# ICT in Agriculture

Second biannual ICT in Agriculture Newsletter from the World Bank!

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## Newsletter Contents
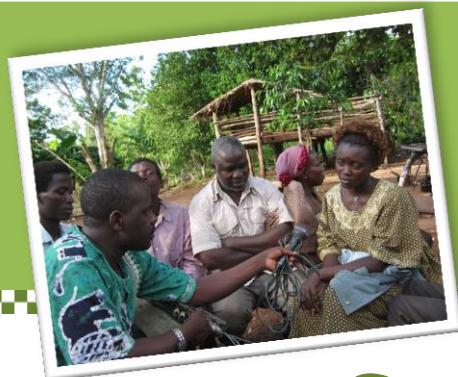
## Overview: Since the last newsletter

This is the second newsletter on ICT in agriculture from the ICT in Agriculture Task Force, whose members are part of the Agriculture and Rural Development Department (ARD), the ICT Sector Unit (TWICT), and regional offices at the World Bank. Newsletters will be sent on a biannual basis. Purposed to summarize activities and trends in the sector, the newsletter will provide an overview of recent events, conferences, and website stories and updates. Each newsletter also highlights a World Bank project that uses ICT in agriculture.

Over the past couple of months, the ARD and ICT sector units have been working on two main themes; the first one being significant research on the data collection and M&E tools applicable to various agricultural ICT sector projects. This will lead to a publication and a database of these tools and methods as well as highlighting some innovative applications of ICT's. A second area of focus has been e-extension. National governments are starting to successfully incorporate digital methods into agricultural extension service programs to increase productivity of farmers and outreach of extension workers.

Read the newsletter for an overview of our previous and upcoming activities. A list of relevant resources follows on the last page.

### How cell phones are fighting poverty in Latin America

**Alex Counts**, the President and CEO of Grameen Foundation, "One of the things we know is that there is a tremendous amount of knowledge about what works in terms of **farming and having a sustainable productive farm**(…) But that information never really gets to the farmers (…) **If you load a mobile phone with all of these tips and information about best practices in agriculture and then train one farmer how to use it, we found adoption of good farming practices goes up very quickly and their income goes way up.**" (November 28, 2012)

# Conferences and Events

Learn more on how the World Bank is forging partnerships, collaborating, and sharing knowledge through learning events and workshops.

**29th of October to the 1st November 2012: Punta del Este, Uruguay**
**GCARD2: Foresight and Partnership for innovation and impact on smallholder livelihoods**

*Purpose and learning*: The Second Global Conference on Agricultural Research for Development (GCARD2), organized by GFAR in partnership with the CGIAR and the Government of Uruguay, gathered 658 participants in Uruguay from 101 countries, including Ministers from the region and with over 1,000 people joining us on-line, to move the transformation of agricultural research for development (AR4D) process forward. The GCARD2 has specifically explored the practical implications of partnership and pathways to impact around the themes addressed by the new CGIAR Research Programs, helping CRP leaders to now reshape their programs to meet the needs and expectations of partners. This has led to a range of new commitments to partnership, capacity development and foresight in the CGIAR.

*For more details*: *http://www.egfar.org/gcard-2012*

**October 2012: Washington DC**
**Expert Consultation on the G8 New Alliance for Food Security and Nutrition ICT Extension Challenge**

*Purpose and Learning*: The G8 has announced the establishment of an ICT Innovation Challenge Fund to improve extension and information systems for smallholder farmers, farmer organizations and agribusinesses enabling them to make informed and effective decisions about technology adoption by harnessing developments in ICT platforms. USAID invited participants from the community of thought leaders and practitioners related to innovative extension services in the public and private sectors to provide advice related to the development of Window 1 of the ICT Extension Challenge.

*For more details*: *https://communities.usaidallnet.gov/ictforag/node/335*

**October 2012: Cape Town, South Africa**
**Innovation Africa: Official Summit for Education, ICT, Science and Technology, Research and Development**

*Purpose and Learning:* The purpose of these meetings was to establish greater public-private partnerships in education, science and research in sub-Saharan Africa. There were over 600 pre-schedules roundtable meetings with government ministries, universities, South African FET's, and provincial departments of education. Exhibition spaces and meeting areas for companies to present their leading technologies and innovations were utilized during this times.

*For more details: http://africanbrains.net/ia/innovation-africa-summit-2012-post-event-report/*

**11-12 April 2012: Bangkok, Thailand**
**Workshop on Climate Smart Agriculture in Asia: Research and Development Priorities**

*Purpose and Learning:* The Challenge for Climate Smart Agriculture -Faced with growing problems of food security and climate change, agriculture must become more productive, more resilient and more climate friendly. Best options being implemented to build climate smart agriculture are many but gaps remain. Drought and flood tolerant varieties of crops, adapted livestock and fish, weather forecasts, ICT based agro-advisories, weather based insurance, water management practices, conservation tillage, soil, and agroforestry for carbon sequestration, precision fertilizers, adapted mechanization, seed and fodder banks, are some of the best options and practices in use. The meeting in Bangkok built on the momentum created by the earlier meetings and expanded discussions on climate smart agricultural research and development to the whole of South Asia and South East Asia.

*For more details:* http://www.apaari.org/events/ccws12.html

# Upcoming Events

**13-15 December 2012: Thimphu, Bhutan**
**Regional Consultation on Collective Actions for Opening Access to Agricultural Information and Knowledge in the Asia-Pacific Region**
*Purpose:*
Generating and opening access to relevant and useful information for smallholder farmers and producers and small rural entrepreneurs engaged in agriculture related businesses and livelihoods in the Asia-Pacific Region needs high attention by all actors in agricultural development in the region. This expert consultation is jointly organized by APAARI, GFAR, FAO, SAARC Agriculture Center and the Council for Renewable Natural Resources Research of Bhutan (CoRRB) with the collaboration of Information and Communication Services (ICS) of the Ministry of Agriculture and Forests, the Royal Government of Bhutan.
*For more detailed information:*
http://www.apaari.org/events/consult_icm_bhutan2012.html

**March 18-21: Accra, Ghana**
**Catholic Relief Services 5th Annual Information and Communication for Technology Development (ICT4D) Conference**
*Purpose:* This event will focus on mobile services that empower vulnerable communities, inviting government practitioners, NGOs, and service providers to share experiences, knowledge, and learn about the types of digital tools available to achieve development goals. The event provides hands-on experience and networking opportunities with software and application developers. The World Bank sponsored this event last year, and will participate and sponsor it again this year. A follow-up event will be held at the World Bank later in March, focusing specifically on the tools for ICT-enabled data collection and monitoring and evaluation. Please stay tuned for further details on both of these events.

*For more detailed information:* http://www.crsprogramquality.org/ict4d-2013/

**May 13-17, 2013: Geneva, Switzerland**
**World Summit on the Information Society**
*Purpose:* The World Summit on the Information Society Forum 2013 represents the world's largest annual gathering of the 'ICT for development' community. This forum will provide structured opportunities to network, learn and participate in multi-stakeholder discussions and consultations on WSIS implementation. This event builds upon the tradition of annual WSIS May meetings, and its format is the result of open consultations with all WSIS Stakeholders. The agenda and program of the WSIS Forum is built on the basis of official submissions received during the Open Consultation Process.

*For more detailed information:* http://www.itu.int/wsis/implementation/2013/forum/index.html

# e-Forums with FAO & e-agriculture.org

A new way of sharing information and generating knowledge, the World Bank in partnership with FAO and the e-agriculture community has and will continue to host e-forums on ICT in agriculture, with participation open to all who are interested.

**Details on the sixth e-forum and summary from the fifth e-forum will be posted on the website soon!**

## FORUM THREE: ICT for Data Collection, Monitoring and Evaluation, 11-22 June 2012

**Experience:** New ICT tools such as mobile phones, GIS, repositories, and a variety of software application are making data collection and M&E activities easier and less expensive to implement. This forum explored how these tools can be used, along with the challenges associated.

**Subject Matter Experts: Chris Reichart** (CBO, Zerion Software Inc., creators of iformbuilder), **Laura Walker Hudson** (CEO, FrontlineSMS), **Takayuki Higawa** (Natural Resources Management officer, FAO Investment Centre), **Sean Paavo Krepp** (Uganda Country Director & Community Knowledge Worker (CKW) Program Manager, Grameen Foundation), **O.R. Dashevsky** (Solution Architect, Catholic Relief Services)

**Link to the summary and discussion:** http://www.e-agriculture.org/content/policy-brief-ict-data-collection-and-monitoring-and-evaluation-ict-agriculture-sourcebook-fo

## FORUM FOUR: Using ICT to Enable Agricultural innovation Systems for Smallholders, 17-28 September 2012

**Experience:** Information and Communication Technologies (ICTs) can expand communication, cooperation, and ultimately innovation among the wide array of actors in agriculture. Building on Module 6 of the "ICT in Agriculture e-Sourcebook", this forum explored how ICT can improve the concepts and operations discussed in the Agricultural Innovation Systems Sourcebook.

**Subject Matter Experts: Laura Drewett** (Esoko), **Aparajita Goyal** (World Bank), **Bruce Kisitu** (KIVA Agro Supplies Ltd), **Ajit Maru** (GFAR), **Karin Nichterlein** (Research and Extension Branch, FAO), **Paul Nyende** (AgriNet Uganda Ltd), **Enrica Porcari** (CGIAR), **R. Saravanan** (GFRAS)

**Link to the summary and discussion:** http://www.e-agriculture.org/content/policy-brief-using-ict-enable-agricultural-innovation-systems-smallholders-ict-agriculture-s

## The World Bank Feature Story:
### Ghana adopts e-extension service to boost agriculture productivity

The World Bank West Africa Agricultural Productivity Program (WAAPP) is expected to help achieve significant growth in agricultural output to fight against food insecurity and poverty, and ultimately reach the MDGs, in the ECOWAS region. The project aims to generate and accelerate adoption of improved technologies in the top priority agricultural commodities in the participating countries that are aligned with the sub-regional priorities defined by the ECOWAS Agricultural Policy.

 As part of its effort to promote productivity in agriculture within West Africa, the WAAPP  is developing an effective demand driven national electronic extension service in Ghana in collaboration with the Ministry of Food and Agriculture (MOFA) and the Council of Scientific and Industrial  Research (CSIR). The aim is to develop a robust, affordable, easy to use, integrated and accessible system that will improve welfare of the farmers through effective participation, adoption of best practices, new technologies, information sourcing and utilization. Ghana has some 2,600 agricultural extension staff working with the country's over 4-million farmers. This translates to a ratio of one extension agent to 1,700 farmers, which falls short of the Food and Agricultural Organization standard of 1: 1,000. Ghana ranks among leading countries in Sub-Sahara Africa in the use of computers and internet services, with more than six percent of the population having access to the internet.

The e-extension program has two main components:

> The first component is a comprehensive e-knowledge management website where the content is created and updated by the scientific community, agricultural experts and published on the portal for users like field officers, Farmer based organizations, NGOs, researchers and policy makers. This web based platform will contain comprehensive agronomic information on various crops and livestock, and will allow knowledge managers to blog and share research content. The website allows for video publishing of best practices and agricultural information with links to other valuable sites.

> The second component involves transmitting the content from the knowledge management portal to smart phone enabled extension officers in the field, and from there to the end users-the farmers via voice and SMS. The IVR and audio component provides an opportunity for time sensitive, critical valuable content to be delivered at any time to the farmer in a local voice dialect on the farmer's mobile phone. The farmer also has the option to contact the nearest extension officer or call center for further expert support. This would involve the establishment of a call center to handle farmer queries and offer effective response within the shortest possible time. There would also be regional e-labs that would be expected to help develop extension officers and farmer's e-learning skills.

Ghana is about to launch the electronic agriculture extension project in 50 out of its 178 district assemblies using six of its local dialects by the end of the year. Emmanuel Odame, a director with the Department of Agriculture Extension Services of the Ministry of Food and Agriculture, said the e-extension system would offer key extension officers the opportunity to use the internet and mobile phones to give quality advisory service to farmers in every part of the country to improve agriculture productivity. To take advantage of these Information and Communication Technologies (ICTs), Odame said the department was setting up e- extension services within the ministry to enhance qualitative extension service delivery to farmers and other stakeholders. "We as a department of the ministry of food and agriculture are positioning ourselves to incorporate ICT into the traditional extension methods we are currently practicing," he said. "The technology we are adopting in Ghana is not too complicated to follow, or too risky to try within limited resources of farmers and other stakeholders since most of them already have access to mobile phones and internet services," he said.

For more information, please visit: http://www.e-extension.gov.gh/

# From the Task Force

The ICT in Agriculture Task Force is an internal World Bank team with colleagues from AES, TWICT, and the regional units. Representatives from each of these units meet 2-3 times per year to discuss ICT in agriculture projects and investments and to share challenges and knowledge from working in the field. The team also functions as a steering committee, discussing what types of activities, analytical pieces, and events would be most useful to staff working in this area. The first meeting was held in February 2012, and consisted of introductions and overviews of World Bank projects in ICT and agriculture. The task force also decided to focus on activities including the generation of training materials, continuation of regional roadshows, and development of a roster of companies and agencies working in this niche.

The next meeting is set for the end of December 2013. The task force will select two to three strategic operations in each region to focus on in a couple of months. Some of these will include regional agricultural productivity programs in the Africa region, area-based development programs in the Middle East and North Africa region and rural productive alliances in the Latin America and Caribbean region.

## Website Highlights

### Featured Applications

Coders4Africa
Biometrics in India
Kilimo Salama

### Sustainable Solutions

Geographic Info. Systems
Talking Book
Digital Green
FrontlineSMS

### Research and Impact

Mobile ARD apps
Video learning
Mobile phones
Market performance

**RESOURCES**

ICT in Agriculture Sourcebook (2011) and website

www.ictinagriculture.org

Agriculture Innovation Systems Investment Sourcebook

www.worldbank/ard/ais

What the website offers:

http://screencast-o-matic.com/watch/clnFYFayZ

m-ARD Report (ICT Sector Unit & Intel, 2012)

http://bit.ly/GR9qrB

Agriculture & FAO online community (e-forums)

www.e-agriculture.org

e-Transform Agriculture Report

http://www.etransformafrica.org/sector/agriculture

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