while the on-site team was busy producing and publishing content, the online team was helping to disseminate the information through various channels (Facebook, Twitter, LinkedIn and YouTube). The social reporting coordinator continuously checked to ensure that everything was going as planned on-site and online.

The young social reporters really impressed at the conference. They were always the first ones to come to a session and the last ones to leave. The team worked around the clock, many of them sleeping just three or four hours a day to make sure they submitted their blog post and other content on time.

During the closing ceremony and gala dinner, the conference organisers gave the hard-working social reporters the recognition they deserved. They received their certificates in the presence of the Rwandan minister of youth and ICT, the Rwandan minister of agriculture and animal resources, the director of CTA and other distinguished delegates.

According to social media tracker Keyhole, from the month preceding the conference to its end, the event generated 12,322 posts, 1,910 unique users, 14,080,542 views and reached 2,536,835 people. For a first experience, these statistics are very encouraging and the contribution of each social reporter, whether online or on-site, was crucial to the success of the social reporting process.

While the figures showed the outreach of the social reporting team, for those who were involved in this activity it was a real learning and sharing experience. Everyone brought some form of knowledge and experience on social media, but all left with a wealth of skills that they will use in our activities, both personally and professionally. As on-site reporter Riten Gosai from Fiji said on the last day on the conference: 'We came here as the social reporting team and are leaving as a family!' ◀
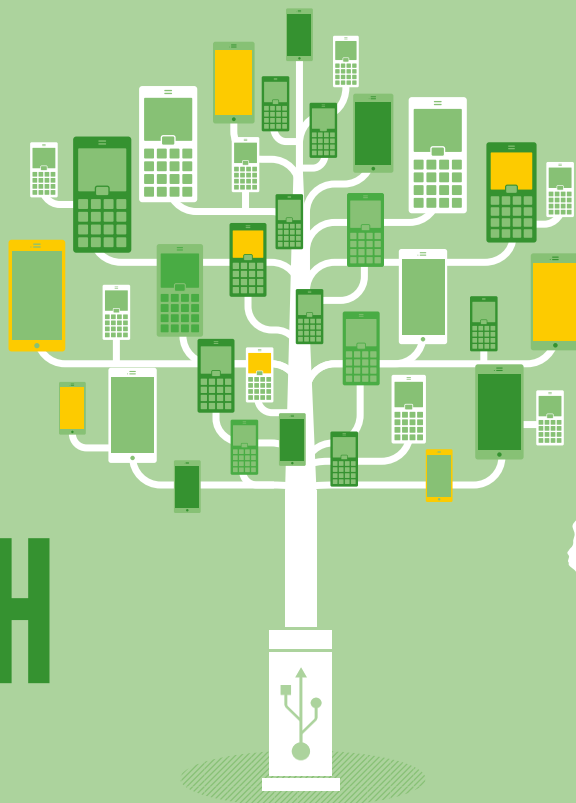

CTA / YOHANNES ORISTE ZIROTTI

Nawsheen Hosenally (hosenally@cta.int) is ICT4Ag associate at CTA in Wageningen, the Netherlands.
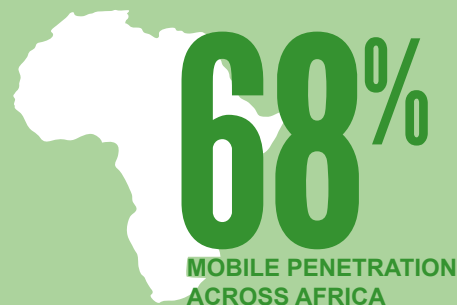
THE DIGITAL SPRINGBO

43%
GROWTH
IN SMARTPHONES IN AFRICA IN 2012 ALONE

6%
OF ALL MOBILE PHONES IN AFRICA ARE SMARTPHONES, AND THIS NUMBER IS GROWING FAST

68%
MOBILE PENETRATION ACROSS AFRICA

AFRICA WILL HIT A

BILLION MOBILE SUBSCRIPTIONS

IN THE NEXT TWO YEARS

BOOSTING FOOD SECURITY IN AFRICA, THE CA

ICTUPDATE.CTA.INT   WWW.ICT4AG.ORG

SMARTPHONES ARE OUTSELLING PCs

4 to **1**
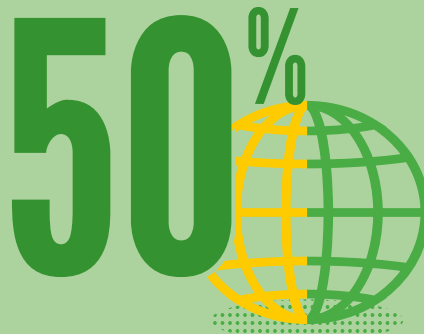
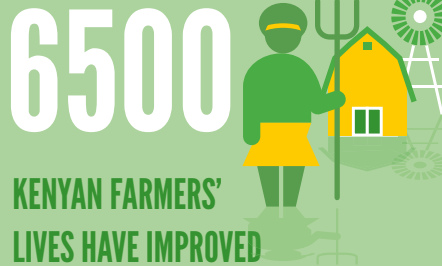## 50%
OF INTERNET CONNECTIONS COME FROM MOBILES

3 OUT OF 5 FINALISTS
AT PIVOTEAST 2012, EAST AFRICA'S PREMIER MOBILE START-UPS COMPETITION AND CONFERENCE, WERE YOUNG ENTREPRENEURS WHO HAD CREATED AGRARIAN APPS

iCow = 56%

56% INCREASE IN MILK PRODUCTION BY THOSE FARMERS USING THE ICOW APP AND PLATFORM IN KENYA

6500
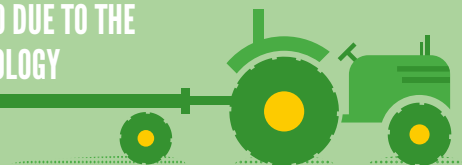KENYAN FARMERS' LIVES HAVE IMPROVED

WITH THE M-FARM MOBILE (SMS) SERVICE WHICH PROVIDES THE LATEST MAIZE PRICES

$150 KILIMO SALAMA

A $150 INCREASE IN INCOME PER SMALL FARMER USING KILIMO SALAMA, A MOBILE AND WEB PROGRAMME

+$48 BILLION
POTENTIAL INCREASE IN AGRICULTURAL INCOME IN AFRICA BY 2020 DUE TO THE SPREAD OF MOBILE TECHNOLOGY

...ARIBBEAN AND THE PACIFIC.

CTA

Supporting change processes

Your article for the pre-conference issue of *ICT Update* asks how ICTs can strengthen people's capacity to improve their position in the agricultural sector. Did your stream on capacity strengthening manage to address this problem?

Making it happen

➜ Yes, my stream hosted a session to see what ICTs can do for grassroots engagement. The session really confirmed that ICTs can empower individuals. It was nice to analyse with some of the presenters the insights that they gained in terms of what makes that difference. I'm thinking, for example, of the presentation by Catherine Molua Mojoko, president of the grassroots organisation Walana Wa Makwasi in Cameroon. She spoke about her work with women, youth groups and mobile phones.

The training Catherine's organisation gives is relatively simple and helps women to start using mobile phones at least to receive messages. It turns out they learn the technology quite easily. Some of the women are illiterate, in which case it's important to group them together with other women – not just so they can sell their produce collectively, but because it creates support mechanisms for capacities that aren't there. Children and other women in the group help the illiterate to read and send messages on their mobile phones.

There were a couple of other things that came out of the session about what is needed for people to be empowered by ICTs. One issue that was mentioned several times was trust. To take Catherine as an example again: she was an extension worker for 25 years and worked in the communities that she is still serving today. These communities know her, trust her. She has the agricultural knowledge, and her organisation is trusted because of that long-standing relationship.

Saskia Harmsen (sharmsen@iicd.org) is officer community relations, innovation and capacity development at the International Institute for Communication and Development in The Hague, the Netherlands.

Participation was discussed in your session. Talk a bit about that.

➔ One thing that was really stressed during the grassroots session is that you really have to know the needs of the farmers. I know it sounds obvious, but ask yourself: when do people really know the needs of the farmers? Not when they go in and do a feasibility study and come out again to create some kind of a solution. It's really important that you become part of the communities – visit the people on their plots, build one-on-one relationships with them – and stop seeing them as a focus group with whom you will assess needs. It takes much more than that

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When shortcutting leads to failure, we need to publish those findings too

for farmers and the ecosystem around them to be a part of the change process that you want to introduce.

Someone at the conference actually suggested devoting an entire day to farmers. What do you think of that idea?

➔ Actually I'm very interested in the level just above, the farmer organisations. Those are the people organising farmers. I was hoping that the session about experiences in implementing ICT solutions in farmer organisations would have focused more on these organisations as a key unit for transformation. But everyone kept going back down to the farmer level – which is encouraging, but it's not just the individual farmer that we're trying to serve. We're trying to reinforce the sector's different levels, including the farmer of course, but also the organisations that represent the farmer's interests.

Another important point someone made is that farmer organisations don't only work to improve the commercial interests of farmers. Farmers' needs are much more holistic than that. In that respect, I would have liked to hear a little more about experiences using ICTs to reinforce the broader aspects of what farmer organisations do. The focus always seems to go back to the tools we use to economically represent the farmers' interests, but in addition to generating income, people working in rural farming are also fathers, mothers, and members of their wider communities. Farmer organisations link their members and help

to articulate rural communities' concerns and interests vis-à-vis policy makers. ICTs have tremendous potential to support such work as well, so it would be good for us all to pay more attention to such issues and experiences.

One of the session leaders asked us to write onto a card what really 'wowed' us at the conference. Did anything wow you?

➔ I feel like it did. I hope what I'm about to say doesn't sound like a promotional statement. I've been working for IICD for 11 years now, and I've always believed in our approach. It focuses on strengthening the capacity of local organisations within a sector to use ICTs on their own terms. It's demand led, lets the people we work with figure things out themselves, and it brings together different stakeholders and technologists, with the agricultural organisations in the lead. Capacity building has always been a key element of this approach – through training, coaching, mentoring and knowledge sharing. It's so ingrained in me that I wanted to come here and find out whether other people see things differently. Is our approach the right one, or do I just believe in it because it's what I know best? But the capacity strengthening stream has really reinforced my appreciation for the way IICD sees things, also in these times of reduced funding when there's pressure on us to let go of some of these holistic and comprehensive processes that we believe in.

What we can take away from this conference is that capacity building implies supporting change processes – be it of individuals, communities, organisations or institutional relationships. Capacity building is more than training, and technology does not come first. Yes, we need innovation, but innovation in the form of social innovation supported by technology, innovation within organisations and sectors – the processes and systems that they employ – and not within the technology itself. All the streams really confirmed these ideas for me. That was the wow for me.

The title of this issue of *ICT Update* is 'Making it happen'. Are you confident that participants of this conference will take home what they've learned here and actually make things happen?

➔ We're already trying to make things happen. We are willing to do more in terms of providing evidence that good processes lead to good outcomes. That's what is great about the organisations that were at the conference, and those that co-organised the conference. Take the example of the call

for 'scaling good process' rather than 'scaling ICTs' – organisations such as FarmRadio International, ILRI and others that subscribe to this call – they're already doing it, and together we think that we can stand stronger in advocating what we know from practice is right. And when shortcutting 'good process' leads to failure in some way, we need to publish those findings too to inform funders and budget-holders that investing in ICTs as part of participatory development processes is the sensible thing to do.

Another point is that we need to make our experience in facilitating such processes available to the technologists. If they had a good idea but are finding that their technology is not being picked up, then we need to join forces with them and make the efforts more process-minded, if possible. This point was stressed on several occasions, so I think that is another thing that people will make happen.

Is there something you would like to add?

➔ Yes, one more main point that came out of the stream is the recognition that the introduction of ICTs and the training of youth in ICTs helps them to stay in farming and in rural areas. IICD has just launched a publication based on the experiences of Gerisholm Boiyo from ACK-WRCCS and his colleagues in western Kenya. His work really substantiates that claim. It begins to answer many important questions. What drives and motivates the youth? What do they think about, and what direction will they go in after having been trained in ICTs? How does that differ if you're a young male or a young female in rural western Kenya? That was another wow for me, by the way, in terms of the synchronicity of essential ingredients for making ICT4Ag work. ◄

WAYNE HUTCHINSON / ALAMY

Selected submissions

Professionalising agriculture in Rwanda

ICT in Agriculture enhances agricultural and rural development through improved information and communication processes. Rwanda has a strong force of proximity extension agents who work directly with the farmer groups to assist them to increase productivity, improve quality and reduce post-harvest losses. The Rwandan ministry of agriculture and animal resources has put ICT initiatives in place to assist these agents: a farmers extension website, a market price information system and ICTs for weather insurance (agricultural insurance known as *Hinga Urishingiwe* in Kinyarwanda), which insures farmers on agricultural production, effectively reducing the impact of severe weather.
➜ www.esoko.gov.rw

FLICKR / CIAT

FarmerConnect

Most ICT systems deliver generic information to farmers over mobile phones. It takes a great deal of effort and comprehension to translate such information to the personal context. FarmerConnect helps you deliver personalised extension services and information intelligence to farmers in order to improve their yield. FarmerConnect is a cloud-based platform that hosts a marketplace for extension services, weather news, market updates and announcements so that subscribed farmers can receive contextual and personalised information on their mobile phones.
➜ http://farmerconnect.org

FLICKR / WORLDBANK

Community Multimedia Centre in Rwanda

The Community Multimedia Centre pilot in Rwanda was initiated by Huguka and promotes the use of ICTs in the rural agricultural community in Rwanda. ICTs, and the internet in particular, have had a major impact on the those involved in agricultural development, such as farmers, agricultural extension workers and NGOs.

Located in rural areas, the Community Multimedia Centre, which offers various services such as internet, computer training and agricultural training, has transformed the socio-economic life of the rural population, especially the farmers who have integrated ICTs into their socio-economic life.

FLICKR / AKB 2006

Feed the hotels

The Fiji government has launched a 'Feed the hotels' initiative, working with farmers in the Sigatoka valley to supply fruits and vegetables to the hotels along the Coral Coast. Local farmers and producers are still struggling to meet the food demand in the tourism sector. Enabling hotels to post purchase offers in advance on a centralised information system will allow farmers to plan planting and harvesting and tailor their offer to existing demand. The objective of this initiative is to set up a mobile and web marketplace to facilitate communications and business matching between sectors – particularly the farming community with the tourism sector – but also food processors and exporters.
➜ fijimakete.com.fj

FLICKR / JOHN TRIF

Changing perceptions

The session on 'Capacity development, gender and ICTs in agriculture' stressed the importance of involving all stakeholders, including men and the larger family unit, in initiatives to improve women's access to ICTs.

Making it happen

The session on 'Capacity development, gender and ICTs in agriculture' centred on several case projects in different regions of Africa. One particularly successful case in Burkina Faso has improved the lives of women in two of the country's regions – and therefore these communities' overall well-being. Projects led by the Women of Uganda Network (Wougnet) illustrate the importance of involving men in projects designed to improve the position of women and overcome stereotypes.

One problem associated with gender and ICTs in agriculture is how to change the perceptions, attitudes and stereotypes against females. Rural women are major contributors to their households and communities. By generating income and improving food security and overall standards of well-being, they are an important part of the engine that fuels local and global economies. Yet women continue to face constraints that deny them a number of basic human rights.

Males generally control the use of ICTs in African households. Women often have to convice their husbands of the benefits of giving them access to even basic ICTs such as radios or mobile phones. Men therefore need to be involved in the process of addressing gender issues, otherwise changing their attitudes and fighting these stereotypes will be a losing battle.

The Nununa Federation

The Nununa Federation in Burkina Faso is a success story that illustrates the benefits of giving women access to ICTs. The federation is a cooperative of women who produce shea butter and sesame. It has 4,771 members divided into 115 groups. In 2011, it launched a project called the Voice of Women. One of the project's key aims is to strengthen the ICT skills of the federation's members and improve communication within the federation and with its stakeholders.

The project has set up seven training and information centres in communities to improve communication about ICTs with affiliated groups and individual federation members. They are equipped with multimedia players, video projectors, external hard drives, printers, communication headsets, generators, photo cameras and internet modems.

The equipment has cut communication costs and travel time as many tasks can now be performed at one of the centres. Information and facilitation kits have enabled members of the Nununa Federation to advance from basic ways of sending information and messages to decision makers and stakeholders to much more dynamic methods.

Wougnet

Wougnet runs projects that aim to create awareness of gender issues in agriculture. Wougnet involves men in the projects (the ratio of women to men is 70% to 30%) and focuses on developing the capacity of all stakeholders – female or male – in the agricultural and rural development sectors.

The information groups for farmers and Q&A services established by Wougnet have increased awareness of the benefits of sharing knowledge and giving women access to ICTs. These groups stress important points such as the need to arrange meetings that involve women at times that suit their daily timetable, the importance of having role models within communities to establish trust and adapting ICT tools to local content and farmers' basic needs.

The need to involve men in these projects extends, by definition, to the family unit as well. A family-centred approach to ICT projects enables parents to recognise the importance of sending both sons and daughters to school. Educating both genders will benefit the community at large, just as giving women access to ICTs will, as we saw in the Burkina Faso case.

Whether such initiatives to involve men and the family unit are successful or not can result in either an upward cycle or a downward spiral. Once it is accepted that all children, regardless of gender, should be educated, they are likely to continue that upward cycle. But if men fail to recognise the importance of giving women equal access to technology or educating their daughters, then these ICT projects are far less likely to succeed. ◀

CTA / YOHANNES ORISTE ZIROTTI

Mark Speer (mark@contactivity.com) is editor of *ICT Update*. With thanks to the members of the CTA Knowledge Management team for their input.

Plug & play

Making it happen

M-Farm

M-Farm is a software solution and agribusiness company. It is a transparency tool for Kenyan farmers, who can receive information about the retail price of their products, buy their farm inputs directly from manufacturers at favourable prices and find buyers for their produce – simply by SMSing the number 20255. M-Farm enables farmers to find out about current market prices of different crops from different regions or specific markets. It aggregates farmers' needs and puts them in touch with farm input suppliers. M-Farm also enables farmers to sell collectively and connect them with a ready market.

➜ mfarm.co.ke

Infragram

The Infragram is a simple, affordable infrared camera platform developed collaboratively by the Public Lab community. Large farms, vineyards and NASA all use near-infrared photography for assessment and Infragram brings this open source technology to small farmers, enabling them to monitor their own crops. Knowing when to take action before problems are visible ensures better yields. Infragram can be created through a simple modification to a digital camera. The one-click free web software allows you to upload a photo and seconds later receive an analytical image of your crops. Public Lab's open source community is working on an offline version of the software that you can use in the field.

➜ infragram.org

M4agriNEI

M4agriNEI stands for Integrated, Interactive and Farmer-Specific Agro-Advisory System. This mobile-based agro-advisory system based in north-east India is an innovative mix of mobile, web and interactive voice response applications and has been integrated with other services, such as telecentres. M4agriNEI makes it possible to transmit data through voice, text, images and videos from both ends (farmers to expert and back). The system gives farmers the option to subscribe to various agricultural and other relevant information services. Farmers only receive information for the services they have subscribed to, via SMS, voice call, picture and video clips.

➜ www.m4agrinei.in

Pelican Pi

Pelican Pi is a low-power, low-cost, high-capacity, sustainable and durable educational solution. Specifically designed for developing countries, this solution provides a proven world-class educational curriculum to environments lacking Internet connectivity or bandwidth. The portable ruggedisded mini-server was developed by hackersforcharity.org in collaboration with Uconnect. It makes available 3,700+ videos, 8,900+ full articles, 3,000+ electronic books and 6,500+ technology and life-skills lessons, among many other things.

Ecert

Ecert Grower Group Certification is a software-based administration and documentation system that facilitates the implementation of internal control systems (ICS) for grower groups through a database, checklists, reports and data exports. The implementation of an ICS is required by many standards (e.g. organic, fair trade, GLOBALG.A.P.) to control the groups' adherence to these standards. Owing to the up-to-date traceability of the inspection and certification process, including sanctions and time limits along every step of the process, the cooperation of grower groups with their external certifiers is considerably improved and simplified.

➜ http://goo.gl/rVjZb2

VitalFields

VitalFields is an online software service for field records, plant disease alerts, farming weather and field records. The software creates personal weather forecasts by taking data from the best weather forecasters and presenting users with field-based estimates. Shorter forecasts are updated once per hour. Longer forecasts are updated many times during the day. VitalFields can also monitor the weather and fieldwork information in a user's specific field. It matches this information to disease forecasting models, enabling it to present users with the risk level per field. VitalFields also features a web-based crop records system that can be accessed through a mobile device.

➜ www.vitalfields.com

E-agriculture for young farmers

The Foresight Generation Club in Ghana has compiled a mobile database for farmers, transporters and buyers. This basic but practical and user-friendly ICT platform aims to solve the most pressing social challenges facing catchment communities. It also hopes to improve farmers' incomes and generate employment opportunities for many young people who are at risk of going astray. One of the ways it accomplishes these aims is by identifying appropriate buyers in local regions – which will reduce transport costs – such as boarding schools and restaurants.

➜ http://goo.gl/Gchbxd

Open Data Kit

Open Data Kit (ODK) is a suite of tools meant for mobile-based data collection. ODK comprises of ODK Form Design, ODK Collect, ODK Aggregate, ODK Briefcase, ODK Survey and ODK Tables, among others. These tools are geared towards simple, effective and efficient data collection on mobile devices. The ODK suite is free and open sourced making it ideal for researchers and developers to extend them to be better suited for a specific task, such as livestock sampling. The use of open standards provides a suitable platform for downstream integration with other sample collection systems.

➜ www.opendatakit.org

Pooling strengths and resources

Making it happen

In the last issue of *ICT Update*, your colleague Ifidon Ohiomoba said that the 'Enabling environment' stream at the ICT4Ag conference aimed to explore ways of accelerating the exchange of knowledge through ICTs in the agricultural sector. Do you believe this aim was accomplished?

➜ Yes, one thing that has clearly emerged at this conference is that there is a plethora of initiatives going on in different places.

People are increasingly aware that they are often doing almost the same thing as others, just in a different location. So they need to look more closely at what is being done and where. This is the starting point for linkages, for collaboration. Right now, people's energy is scattered all over the place. We need to bring people together so they can try to focus their efforts in the same direction. They need to pool their strengths and resources. This is the only way we can achieve more – and better – results.

Another key point is that policies need to be in place to enable ICTs to play an effective role in agricultural development. Did your stream sessions discuss this issue?

➜ Yes, in fact there are examples of certain countries that are moving in that direction. The number of countries developing such policies is on the rise, such as Kenya, Ivory Coast and Rwanda. Awareness of the importance of these policies is also increasing. These kinds of meetings, which bring large numbers of people in the field together, are real eye openers.

Participants learn from people who have already put these kinds of policies in place. They say to themselves, 'They did it – so why can't we?' That's one way awareness is enhanced, so in that respect this conference has been encouraging. Participating in sessions like these is an opportunity to learn a great deal from your peers and build confidence. It gives us a

Dady Demby (ddemby@fara-africa.org) is programme officer for Regional Agricultural Information and Learning Systems at FARA in Accra, Ghana.

chance to see what is going on and network with people who have already developed ICT policies. So I am convinced that something will come of these conference sessions in the end, based on their specific needs and areas of interest.

Did the sessions explore different investment possibilities for mobile ICTs, especially in rural areas?
➔ We had private telecom operators – such as Catherine Flouvat, CSR manager at Orange – attend one of the sessions, so we discussed this issue in detail. It became clear that there are areas where public finance is really needed because the private sector is unwilling to commit when the

Participants learn from people who have already put policies in place. They say to themselves, 'They did it – so why can't we?'

return on investment is so low. Think of issues related to building infrastructure in rural areas, for example, where there's little chance of any return on investment.

So we need public funds. But there is another way. Public–private partnerships can generate the necessary investments to improve the penetration rates of ICTs, by bringing broadband to rural areas, for example. I was amazed at the map of broadband reach in Kenya shown by one of the presenters. Broadband was mainly available in many urban areas, while huge portions of the country outside the cities remain unconnected. Most people tend to think that Kenya is well connected, but this map actually painted a different picture.

CTA / YOHANNES ORISTE ZIROTTI

There's a great deal that needs to be done to make broadband more widely available.

Did the sessions focus on the skills that citizens have or need to take advantage of ICTs for agricultural development?
➔ Yes, we need to increase capacity building. When we develop and introduce new technologies, we need to ask ourselves from the inception who we are targeting and whether they have the capacity and skills to use these ICTs. One participant commented on mobile phone penetration, saying that high penetration rates are well and fine, but are we also looking at how these mobile devices are being used by end users? They could be using them for social purposes, to call friends and family to see how they are doing, but meanwhile these devices can do so much more. So we need to find out whether people are using these devices to their full potential. Penetration, reach, end users – these important factors are all interlinked. The capacity to use technology is a key issue.

What is being done to establish appropriate guidelines to help communities of practice use ICTs for agriculture?
➔ Well, I would like to start by mentioning something else that was raised in our sessions first, something that is often overlooked, namely environment. The basics need to be in place before we can talk about the next level of needs. Electricity supply needs are part of an enabling environment, for example, just to name one.

As for communities of practice, I view them as an opportunity. If we manage to find the appropriate tools to suit their needs and expectations, then that will already be a step forward. This is one of the things we are looking at here at FARA: the use of mobile devices by stakeholders in the value chain through the establishment of 'innovation platforms for technology adoption'. These platforms are using a value chain approach to facilitate access and disseminate new agricultural technologies to producers.

We want to see how best these mobile technologies can be used to respond to the needs of all the stakeholders in the value chain as they communicate, exchange and interact. How can we make mobile devices relevant to them and respond to their needs as a community of practice? There is much room for improvement in terms of making these tools relevant to these communities.

The title of this issue of *ICT Update* is 'Making it happen'. Are you confident

that participants of this conference will take home what they've learned here and actually make things happen?
➔ Oh yes, I'm certain of that. Take Ivory Coast, for example. It sent representatives from its ministry of agriculture to the conference, and one of the commitments they have made here is that when they go home they will hold a national ICT4Ag meeting. Ivory Coast has already been developing a national strategy, but this conference has helped them to open their minds again. They will be taking home new ideas and new perspectives that will improve what they are already doing. And a number of other people I have met here are thinking along the same line.

Other participants have told me that they have seen applications and technologies here that respond to a specific need they have. And others have said experiences have been shared here that remind them of their own situation. So I'm convinced people will go home and try out these new ideas.

Is there something you would like to add?
➔ One thing that I would like to mention – which in my opinion is crucial – is political will. We've seen examples of countries, such as the host of this conference, Rwanda, that have undergone tremendous change. Look at the progress Rwanda has made, and it's all the result of strong political will. One presenter mentioned that most African countries have enough resources to do what they want to do, but the political will is lacking. Finding ways of influencing policy and decision makers is crucial because if there's no political will then even if you have all the resources you need, financial and human, the whole process is bound to be mismanaged.

What we need is sensitisation. We need to create awareness of the potential of ICTs and the potential of agriculture. We need to get leaders to understand. As Agnes Kalibata, the Rwandan minister of agriculture, said here at the conference, her country's president, Paul Kagame, believes in the power of ICTs. He made this clear at the Transform Africa Summit in Kigali held on 28–31 October 2013 when he spoke of equipping African youth with ICTs to speed up development and innovation. For a leader at that level to make that kind of a statement shows that he has understood something. We need more African leaders to reach that level of understanding, to make similarly bold statements. And more than that, we need them to take action and make things happen. ◀

**Making it
happen**

ICTs in Colombia

Colombia has a diverse ecology, and yet it suffers from huge production gaps.
A research–intervention activity was therefore conducted in 2012 and 2013 with
small- and medium-scale fruit growers to understand growers' attitudes and
practices using ICTs when managing data, exchanging local knowledge and making
decisions. The findings showed that growers had little to no computer skills,
and mobile phones were only using for calling. However, the idea of exchanging
knowledge through chat sites, video calls and phones generated considerable
interest, as did the use of tablets. One farmer per group was identified as having
ICT skills, and children also interacted with adults on ICTs.

The Rural Empowerment Network

A key element to improving agricultural
production is to provide farmers with
timely and useful information. In Uganda
researchers generate knowledge to support
resource-poor farmers but it is provided
using a top-down approach denying
them the opportunity to demand specific
information. The Rural Empowerment
Network's voucher system of knowledge
transfer addresses this problem by linking
farmers to knowledge solutions. A field
agent records a farmer's question and
photographs relevant images using a digital
camera. This is published on an internet
platform and an answer in layman's terms
is provided through a research network.
The most frequently asked questions are
broadcast over local radio.

Community forestry in Nepal

Figures suggest that up to 95% of people
in Nepal depend directly on community
forestry, the resources of which are crucial
for agricultural farming in the mid- and
high-hills. And 31% of the population lives
below the poverty line. The government of
Nepal is developing different policy and
management plans to allow its citizens to
benefit more from the pratice. These plans
include payment for ecosystem services,
a carbon market, reducing emissions from
deforestation and degradation, as well as
eco-tourism and 'green' forest-related jobs.
These plans stand to directly benefit the
community and simultaneously address
climate change.

Data out, knowledge in

Agricultural researchers in sub-Saharan Africa face two persistent challenges: getting
high-quality data in from remote locations and making information accessible to
stakeholders in the agricultural value chain. Electronic data collection can ease
scientists' work and open new opportunities for mixed approaches and modes of
research. It can also make scientific data more accessible, for example for direct
use by farmer organisations, development partners, the private sector and policy
makers. Key agricultural extension information and other farm support services can
be made available 24/7 through knowledge brokers within farming communities or in
collaboration with the private sector.
➜ www.iita.org

Taking risk out of local hands

The session on 'Broadband' examined innovative ways of reducing the costs of connectivity and improving access to internet and other ICT services in remote rural areas.

Making it happen

Local entrepreneurs are important players in the effort to establish connectivity in rural areas. It is important that they have the skills to run ICT services, however, and just as important, they must have the ability to develop sound business cases to attract investors and subsequently set up and maintain successful and sustainable businesses. Unfortunately, this is not always the case. According to Orange, the French telecom operator, nearly two-thirds of local ICT businesses ultimately fail. The good news is that there are innovative ideas that can mitigate some of these risks, as the case of 'universal service funds' in Pakistan demonstrates.

There are also other simple but effective actions that can be taken to further save costs, such as switching off equipment at night to save on energy costs and using cheaper bandwidths. Other ideas include green solutions, such as solar-powered base stations, to build sustainable connectivity services and using TV white space as old analogue broadcasts are switched off across Africa. This solution would provide cheap last-mile connectivity.

Another suggestion made during the session on 'Broadband' is a 'Pay as you grow' rather than 'Pay as you go'

CTA / YOHANNES ORISTE ZIROTTI

model. This solution would help people who cannot afford connectivity to get started. Connectivity has been shown to lead to inclusive economic growth. The idea behind 'Pay as you grow' is to give the initial support so that people without means can have internet access, and charge for the service later as their incomes grow.

Connecting remote Pakistan

The Pakistan case in this session presented a solution called 'universal service funds'. The idea behind these funds is to have all licensed telecom operators contribute a percentage of their revenue to a fund managed by a third party, such as a government or an independent public–private enterprise. The third party then uses the fund to subsidise infrastructure and connectivity in economically less profitable areas.

The example of an agriculturist named Hamed Khan Achakzai living in the province of Balochistan in Pakistan illustrates the need for this service fund. Achakzai owns apple orchards and transports his produce to other parts of the country, including the port city of Karachi in the south of Pakistan and regions further north. Ideally, he needs to plan the transport of his produce well and decide which routes are the most cost effective. Based on that, he would then need to harvest his fruit at exactly the right time, so that it coincides with the planned transport times. This kind of information is hard to come by in remote areas, however.

It is in situations such as Achakzai's that universal service funds can step in. These funds have to be well managed, however. Indeed, it is not always a given that a government – which can be inefficient and overly bureaucratic – is the best agency for the job. Pakistan administers an innovative universal service fund through a non-profit, independent company working as a public–private enterprise called USF. The company's independence is safeguarded by a board of directors that represents all stakeholders, including politics and industry. As a counterbalance, the

company employs directors from both the public and private sectors.

In its first five years, USF has achieved several successes in its effort to build an ICT infrastructure and provide rural areas with connectivity. It has given broadband to 260 small towns (which equals about half a million working subscriptions). These subscriptions include more than 1,000 schools and libraries and 300 community broadband centres. More than 4,000 km of optic fibre cables have been laid in rough remote regions connecting 67 of the hundred-plus unserved sub-districts. And USF has provided voice telecom services to more than 4,000 unserved remote villages.

Through its effective strategies and sound governance, USF has shown how the concept of a universal service fund can begin to provide four key ICT needs: availability, awareness, affordability and attractiveness.

USF has managed to take the risk of investing in ICT infrastructure in remote areas out of the hands of local entrepreneurs. Better infrastructure and improved connectivity have benefited remote communities by creating awareness about new business opportunities and bringing together producers and new buyers. These improvements have also led to better farming practices and provided opportunities for further improvements for farmers such as Hamed Khan Achakzai through customer feedback, such as timely pruning, watering, packaging and categorising. ◀

Related links

Universal Service Provision Fund of Nigeria
➜ www.uspf.gov.ng

National Broadband Strategy of Kenya
➜ http://goo.gl/WsCLlt

Universal Service Fund of Pakistan
➜ www.usf.org.pk

Making it happen

Log'el Mobile ICT kit

The Log`el Mobile ICT kit is a package which includes a plastic, square-shaped bag in which one can put useful ICT tools, such as a laptop, a small solar charger, a small solar panel, stationery and a host of learning materials. The bag is attached to the side of a bicycle, which the operator then rides to reach his or her targeted rural community of youth and other interested members. The kit components ensure the timely delivery of ICT skills and services to rural communities. The plastic, square-shaped bag acts as the kit container while the laptop serves as the main device to provide information for the training of the targeted youth. The panel and solar charger serve as the main source of energy.

➜ www.logelproject.org

Agricultural mini-dramas

Use the broadcast power of radio, the entertainment factor of radio dramas and the interactive element of SMS polls – this approach is an active way to engage rural listeners on a variety of agricultural issues. It is also a way of soliciting and tracking their feedback from the furthest reaches of mobile and radio coverage. A set of 30 episodes (each of which lasts for five minutes) are accompanied by narrative scripts for broadcasters to set the stage for messages and topics. Listeners are invited to answer a poll or quiz at the end of each episode by means of a free SMS service. The extensive reach of radio and the power of mobile technology for interactivity makes it possible to collect information from places that would be difficult to visit in person.

➜ http://goo.gl/WdMFky

Web 2.0 tools for fundraising drives

Web 2.0 technology makes it easier to use web-based tools to connect with larger groups of people via social networks. Since it facilitates creating and sharing content, and then organising and resuing it, Web 2.0 is the ideal tool for conducting successful online drives. This tool would be especially useful in rural areas, where ICT skills can help transform information into opportunities. The Kikandwa Rural Communities Development Organization in Uganda hopes this initiative will provide rural areas with the basic practical key concept to increase online visibility and build reliable online communities.

➜ www.krcdevorg.weebly.com

Tech hubs

What exactly is a tech hub? What kinds of activity take place in tech hubs? And what kind of agricultural solutions can tech hubs provide? As a network organisation, AfriLabs believes that by working together individual labs can greatly improve their chances of success, of generating more success stories and creating better opportunities for their members. Tech hubs need to collaborate and exchange experiences so they can answer the questions like the ones above. By creating a network of hubs, individual hubs can learn from each other, share best practices and help new organisations emerge. The AfriLabs network consists of 20 hubs and labs spread across the African continent.

➜ http://afrilabs.com

Web 2.0 and social media

Technological innovation is taking place at a breathtaking pace. Simple, open-source and internet-based applications and services designed to enhance online collaboration are now available to the wider public at little or no cost at all. These new online technologies, which are now becoming increasingly familiar to a larger audience as Web 2.0 and social media applications, have made it possible for people to collaborate and subsequently create, share and publish information. Web 2.0 technologies are enabling organisations to increase participation to and from the grassroots. They also facilitate information exchange, knowledge sharing and communication among stakeholders.

➜ www.futuristic.co.ke

Living Labs

Supported by the European Commission and the African Union Commission, IST-Africa has taken a leadership position in promoting the adoption of 'collaborative open innovation and Living Labs methodologies' to support socio-economic development in Africa. The Livings Labs methodology or framework relies on the principle of broad collaboration between relevant stakeholders. It facilitates this collaboration with a view to co-design or co-create new products, services, processes, business models and even government policies. Living Labs refers to this process as user-driven innovation in real-life settings.

➜ http://goo.gl/hurgq9

tech4farmers

A small team at tech4farmers has been working on a big idea. Accessing the market prices of agricultural products in real time, selling food items online and getting industry insights still remains a major challenge for most farmers, traders, consumers and policy makers in sub-Saharan Africa. The tech4farmers team has been working on a commodity exchange to provide a viable solution to these challenges. Most of the people in sub-Saharan Africa are still employed in informal sectors such as farming. That's why open initiatives like tech4farmers are extremely useful services for these farmers, because they promote sustainable agriculture by leveraging innovative uses of ICT technologies such as mobile phones.

➜ www.tech4farmers.com

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