ICTs in Agriculture Value Chain Development

Plug & Play
Presentation of Service Providers
24–27 November 2015 in Feldafing, Germany

"A unique opportunity to get a broader perspective of the ICT4Ag landscape... and to identify viable areas for investment"

CTA's **Plug & Play – Tech-Dating for Agriculture** is an event usually organised in collaboration with international conferences and workshops to showcase the range of ICTs/mobile platforms developed and being implemented on the field. It gives participants a structured hands-on introduction to emerging ICTs for agriculture.

Purpose
Plug & Play allows innovators to demonstrate their systems in-turns thereby allowing participant to experience as many innovations that is of interest. Participants have the time and opportunity for one-on-one discussion with peers and innovators on the challenges in the field, what is new, what is working, etc. Participants are encouraged to engage with the innovators during the sessions. It is a fantastic opportunity for a valuable and very practical insight into the new technologies and a true hands-on experience with demonstrations by prestigious application providers and experienced practitioners.

Format
Innovations are selected through a competitive process to closely parallel the broader conference theme and streams and to meet the needs of all stakeholder groups. Innovators are given one minute each at the beginning of the event to pitch their innovations to the audience from which participants decide which one to visit. Innovators are then given rooms/booths and allocated time to demonstrate and engage participants on the potentials of their innovations.

Participation
- **ICT innovators:** It offers them the opportunity to demonstrate their solutions to interested clients
- **Agricultural value chain actors:** It enables them to discover the latest ICT platforms for their agricultural activities
- **Investors:** It provides them with a unique platform to identify viable areas for investment
- **Donors:** It presents options for discovering emerging areas for support
- **Policy makers:** It creates the room for understanding and exploring potential areas for policy and decision actions

History
CTA has a unique experience and the track record of organizing Plug & Play events. The first of its kind was organised in Kigali, Rwanda during the 2013 ICT4Ag International Conference. Around 40 different innovations covering almost all components of the agricultural value chain were demonstrated. In July 2014, the second Plug & Play event was staged in Nairobi during the Fin4Ag International Conference. About 15 innovations specific to agricultural finance were featured. The third Plug & Play event was organised in Arusha, Tanzania in December 2014 during an MIS Training Workshop where ICTs/mobile platforms sup-

porting market information systems (MIS) especially data collection, processing, analysis, dissemination as well as agribusiness activities such as tracking field activities, vouchers systems, subsidy programs, etc. were demonstrated.

GIZ Plug & Play
This edition of the Plug & Play is aimed at demonstrating the potentials of ICTs to support agricultural value chain development within the context of the Green Innovation Centre Programme of GIZ. It is designed as a component of a 3-day Workshop on ICTs for Agriculture. A broad range of ICT solutions supporting value chain stakeholders from farmers, through extension service providers, traders among others will be demonstrated.

The Plug & Play Day is being organized by CTA in collaboration with GIZ and it aims at building upon the past experiences in showcasing the potentials of the new ICTs to support agriculture and rural development activities.

For more information on past Plug & Play events, visit the following portals:

1. Plug & Play at ICT4Ag Conference, Kigali Rwanda: http://ict4ag.org/en/agenda/sessions.html

2. Plug & Play at Fin4Ag Conference, Nairobi, Kenya: http://fin4ag.org/en/agenda/plug-and-play-day.html

3. Plug & Play at MIS Workshop, Arusha Tanzania: http://web.archive.org/web/20150110234803/http://www.ifdc.org/training/plug-play-day-at-agricultural-market-information-s.aspx

4. Plug & Play at AFAAS Extension Week, Addis Ababa, Ethiopia: http://www.ict4ras.org/category/apps/

Platform 1.0

Name of ICT Platform: RiceAdvice

Presenter: Kazuki Saito, Agronomist, Africa Rice Center

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URL: http://www.riceadvice.info

Logo:

Portrait:

Description: RiceAdvice is a free Android App for improving livelihoods of rice farmers in Africa. It aims at providing fammers with field-specfic guideline on crop management practices for increasing their rice productivity. Depending on the location, environmental conditions, cropping systems, cropping practices, expected sowing date, available on-farm nutrients, desired yield increase, costs of fertilizer and expected rice market price, a farmer can maximize yield and/or profit. He/she also gets a plot based fertilizer application plan and a short list of good agricultural practices. RiceAdvice is primarily designed for smartphones and tablets.

The App can be used in the field in off-line mode. From time to time, an internet connection is advisable to synchronize data with the central database server. The App will for the time being provided free of charge (donors funding). The deployment stage is that the App is ready for public release. We will continue with adding new functionalities and release updates.

Presenter Bio: Dr. Kazuki Saito is a Principal Scientist at Africa Rice Center (AfricaRice). He is an agronomist and agro-physiologist, with over 10 years of experience working in Asia and Sub-Saharan Africa. He is leading research network on agronomy so-called "Africa-wide Rice Agronomy Task Force" involving 21 member countries in Africa. The task force focuses on yield gap assessment, and development/validation/dissemination of integrated management practices including decision support tools such as RiceAdvice and small-scale machineries. He has authored and co-authored over 60 scientific papers in peer-reviewed journals/book chapters. He received his PhD in Agriculture from Kyoto University, Japan.

Platform 2.0

Name of ICT Platform: mFarms

Presenter: Kwame Adom Bentil, CEO, Image-Ad

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URL: www.mfarms.org
http://rwa.mfarms.org

Logo: **Portrait of Presenter:**

Description: mFarms is a comprehensive web and mobile based communication and management platform for agribusinesses. Geo-referenced value chain actors are linked, they communicate with each other and tract transaction of goods and services among themselves, extension agents provide progress reports using android phone, farmers receive agricultural tips and extension information on their simple mobile phone via SMS or IVR (voice messages). mFarms for the management and monitoring of subsidized agro-input fits into the second event. It enables government to track in real time the distribution of subsidized fertilizers and seeds and identify trouble spot while ensuring the allocated budget and quota are adhered to by importers. Agro-dealers are able to track their stock, purchases, return products, supply in real-time.

Through mFarms, combined solutions are used to make extension services more effective and efficient: extension agents, direct information to farmers and FBO via SMS and voice message; farmers have access to sustainable structured markets even before harvest, subsidized agro-input distribution and monitoring is made efficient and effective. Aggregators and processing companies often are unable to manage the production activities from all the farmers supplying them raw materials. With mfarms for subsidy programm, all stakeholders from importers down to farmers are georeferenced in a centralized database, quota are tracked, distribution is monitored in realtime, stock, sales, supply level are accessible in realtime for government and each agro-dealer has access to its own transactions. mFarms generates revenue through annual subscription, customization, training, credits for SMS and IVR messages pushed. While agro-dealers are charged in Ghana, Rwanda agro-dealers are yet to start paying. The cost is currently covered by donors.

Presenter Bio: Kwame Adom Bentil is a software entrepreneur and the CEO of Image-AD based in Ghana. Image-AD provides solutions that enable organizations to collect and send data with mobile applications over mobile networks. Kwame develops applications and design systems for a variety of sectors. He started his career developing client server applications for private companies such as Coca Cola and other firms who need to collect data from the field. Kwame has more than 14 years experience in mobile and web applications development. He is the lead developer of mFarms used for communication and management of Agric Value Chains with traceability.

Platform 3.0

Name of ICT Platform*: Hello Tractor

Presenter: Jehiel Oliver, Founder and CEO

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Logo: **Portrait of Presenter:**

Description: Hello Tractor, Inc. is an agricultural technology company focused on improving access to affordable farm mechanization for the rural poor. Hello Tractor has developed a low--cost Smart Tractor, embedded with GPS and telematics, which connect the Smart Tractor to our powerful software. Our software collects granular machine location and usage data for value---added services and data analytics. We also pair the Smart Tractor owner/operator with farmers in the vicinity requesting tractor service via SMS. The Smart Tractor is low cost and versatile --- with eight attachments - to serve farmers throughout the production cycle. Trained technicians, with spare parts, provide on---site Smart Tractor repair.

Presenter Bio: Jehiel Oliver is responsible for the overall management of the Hello Tractor team, strategy, and partnerships. He is an Echoing Green Global Fellow and has been honored with numerous awards for his work in social entrepreneurship and poverty alleviation. Prior to Hello Tractor, Jehiel founded Aya Consulting, a boutique consulting and advisory firm. At Aya he was involved in over a half billion dollars in impact investment transactions across ten countries, including conflict zones. Outside of work, Jehiel remains active serving on the board of Shared Interest (treasurer) and H4H, both impact investment funds focused in sub---Saharan Africa. Jehiel began his career in the U.S. investment banking and private equity industries. Jehiel studied economics at both the undergraduate and graduate levels at Florida A&M University and Cornell University, respectively.

Platform 4.0

Name of ICT Platform*: FarmDrive

Presenter: Rita Kimani, Co-founder of FarmDrive

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URL: www.farmdrive.co.ke

Logo: FarmDrive   **Portrait of Presenter:**

Description: FarmDrive expands access to credit to underserved smallholder farmers by providing modern tech-driven credit assessment tools. We have pioneered an innovative way to use data that is generated in smallholder farmers' value chains for financial inclusion. By harnessing the power of data analytics and mobile technology, we aggregate and analyse pertinent information about smallholder farmers from dynamic traditional and alternate data points - including produce off-takers, agro-dealers and the farmers themselves. We build innovative comprehensive credit profiles used for real-time credit assessment to then serve smallholder farmers through digital financial services.

We apply methods that minimize the perceived lending risk to farmers, and operational costs while increasing the efficiency and operational capacity of financial services providers to meet the hugely unmet demand for credit by farmers. FarmDrive's solution enables farmers to access a range of affordable financial services from our partner financial institutions. Farmers are now able to easily access affordable credit they deserve through their mobile phones when they need it. No more complicated loan processes that often result in rejection.

Presenter Bio: Rita Kimani, co-founder of FarmDrive is a young ambitious changemaker. Her life's work focuses on leveraging technology to enable smallholder farmers in Africa achieve self-sustenance. She holds a First Class Honours in BSc. Computer Science from the University of Nairobi and has proven expertise in conceptualising and designing solutions for emerging economies and fostering scalable innovations.

Platform 5.0

Name of ICT Platform: Mootles

Presenter: Isaiah E. Muchilwa, Innovator-mootles

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URL: http://reload-globe.net/cms/index.php/news/63-phd-student-muchilwa-wins-unikat-ideas-competition-2015

Logo: **Portrait of Presenter:**

Description: Mootles are low cost indicators of residual water in dried foods and feeds. Insufficient dryness is the most critical factor for bacterial and fungal food spoilage in stores and can be avoided through reliable moisture testing. Conventional moisture meters are too expensive and altogether unavailable leaving millions of small-scale farmers around the world guessing whether their crops are "dry-enough" to trade-in or move into stores (or bags). Runaway mycotoxin / aflatoxin levels, especially in produce from developing countries, is indicative of the extent of this casual handling of wet harvests – our foods are spoiling in piles, literally, with severe implications for health, trade and billions of livelihoods.

The functionality of mootles is product independent, rendering them applicable on all types of raw, processed and blended foods (and feeds) – including all the major cereals, legumes, oilseeds, spices, dried meats, vegetables, fruits, pastures, nuts, roots and tubers, mushrooms, insects etc. They are simple, portable and easy to use and maintain. With unit mass production costs of under US$ 5, mootles are upto 100 times cheaper than alternative comparable solutions on the market, and hence ideally suited for large scale "funded-free" distributions among the world's poorest. This intervention outstretches, in value, the conventional food safety-hazard-risk awareness campaigns, by additionally providing "tools-in-the-hand" to catalyse behaviour change and enforce compliance with already defined quality standards at the grassroots (on farms).

Presenter Bio: Isaiah Etemo Muchilwa is a PhD student at the University of Kassel's Department of Agricultural Engineering in Germany, researching technical solutions to mitigate post-harvest aflatoxin contamination of Maize in Kenya. He holds undergraduate and post-graduate qualifications in Production Engineering from Moi University in Kenya, where he is also employed as an Assistant Lecturer at the School of Engineering (currently on study leave). His PhD study is funded through a joint scholarship by the German Academic Exchange Service (DAAD) and the National Commission for Science, Technology and Innovation (NACOSTI) Kenya.

Platform 6.0

Name of ICT Platform: Farm Radio International

Presenter: Kevin Perkins

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Logo:

Portrait of Presenter:

Description:
Farm Radio International, a leading *communication for development* organisation founded in 1979, builds the capacity of radio broadcasters and their development partners to create innovative communication programs that enable widespread citizen expression and learning and achieve practical outcomes in rural livelihoods, agriculture, health and social development.

- **Interactive Radio for Results**: Working with research, development and radio broadcast partners across sub-Saharan Africa and internationally, FRI designs, delivers and evaluates quality interactive communication programming that engages large numbers of citizens, achieving meaningful results and outcomes. FRI has developed a suite of interactive, ICT-enriched program formats to facilitate measurable change in a variety of sectors, including agriculture, nutrition, health, and citizen engagement. FRI's approach is participatory and collaborative, involving citizens and community-based organizations, government, research and extension agents, NGOs and INGOs as well as private sector groups.
- **Innovation:** Innovation is at the heart of FRI's work, e.g. mobile-based technology for cost-free listener interaction and real-time feedback; voice-based mobile services for on-demand content and advisory services; channels for listener follow-up on topics of interest/need; mapping broadcast areas to better evaluate program reach; and enabling community listening groups to share recorded content with broadcasters at the touch of button. Mobile-based innovations have also transformed monitoring and evaluation, permitting rigorous evidence-based reporting to citizens, partners, funders and policymakers alike.

Presenter Bio: Kevin Perkins has been working in the field of international and community development for over 26 years. He joined Farm Radio International as the Executive Director in May 2006, building it from a small Ottawa-based charity to an international development organization with offices in 8 countries. Prior to joining Farm Radio, Kevin was the Director of Programs for Canadian Physicians for Aid and Relief (CPAR) in Toronto. Between 1997 and 2004, Kevin turned his attention to his own Toronto neighbourhood establishing the ACCESS Riverdale Community Loan Fund and leading the Riverdale Community Development Corporation as its first Executive Director. He is the founding Director of the Canada Africa Partnership on AIDS, a Canadian charity that partners with grassroots HIV & AIDS prevention, care and support organizations. He holds a degree in International Development from the University of Toronto, and post-graduate studies in Voluntary Sector Management at the Schulich School of Business at York University.

Platform 7.0

Name of ICT Platform*:* MERGDATA

Presenter: Alloysius Attah, CEO, Farmerline Ltd

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http://farmerline.org/

Logo: MERGDATA   **Portrait of Presenter:**

Description: Farmerline's MERGDATA platform and mobile app enables farmers to receive messages through voice in all local languages and SMS anywhere in the world. The technology does not only bridge the illiteracy barrier but it also reduces the cost of communication and data collection for small-scale farmers and organizations working with them. Through the platform, agric workers can send messages such as weather forecast alert, market prices, new farming techniques, agrochemical applications, and inputs, and financial tips to small-holder farmers and fishermen in order to improve productivity, strengthen the agriculture value chain and increase the incomes of the farmers. These messages can also be sent through SMS to groups of people who can read. The platform allows project officers to interact with farmers in local languages and conveniently monitor the messages sent and received through web dashboard. It also provides the option to reach thousands of farmers and collect data from them at a fraction of the cost of traditional data collection techniques. More than 5000 smallholder farmers and fishermen are benefiting from the web-based mobile communication service offered by Farmerline.

The platform can be used to collect data by using the voice survey feature. It has additional features for data visualization through report generation with summary statistics and charts for a quick insight of data collected. It also has features to export data for further analysis. With Farmerline's technology platform, small-scale farmers most of whom are illiterate can receive agricultural advisory information and providing improved information dissemination platform. As third parties continue to make our services available to farmers, our long term goal is to ensure that the farmers can subscribe to the service by themselves. Currently direct subscriptions have come from groups of fish farmers and maize farmers.

Presenter Bio: Alloysius Attah is the CEO and Co-Founder of Farmerline. At five years old, Alloysius' moved to stay with his late aunt, who was a small-scale farmer in rural Ghana. While staying there, he experienced the challenges small-scale farmers go through to produce food and support their families. Upon making it to college, Alloysius became determined to give back to the people who supported him. In 2013, Alloysius launched Farmerline Ltd in partnership with Emmanuel Owusu Addai in order to support small- scale farmers. Today, the company has reached over 200,000 farmers across 5 countries in Africa. As CEO of Farmerline, Alloysius leads the vision and goals for the organization and focuses his efforts on business development and product design. He has received numerous awards for his work including winning Echoing Green Global Fellowship in 2014 and 2015, the Cordes Fellowship and a finalist: HRM Prince of Wales and Unilever Sustainable Living Young Entrepreneur Award at the Cambridge Institute of Sustainable Leadership (CISL). He is committed to empowering small-scale farmers like his aunt who are facing similar challenges across Africa.

Platform 8.0

Name of ICT Platform: ACE Platform

Presenter: Peter Pemba, IT Manager

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Logo:

Portrait of Presenter:

Description: The electronic ACE Platform consist of 5 independent services which are interlinked and interact with each other. The platform provides farmers, traders, food processors and other stakeholders with access to real time market information, colateral financing, structured trade and formal markets. The 5 systems are namely (1) the trading system which allows buyers or sellers to submit bids and offers respectively with the system sending out notifications through SMS and Emails instantly. A buyer or a seller can accept the bid/offer to generate a formal contract on the system, the contract can then be tracked online until its settlement. The second service is (2) the Bid Volume only (BVO) which is a reverse auction that provides a commodity price discovery tool for big buyers such as the World Food Programme (WFP who only need to specifiy the volume and commodity details they would like to buy without indicating the price. Sellers compete in price until the closing time of the auction. Users can access the BVO in real time through the ACE Android App or the Web. (3) The Warehouse Receipt System is a colateral management and financing tool: Storage Operators manage the commodity deposited into an ACE certified warehouse and issue an electronic Warehouse Receipt (WHR) through the ACE Android App or Web. The WHR can then be used as colateral to get finance from the bank. The system keeps track of storage costs, finance and any other lien against the WHR. (4) ACE has a network of rural trade agents who collect market prices from the major rural markets across Malawi on a weekly basis. These are then uploaded to the Market Information System using the ACE Android App and send out to subscribed users via SMS. Users can subscrobe to receive prices by selecting their preferred commodities and markets.

ACE is currently scaling up the Market Information system (MIS) to become an open-interface nation-wide farmer database. This will give the government and other stakeholders such as development partners, farmer unions and NGOs a chance to track acurate farmer statistics, such as crops grown, household demographics, commodities stored and traded or national market price information. The database will also help track which interventions farmers and other target groups have benefitted from, when multiple actors work in the same area (such as agricultural NGOs, extension services, ACE).

Presenter Bio: Peter Pemba is a self–motivated team builder and highly results oriented. He leads a team of 7 developers in Malawi, India and New Zealand who work on the ACE platform. He is specialized in writing system descriptions, with vast experience in the ICT industry and is a certified code and system flow tester. At ACE he is the responsible IT manager of the ACE platform and provides reliable user support to system users. He has an MCSE and is a Cisco Certified network Engineer and is A+ N+ certified.

Platform 9.0

Name of ICT Platform: Esoko

Presenter: Gordon Kotey Nikoi, Senior Business Advisor

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Logo: trait of Presenter:

Description: Esoko is a for-profit company with a mission to make agriculture a profitable business for smallholder farmers. Though we'll geek out any day about supply chain efficiencies and organizational cost savings, we live for the human part of this work. We love stories of our weather forecasts saving children's lives when their parents know not to send them to school during a flood, of market price information building trust in marriages, and of the right extension information saving the farm – and a farmer's family. Esoko began as TradeNet in 2005, when our CEO travelled to Uganda with the encouragement of FAO to better understand how technology could improve communication with farmers. Seeing that prices were being collected on a national scale but that the rural farmers who needed them didn't have access, TradeNet was born as the technology solution to collect and share market prices via SMS. Later in 2005 TradeNet signed an agreement with USAID's MISTOWA program to adapt the platform for use in a dozen countries. In 2009, we renamed TradeNet to Esoko – the Swahili word "Soko" meaning market, the 'e' representing electronic. Being based in Ghana gave us an ear directly to the market, and we continued to add applications and field services as the years progressed. Esoko naturally grew into a broad set of tools that both businesses and projects can benefit from.

Presenter Bio: Mr. Gordon Nikoi works with Esoko Ghana, a Ghanaian agriculturalist with over 15 years experince working with farmers. As a senior busness advisor, I must make sure that the development of web platforms and mobile applications to disseminate and collect agricultural data to/from smallholder farmers are meanful to the farmer and the client. He is responsible for system set-up for clients, capacity building of client and beneficialries on the best use of the platform, interpretation of alerts and reporting. He is also responsible for assisting in trainings and sensitization workshops. Gordon completed University For Development Studies in Tamale and holds BSc. in Agriculture Technology and currently having an Msc program. He has a rich certificate in Value Chains and Gender issues from CDI - Centre for Development Innovation, Wageningen UR.

Platform 10.0

Name of ICT Platform*:* iCow

Presenter: Susan Stephanou, Founder, CEO and Creative Director

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Logo:

Portrait of Presenter:

Description: iCow was developed by Green Dreams TECH Ltd. It is an SMS-based app that enables farmers' access Agricultural information real-time from a diverse comprehensive content database 24/7 the response is sent through SMS. A farmer can either subscribe to the products where he can receive SMS prompts or he can search the content from the iCow platform using simple USSD Menu.

It is designed to help small scale farmers enhance productivity, increase yields, income hence improve living standards, reduce risks thus meeting Green Dreams TECH Ltd objectives which is to eradicate poverty through educating farmers on best farming practices ,increase food security as well as getting the youth involved in agriculture through the use of Technology.

Presenter Bio: Su Kahumbu Stephanou is a social entrepreneur, founder of Green Dreams tech. Ltd. focused on creating solutions for small scale farmers in Africa. She has extensive experience across the organic value chains from production to consumption, policy and advocacy. She is the creator of the Apps4Africa Award winning app iCow, a mobile application developed to help small scale farmers. Su is a TED Fellow and is spreading her passion through the TED network. Part activist, part musician, part mother, part farmer, part gonna be techie ....through her company Green Dreams TECH Ltd Su plans to "Build a better Africa from the ground up"

Name of ICT Platform*: M4DA/AhadooTec

Presenter: Amanuel Abrha

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Logo: **Portrait of Presenter:**

Description: M4DA (Mobile for Development Agents) is a mobile app for agricultural extension workers with an integrated early warning system, weather information for farmers and best practices for cultivating soil and preserve natural resources as well as to connect with peers and stakeholders and also to interact with ministry and government officials. M4DA works offline as Android app on tablets and synchronizes the content to a web platform (www.csi-platform.com) when connected to the internet and uploads and downloads new contents onto or from the server.

Presenter Bio: Amanuel is a co-founder of AhadooTec ICT Solutions, a technology company based in Addis Ababa, Ethiopia that is specialized in developing mobile and web applications. At AhadooTec he is responsible for managing the overall technical software development activities such as providing technical leadership and enforcement of best practices, introducing new technology tools and innovations, Analysis and Design of Software with APIs for different application ecosystems, Engineering of Requirements from User Stories and etc. Amanuel has a M.Sc. degree in Computer Engineering from the University of Duisburg-Essen in Germany and a B.Sc. degree in Computer Engineering from Kharkov University of Radio Electronics in Ukraine.

Name of ICT Platform: LOOP by Digital Green

Presenter: Aditya Sethi, Deputy Director - Technology, Digital Green

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Logo: **digitalGREEN**   **Portrait of Presenter:**

Description: Digital Green uses an innovative digital platform for community engagement to improve livelihoods of rural communities across South Asia and Sub-Saharan Africa. We partner with local public, private and civil society organizations to build the capacity of rural communities to produce and share participatory localized videos of agricultural best practices. We focus on low cost and effective peer-to-peer learning processes, thus, empowering poor households to increase their productivity in a sustainable manner. Till date, Digital Green has reached more than 650,000 rural community members across over 7,000 villages in nine states in India and parts of Ethiopia, Afghanistan, Niger, and Ghana. We have developed in-house technologies including a management information system for low bandwidth areas, analytics dashboards and a custom video library hosting over 3800 videos in 28 local languages.

Digital Green presents LOOP - a vegetable value-chain intervention to streamline market linkages for smallholder farmers by pooling extension networks and technology to increase farmer incomes. Digital Green leverages its wide network of village-level extension agents and strong technology know-how to address the specific problem most farmers face every day: how to sell their vegetable produce as quickly as possible at the best possible price. Reducing the problem to one of optimization of the aggregation, transport and marketing of vegetables helped build a sustainable solution in an ongoing pilot in Bihar, India, with the potential to scale rapidly. A comprehensive technology stack comprising of a mobile application for transaction entry and accounting, SMS receipts, remote monitoring and IVR feedback line will help manage at scale and increase transparency. In the process, we create a feedback loop to inform market driven content for our video-enabled extension approach, building marketing skills for extension agents and enabling farmers to make more informed decisions.

Presenter Bio: Aditya Sethi is a computer engineer striving to bridge the rural digital divide using innovative and appropriate technologies. He heads the technology team at Digital Green strengthening data management systems to improve program performance; and building the next generation of its web, mobile and IVR solutions for social change. Prior to pursuing his passion for ICT4D at Digital Green, he has worked in varied industries from building trading systems at Barclays Capital in Japan, graphic card software at AMD and portfolio analytics solutions at TD Asset Management in Canada. Aditya has a degree in computer engineering with management sciences from the University of Waterloo.

Platform 13.0

Name of ICT Platform: ZNFU e-extension

Presenter: Tibone Moyo

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Logo:

Zambia National Farmers' Union

Portrait of Presenter:

Description: The ZNFU E-Extension is an addition to the already existing ZNFU 4455 SMS Price information system, which has been operating for over eight years, and provides farmers with up-to date market price information for 17 agricultural commodities. The ZNFU E-Extension service is meant to tackle key information and extension constraints by making practical agricultural information available to the farmer. The service uses Unstructured Supplementary Service Data (USSD) and can be accessed via mobile phone by dialing a dedicated short code *880#. It is the Union's approach to embracing new ICTs that will bring about a new, catalytic, and cost-effective agribusiness development based on information. The E-extension system interacts with users by presenting them with menus from which the user has to select a menu option to access various agricultural extension information and tips. Farmers are able to access relevant agricultural information in their area without having to travel or search for this information. More specific, farmers can benefit from vital information about crop field practices and advice on crop specific diseases and pest's identification, prevention/treatment .Tips on livestock production and information on livestock diseases that need vigilance are also part of the information that can be obtained from the platform. In addition, weather data, alerts on disease outbreaks, cases of theft, new legislations, and business opportunities can also be accessed by farmers. The ZNFU E-Extension also makes contact information available for different government extension staff, ZNFU field staff, and other relevant agricultural sector players such as agro dealers and suppliers of inputs thereby, allowing groups of small-scale farmers to locate and contact relevant extension services in their respective areas. With recent developments in the mobile phone industry in Zambia the cell phone usage among small-scale farmers is continually improving. Thus the opportunity to use the mobile phone as a platform to provide extension information, and as a direct communication tool between extension providers and farmers remains immense.

Presenter Bio: Tibone Moyo an energetic, goal driven young female who works as a senior manager under the Member services and Agribusiness department of the Zambia National Farmers' union. With 4 years working experience in the agricultural sector, she manages all the unions' e-services (platforms) and provides support to the research department of the union by providing market information data. Tibone holds a Bachelor's degree in development studies with economics.

Platform 14.0

Name of ICT Platform*: PEAT

Presenter: Robert Strey, AI - Developer

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Logo: **Portrait of Presenter:**

Description: PEATs aim is to supply farmers with simple and intuitive tools to recognize and treat plant pathogens and nutrient deficiencies. PEAT developed an App to provide users worldwide with customized information concerning best practices, information on preventive measures and independent options for action. The App offers the possibility to send pictures of affected plants directly via smartphone and guides through an identification process to determine the plant disease in a very simple manner. All pictures sent via the App are tagged with coordinates. The resulting metadata provides valuable insights into the spatial distribution of cultivated crops and most significant plant diseases e.g. in form of high resolution maps. Today PEAT already provides independent, customized information on possible treatments to more than 10,000 users in Germany. PEATs library contains over 100 plant diseases and can be easily adapted to any region or language. Even text to speech options are available for illiterate users.

This technology may provide knowledge to millions of small farmers worldwide in order to increase yields, save money on pesticides, decrease crop shortfalls and learn from experts all over the world. Furthermore, Institutions and policy makers may be supplied with regionalized real time geodata addressing the spread of diseases and prognosis of crop shortfalls, allowing for fast and targeted policy intervention. Additionally, our tool can be used as an innovative solution for direct communication with small farmers through Push-Messages. Our longterm goal is the automatic classification of plant diseases and nutrient deficiencies as a feature for our users. That is why PEAT focuses on the development of automatic image recognition technologies. PEAT believes that Artificial Intelligence will be among the most important methods to spread knowledge and help farmers worldwide to grow more and use less by providing customized solutions for everybody.

Presenter Bio: Rob is a young scientist developing computer models. His main research interests are image recognition and machine learning. His strong background in development aid grew out of his function as a board member of Green Desert e.V. (www.green-desert.org) for the last 8 years. Parts of his duties were the organization and implementation of agricultural workshops in a vocational training center in New Yundum / The Gambia. Beside this, he spent the last 4 years working for the German Brazilian research project CarBioCial (www.carbiocial.de) funded by BMBF. Rob is also a founding member of PEAT, in here he is responsible for server infrastructure, image recognition models, geodata analysis and machine learning. He holds a Diploma in Geography / Soil Science / Geobotanics of Leibniz University Hannover.

Platform 15.0

Name of ICT Platform*:* myAgro

Presenter: Jessica Dittmar, PhD

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Logo:

Portrait of Presenter:

Description: myAgro is a nonprofit social enterprise that enables smallholder farmers to use their mobile phones to pay on layaway for high quality inputs (seeds, fertilizer) and agricultural training. These investments allow farmers to produce 50-100% more food each season, significantly improving the food security of farm families and helping them move out of poverty.

Worldwide the annual need for smallholder financing is $450 billion and only 3% is currently being met. myAgro's unique mobile layaway platform allows farmers to save their funds in small increments, whenever they have cash available, using their mobile phones. myAgro's system is a smart twist on how people in developing countries buy "airtime" for their cell phones: just as farmers go to their village shop to buy scratch cards for pre-paid phone minutes, they can now buy myAgro cards and layaway $1 to $50 to purchase seed and fertilizer during the planting season. myAgro is the only organization globally that is implementing a mobile layaway approach to serving smallholder farmers. Since launching in 2012, myAgro serves 10,000 farmers and is on track to scale rapidly in the next few years.

Presenter Bio: Jessica is the agriculture specialist within myAgro's innovations team. She is responsible for M&E, agricultural trainings and planting. She leads all agricultural research and development, and designs new agricultural product packages. She holds a PhD in Soil-Plant-Interface Science from ETH Zurich in Switzerland. Jessica worked as a Post-Doc at Stanford University and consulted for several institutions in developing countries, where she became passionate about alleviating poverty and hunger through increasing smallholder productivity using social business and human-centered design.

Platform 16.0

Name of ICT Platform: SAP Rural Sourcing Management

Presenter: Christian Merz

Contact: christian.merz@sap.com

URL: http://www.sap.com

Logo: **Portrait of Presenter:**

Description: SAP Rural Sourcing Management is an integrated, cloud based solution combining mobile and desktop access to track produce from farm to factory. It is specifically designed for supporting agricultural sourcing in rural areas from smallholder farms, farm groups and cooperatives in order to increase productivity and improve community's livelihoods by providing transparency on the supply chain and their actors.
The solution enables collecting electronic data from farmers even if they are located in the remotest parts of rural Africa and supports a sustainable and traceable supply chain. SAP
Rural Sourcing Management captures detailed data of single bags, farmers, processing batches or truck loads up to the weighing bridge of warehouses. Through the introduction of mobile business applications, farmer groups and cooperatives can run their business in a structured, effective and efficient way by getting rid of an error prone, time and effort consuming paper based administration.

Specific functionalities within the system include farmer registration, price broadcast to buying facilitators and farmers, buying and grading of farmer deliveries, electronic advances and payments, loading and off-loading, SMS notification panels, a device synchronization monitor, transactional analytics and GIS-Backdrop (Geographical Information System).

Presenter Bio: Christian Merz manages SAP's *Mobile Development* unit in Karlsruhe, Germany. He directs a group of researchers that investigates how mobile technologies and related business applications support the inclusion of informal economies. The portfolio comprises publicly and corporate funded interventions to establish sustainable business and technology models for socio economic development in emerging countries. He is responsible for SAP's involvement in PPP's focusing on IT supported smallholder farmer groups in agricultural value chains.

In addition

Name of ICT Platform: KTBL planning data services

Presenter: Daniel Martini, Team Datenbanken und Wissenstechnologien, Kuratorium für Technik und Bauwesen in der Landwirtschaft e.V.

Contact: d.martini@ktbl.de

URL: www.ktbl.de

Logo: **Portrait of Presenter:**

Description: KTBL is a registered association in Germany with a staff of approximately 80 people and its main offices in Darmstadt. KTBL is promoted by the German Federal Ministry of Food, Agriculture and Consumer Protection. Among KTBL's 400 members are agriculturalists, business people, consultants, public administrators and scientists, who all share the goal of enabling the agricultural sector and rural areas to benefit from technological advances. The KTBL's mandate is knowledge transfer of scientific findings into agricultural practice. Apart from printed publications containing planning and decision support data for farmers, consultants and administration, focus is increasingly leaning towards internet based information provision. With increasing value attributed to information, technologies of data exchange and information and knowledge management in agriculture have become a major field of activity for KTBL. It has been or is active in several working groups on agricultural data and information capture and management – recently e. g. in Project Group 9 of the Agricultural Electronics Foundation (AEF). KTBL collaborates with the agricultural information management standards group at FAO on the AGROVOC agricultural thesaurus and is active in or in contact with a number of projects dealing with semantics and ontologies in the food and agricultural sector.

KTBL has started providing planning and decision support data through service interfaces following linked open data principles, thus enabling the potential to link-up and interoperate with other data sources. Being extremely lightweight, these interfaces can be used even across poor internet links to integrate KTBL planning data into arbitrary software applications, be it smartphone apps for special purposes like production or investment planning or full-fledged general-purpose farm management information systems.

Presenter Bio: Daniel Martini has studied agricultural sciences at the University of Hohenheim, Germany. He specialized on soil science. Apart from his knowledge in agriculture, he has a broad background in IT involving a variety of operating systems, geographic information systems, data bases and network and communication technologies. He has worked in a number of projects dealing with aspects of information management in agriculture, especially focusing on how to facilitate data handling taking into account unique requirements of the sector e. g. regarding scalability and flexibility. Within the databases and knowledge technologies team at KTBL, he is conducting conceptual modelling and systems architecture tasks and is responsible for application programming interface implementations to capture as well as to provide data.

Name of ICT Platform: RMLdirect/myRML/KRISHIDOOT

Presenter: Raminder Jit Singh, Account Director // RML

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Logo:

Description:

RML Information Services Pvt. Ltd. (formerly known as Reuters Market Light) is a pioneering and award-winning business offering a bouquet of ICT solutions across the entire agri value chain. With coverage of up to 450 crop varieties from 1300 markets, RML has been the preferred choice for over 1.7 million farmers in 50,000 villages across 18 states in India.

RML's flagship offering is a highly personalized information service for the Indian farming community. Farmers can access this service through **RMLdirect** (via SMS) or through **myRML mobile application**. Tuned to farmers' crop cycle, powerful and actionable information around weather, crop advisory, market rates and news is delivered on farmers' mobile phone every day. The service is available in 9 regional languages and across all operators and all mobile handset types.

Krishidoot, leading information and market place platform for agricultural community, creates an ecosystem to empower farmers with alternate agri marketing channels by directly connecting them with agri enterprises to efficiently engage with each other. The initiative spans across various mediums such as on-ground support, SMS, Voice and Web, making it user-friendly for all stakeholders. Today, Krishidoot is the biggest repository of Farmer Producer Organizations in India.

Leveraging over 6 years of in-depth, specialized and widely regarded experience of running a large scale award-winning ICT service, RML has innovated tools like **R-Edge** (providing commodity pricing data and news) and **RMLpro** (enabling enterprises to view detailed user profiles and communicate with them), thereby offering a strong suite of product offerings for public and private enterprises.

Presenter Bio: Raminder Jit Singh

Account Director with RML. Raminder is a strategy and Business development technocrat with over 34+ years of experience. His academic background includes B.E (Engineering) and post graduation in MBA with specialization in Marketing. He has extensively worked in the areas of Rural marketing, rural community development, running program on rural livelihood, women empowerment and Agri-marketing. Raminder brings in a unique blend of Govt/Corporate/Pvt sector understanding with the ability to lead and drive and specializes in working with corporations, public sector agencies, Govt departments, NGO's in the space of rural community development, private sector, MNC's in the space of Rural agri marketing, International development agencies & stakeholder engagement strategy and in Public-private partnerships.