



PISAgro NEWS

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letter from editor



Dear readers,

After the green revolution, there is a demonstrable need for a new one, that will bring higher income for farmers through more-efficient supply chain management, contribute to "smart" agriculture, and incentivize farmers.

ICT is one of these solutions. With the booming mobile, wireless, and Internet industries, ICT has found a foothold even in poor smallholder farms and in their activities.

In this "ICT in Agriculture" edition we pamper you, our loyal readers, with some interesting articles.

On the headline, Ziv Ragowsky, CEO of 8villages shares with us his insights on ICT vision for Indonesian small holder farmers and how PISAgro could act as catalyst to drive the small holder farmers' ICT adoption.

On Best Practice Column, Manfred Borer of Swisscontact shares his experience in using ICT for Cocoa Traceability. If you want to learn about what it is, find the article on page 8.

On Agri Finance Column, this time, Rick van der Kamp of IFC wrote an article on ICT and Agriculture Finance in page 7.

We are also featuring Syngenta Foundation for Sustainable Agriculture on their experience in developing ICT platform in other countries and Indonesia in page 14.

PISAgro's founder committee recently elected three new board members. We are pleased to welcome them. Find their profiles in the last page.

We hope we pamper you enough!

Enjoy the reading and let us know your feedback via contact@pisagro.org

The Editor

ICT Vision for Indonesian Small Holder Farmers

Ziv Ragowsky
CEO of 8villages

The Significant Impact Of Information And Communication Technology (ICT) In Our Lives And Industry

It would be difficult to imagine our lives without technology.

Beyond our personal life, technology has revolutionized almost every industry over the last few decades, from e-retailing that gave rise to Amazon, Ebay and lately Rocket Internet to RFID chips and bar codes improving brick and mortar retail distribution chains - lowering costs and improving profits. The last few years have given rise to big data, suggesting that we can view our world through a set of interconnected intricacies and statistics and that by collecting enough data from our environment we can create new connections that might reveal new insights improving products and services even further.

As data technology improves further it seems that the opportunities to leverage it to better our lives and improve our work products are endless.

ICT Technologies Usage In Agriculture Industry In More Developed Countries

The opportunities for the use of ICT in the Agriculture industry are as large as in the other industries if not more so. ICT is used the input stage, providing the right fertilizer to the right land, in the growth stage where data is collected by tractors to optimize their work, or used to provide weather insurance to farmers. ICT is also used to make sure farmers monitor their land and increase their yields over time. It is even used to manage irrigation systems making sure that the right amount of water is delivered to the right crops.

A good ICT example is John Deere's usage of sensors on their farming tractors. These sensors help farmers reduce their fuel costs and tractor down time. The data generated by the tractors is communicated via an iPhone app which instructs farmers about which crops to plant, where and when to plough and even which route to take. While helping to increase farmer productivity and ultimately its profits, it also helps John Deere collect information on how farmers use their products allowing them to improve their tractors and ultimately sell more.¹ Weather is another place where big data is playing a part with Monsanto buying Climate Corp for 930 USD Mn² to provide better weather insurance for farmers across the United States.

¹ <http://www.bigdata-startups.com/BigData-startup/john-deere-revolutionizing-farming-big-data/>

² <http://www.forbes.com/sites/bruceupbin/2013/10/02/monsanto-buys-climate-corp-for-930-million/>

The Benefit And Barriers Of ICT To Small Holder Farmers

Small holder farmers in developing countries are different than their cousins in developed countries in multiple ways, starting with the fact that they do not have iPhones. While lacking tractors as well, small holder farmers have multiple needs that can be met by ICT. Small holder farmers in India are already benefitting from Weather based insurance helped by ICT in a big way with more than 3 million of farms being covered.³ Other needs like best practices knowledge, real time answers to questions, pricing data and even ancillary relevant content like nutrition and family health are all areas which farmers lack currently. In order to close those gaps however small holder farmers have to have access to the relevant content. While SMS can be used to deliver some content, farmers would get significant more benefit from data, but for that they would need a good value Android phone, a good data deal from the Mobile Network Operator and quality content service like the ones delivered by 8villages.

Pisagro As Catalyst In Driving Farmer Adoption Of Data Technology With Considerable Impact

Within the framework of PISAgro there is a significant opportunity to deliver data services to Indonesian farmers, empowering them to increase their yields and their livelihoods while enabling PISAgro to scale the efforts of its working groups. In order to do that, it is important to get multiple parties around the table, namely, the Mobile Network Operators (e.g., Smartfren) to enable farmers with affordable access to data, Android phone manufacturers to put in the market a "farmer phone" which could have relevant features (e.g., water resistant) pre-loaded applications at an affordable price – especially with android phones getting to be lower than 500 K Rp – and line up the content for delivering to the farmers.

Creating a full value package to farmers, will encourage them to make an investment, which will provide them with a significant amount of data, creating a good return for them. It will also create a valuable channel for all members of PISAgro to create better relationships and improve communications with their customers and suppliers. Ultimately this channel can be used to deliver multiple products and services to the farmers and their families improving their farming capabilities, livelihoods and ultimately the well-being of their families.



Mockup of LISA application for Android.

³ <http://www.cgap.org/blog/lessons-india-weather-insurance-small-farmers>

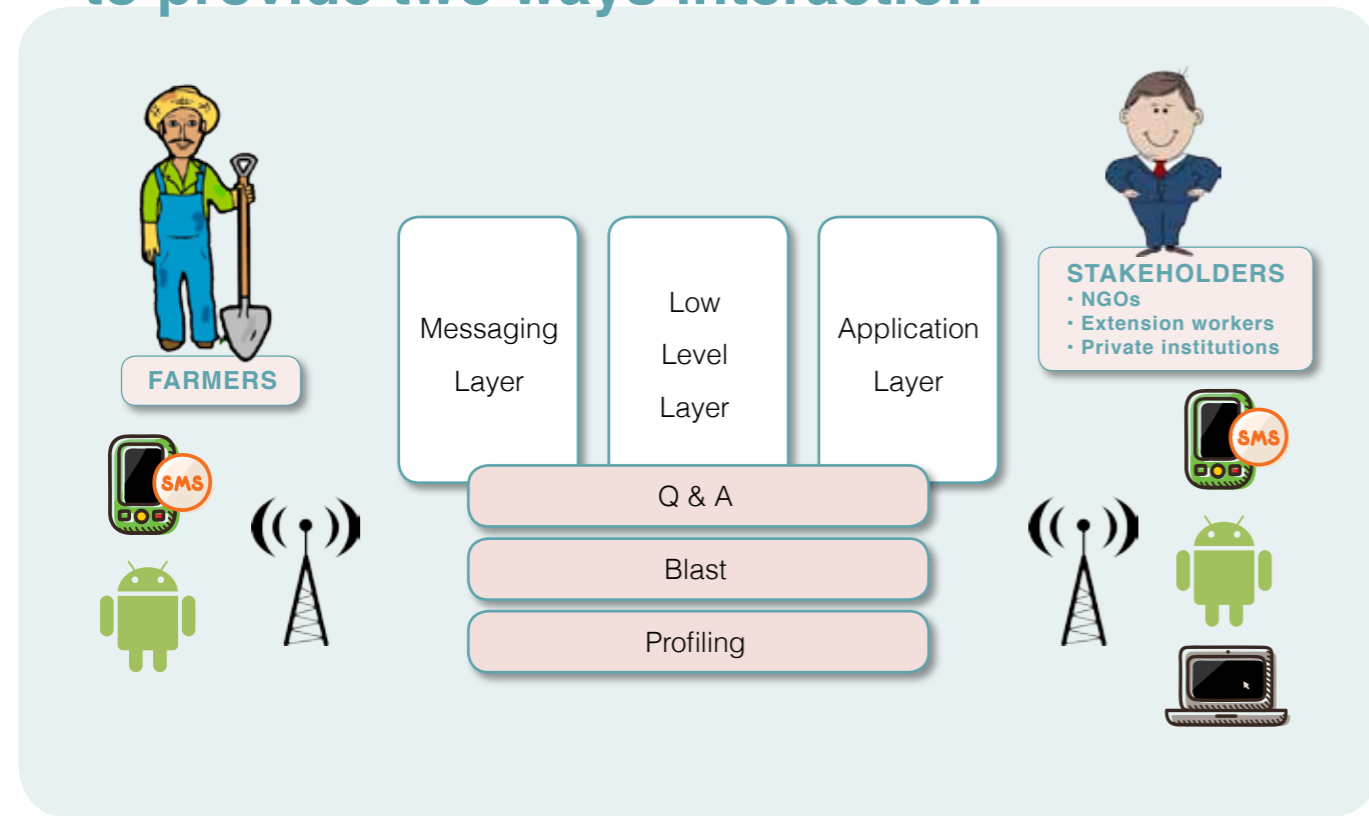
A Solution To Improve Agricultural Productivity

With various obstacles and challenges in the agricultural sector which has been clearly identified, a solution that could assist in the acceleration of the increase in agricultural productivity is to provide answers to every question found the farmer in the field. So that it can happen, that means there needs to be a question and answer forum between farmers and agricultural experts are easily and quickly. Village Information Services (LISA) that has been developed by 8villages since 2012, facilitated by Mercy Corps, may be one answer forum with sms based on the farmers and experts can answer via the internet and everything is archived. The Platform will also allow farmers to consult with expert on Good Agricultural Practices.

Obviously with the speed of access of information to farmers, will support the accelerated achievement of the target of PISAgro itself, which by 2020 target of 20% increase of yield, 20% poverty reduction, 20% emission reduction. By joining the community, example Rice Community, Potatoes Community, Palm Oil Community or others community, farmers can enjoy daily tips on Good Agriculture Practices and enables them to interactively submit questions to experts and retrieve comment on the experts' responses. This service can be accessed does not require internet access.

As an illustration in case of 11 working groups in PISAgro and all farmers gain access to information accurately and easily in one platform (for example) - indeed the 2020 targets will be reached soon.

The 8villages system works both ways to provide two ways interaction



Information Sources and ICT Infrastructures in Indonesia

The issue of information access has become a priority to support Indonesian agribusiness development facing the globalization era. Through the Indonesian Ministry of Agriculture, e-agribusiness was introduced to the public in early 2000. Web portal and mobile phone messages were initiated by the Ministry to serve agribusiness in accessing the most recent agricultural information. The information was freely accessible for farmers at any time. Some telecenters were also developed to support agribusiness located in rural areas.

The Ministry, through Pusdatin, also introduced e-petani. E-petani (e-agriculture) is a portal that designed to facilitate and to be used by agribusiness actors especially farmers and extension workers, traders and government so that they could get information needed in conducting their role as agribusiness actors in their daily activities. It consists of several application systems such as agricultural statistics database, database on agricultural export-import, information of agricultural prices, agricultural multimedia portal, cyber extension portal and integrated cropping calendar.

Meanwhile, the Ministry of Agriculture through Extension and Human Resource Development Agency (BPPSDMP) in 2010 has been implementing *cyber extension* as a new approach in extension activities. Briefly, *cyber extension* is an internet based agricultural extension information system. It is built to support the supply of extension materials as well as agricultural information to the extension workers so that they can facilitate the learning process of agriculture and agribusiness practitioners in rural areas.

Initiatives from private sectors are also sufficient. Just to mention a few, *Agromaret* is a community-based website dedicated for on-line agribusiness. It may involve producers, suppliers, distributors, exporters, importers and general consumers of various agricultural products (food crops and

vegetables, plantations, forest, livestock and fishery's products). *Situs Hijau* is similar one but focusing on horticulture. It is enhanced with various information related with horticulture.

Related with ICT infrastructure, since 2003 the Ministry of Telecommunication and Informatics has developed a policy related with *Universal Service Obligation (USO)*. This is dealing with the provision of telecommunication and informatics access in the nation-wide areas that has not been reached by telecommunication services. It was implemented with involvement of various types of technology such as VSAT, Portable Fixed Satellite (PFS), IP-Based technology, telephony/fax, cellular, radio point to point, etc, and followed with a number of projects to address the ICT gap in rural areas such as Smart Village, Sub-district Internet Service Center (*Pusat Layanan Internet Kecamatan – PLIK*), and *Mobile PLIK*.

Smart Village (*Desa Pinter*) is a solution to address gaps in access to information and education. The project involving 100 villages is carried out by equipping the villages with computers and internet access, so that people can access any information they need.

PLIK is dealing with the provision of public internet access facilities in sub-districts' center to ease the people access to the internet. There is about 5,748 PLIK nowadays (2011). It is accompanied with efforts to develop productive *push content* as well as a number of useful portals. Mobile PLIK is a mobile (moving) internet service provider. It was aimed to serve sub-districts which were not reached by PLIK. There is about 1,907 M-PLIK distributed through out Indonesia.

Extracted from: Information Technology Adoption in Indonesian Agriculture and Agribusiness

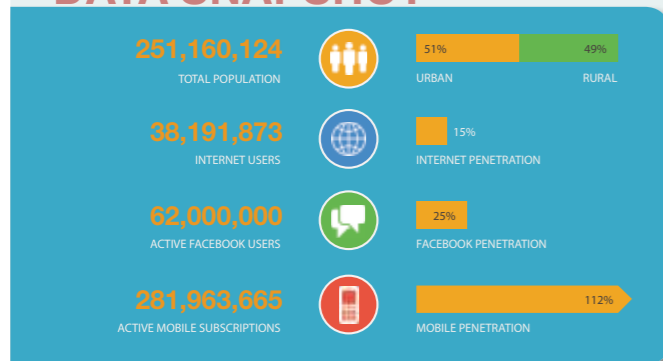
Setyo Pertiwi

Department of Mechanical and Biosystem Engineering Bogor Agricultural University

Do You Know?

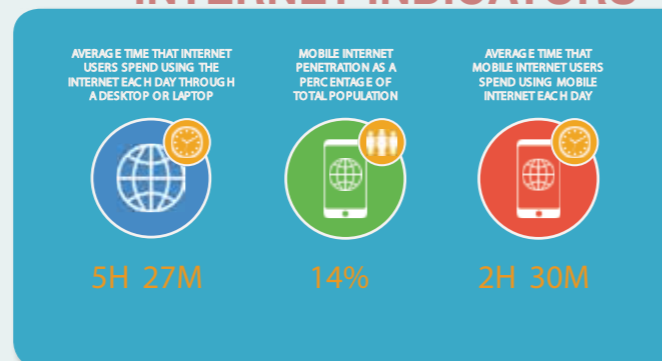
Indonesia - January 2014

DATA SNAPSHOT



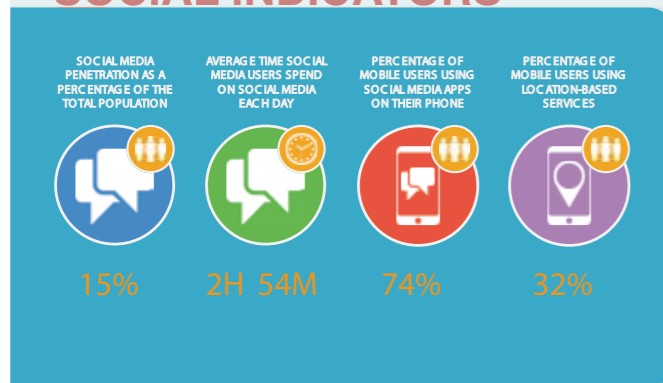
Sources: US Census Bureau, InternetWorldStats, Facebook, ITU

INTERNET INDICATORS



Sources: US Census Bureau, GlobalWebIndex Wave 11

SOCIAL INDICATORS



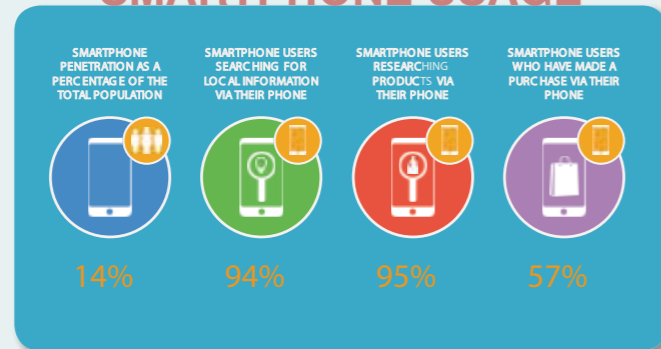
Sources: US Census Bureau, GlobalWebIndex Wave 11

SOCIAL MEDIA USE



Sources: GlobalWebIndex Wave 11. Figure represent percentage of internet users.

SMARTPHONE USAGE



Sources: Google's "Our Mobile Planet" Report

Source: We Are Social, wearesocial.sg@wearesocialsg

ICT and Agricultural Finance

One of the most promising developments in agricultural finance is the new technologies and consumer products in the ICT area. This is not necessarily because they are based on revolutionary new ideas (tablets are simply handheld computers, after all), but more because technological progress and innovation are making these both affordable and relevant for farmers, middlemen, bankers and traders in the sector.

In the ICT world, mobile phone penetration is often used as a proxy to describe a country's level of development. Rural areas are often the last ones to be reached with these technologies, but even there mobile phone ownership is widespread nowadays (by some measures, Indonesia already has more mobile phones than people). Recent data indicate that mobile phone penetration is 84% (assuming small children are included, this implies nearly universal coverage), and the debate is moving towards smartphone penetration instead. For Indonesia, this currently stands at 24%, but is expected to grow to 53% in 2017 (from only 4% in 2010). Again, the rural areas are usually at the tail end of technology adoption, as costs are higher and network providers prioritize urban areas for the roll-out of new services.

For agribusinesses, the roll out of rural data networks and cheaper hardware has allowed them to enter the era of 'big data' too. Traders can now collect and update detailed information from smallholder suppliers, allowing them to provide detailed 'traceability' information to their end buyers. It also helps in keeping track of the impacts of extension work, which is interesting for both traders and organizations involved in smallholder projects (Swisscontact's work in the Indonesian cocoa sector is a great example, as is IFC's work in other regions introducing smallholder data capabilities into the supply chain).

Bringing all this back to agri-finance, there are many ways in which smartphones, tablets, cheap computing power and data networks can impact the agri sector, of which I want to mention two that spring to mind. First, the smallholder data that agribusinesses can collect from their smallholder suppliers can be used very effectively by financial institutions to estimate creditworthiness of a farmer. Annual income, yields, sales channels and variation in production can all be used as input to determine loan size, risk profile and ideal tenure for a farm loan. Given that the lack of risk-related information is the principle obstacle to get more involved in the agri sector, this is a real opportunity

for banks and traders/extension organizations to work together to share relevant data.

Second, the possibility of mobile transactions can be a game changer in the agri sector. If banks no longer have to visit farmers to disburse and collect loans, one of the principle cost elements in their rural business model is eliminated. 'e-money', as it is often referred to, is not without its own problems of course. All participants need to be signed up with the same banks in order to make payments - there are currently no agreed standards for interoperability. In Indonesia, the two best known examples of e-money are services offered by CIMB Niaga and Mandiri. When these (and other banks) converge towards a common standard and become interoperable, this could evolve into a low-cost service that's easy to adopt, and trigger new and more financial services for.



Rick van der Kamp
IFC Operations Officer

CocoaTrace For Sustainable Cocoa Production In Indonesia

The cocoa sector is confronted with major challenges to increase production on less available land to meet global demands.



Factors of particular concern are ageing tree, pests and diseases, declining soil fertility, outdated farming techniques, effects of climate change and farm conversion due to competing crops and urbanization. Nonetheless, the growing demand, including for higher quality products, also offers opportunities for improving the livelihoods of rural communities. Realizing these opportunities, Swisscontact in collaboration with Nestlé and Cargill, as part of the Cocoa Working Group within PISAgro, is implementing the Sustainable Cocoa Production Program (SCPP). Specific activities are aligned with the 20-20-20 goal of PISAgro. SCPP is implemented from 2012-15 with the overarching goals to achieve sustainable cocoa production and contributes to overall cocoa sector development in Indonesia. The program is targeting 60,000 cocoa farmer households with at least 20% women participation to receive skills trainings in farm productivity and quality of cocoa beans comprises of farming good practices and technology transfer system, nutrition and gender sensitivity integration, farmer organization, market access and certification, integrated agri-business financing, and stakeholder management and networking platform.

One of the available tools to foster sustainable cocoa production and yield higher quality cocoa beans is certification and physical traceability of cocoa. Certified/Traceable cocoa is considered to be produced in compliance with sustainability requirements and its premium price can improve the living standards of cocoa farmers. The certification process to be conducted through following rigorous quality standards and regulations for the production and handling of the cocoa produce is significant. New innovations are required to cope with these challenges and to improve the cocoa farmer's household livelihoods without overburden them with administrative measures. SCPP has envisioned the utilization of a web and mobile application to replace the traditional stationary for data collection and monitoring progress. The program perceives that the usage of huge amounts of traditional stationary, pen and paper, is time-consuming and prone to human error that may affect productivity, data quality and accuracy. The program has engaged with Koltiva, an Indonesian Software Start-Up, to develop a Web and Android based application called CocoaTrace.

CocoaTrace is a cutting-edge application used to collect, evaluate, and report relevant data from every smallholder farmer involved in the program. The application includes important information such as farmer and household's demographic data, and every cocoa orchard, the number of cocoa trees, productivity, prevailing pests and diseases, application of best practices, number of trainings, maps containing farm locations, buying stations, and so on. The application is also equipped with various formulas to analyze baseline and survey data and present it in the application dashboard allowing users to quickly read farmer's statistics.

Farmer organizations and supply chain partners are trained in use of the application and are continuously coached to ensure accuracy of data collect from all farmers and tracing cocoa delivered through the supply chain while also taking their feedbacks for an ease use for the famers.

SCPP also established Internal Control System (ICS) using the CocoaTrace with farmer's organization at village, sub-district, and district levels. With the CocoaTrace, the farmer organizations can easily extract data of members' progress and ensure their compliance to the certification and traceability requirements. The database presented by the application can be used by farmer's organization to monitor members' increase productivity, agricultural problems, increase of income from premium price of certified cocoa beans, and implement the ICS.

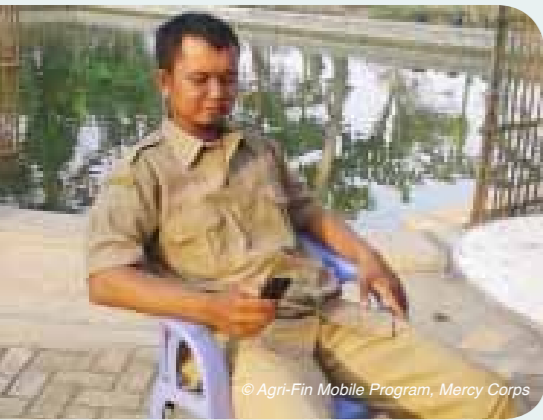
At the demand side, relevant stakeholders of certified and traceable cocoa are provided with login information to access the cocoa farmer profiles, farm database, process, production volumes, and post-harvest handling to ensure total transparency. SCPP is transferring the full utilization of CocoaTrace to farmer's organization and supply chain partners. Simultaneously, evaluation is ongoing to improve the CocoaTrace user interfaces and improve data submission processes.

Increasing efficiency, productivity and sustainability of smallholders cocoa farmers is an area where CocoaTrace can contribute. With the utilization of CocoaTrace in the ICS, farmers will benefit of a higher level of ownership in data produced and offering their cocoa at a premium price – ultimately reimbursing their efforts in improved farm management and full transparency and traceability of cocoa production. The application also can be used for a number of other purposes such as to create a more efficient farmer's business analyses when it applied for a loan, calculate efficient use of agricultural inputs or facilitating audits and program evaluations. When fully integrated with the famer organizations and supply chain partners, the CocoaTrace can help farmers to achieve a sustainable production with a better price to improve their livelihood.



Manfred Borer
Program Director, Swisscontact

The Farmer's Voice



Ramdhani

30 years old
Extension worker from
Payung Sari village, Karawang

"ICT makes my job easier.
I only need to send one sms and it circulates to the group."
"More experts should be involved.
Not only in rice, but also other commodities."
"Coverage area should cover outside Java, such as Papua."



Nurlaela

29 years old
Rice farmer from
Sukaesmi Village, Bogor

"It's easy to use, yet free of charge"
"ICT lets me learn anything I want to know about farming"



Asep Hasanuddin

32 years old
Rice farmer from
Ranggumulia Village, Karawang

"The limited characters of the sms has made some information unclear"
"I personally hope that the experts should reply within 24 hours at the maximum.
At least for some cases, in which, immediate feedbacks are needed.
For example, handling the pest attacks"
"I find the platform very useful so I will continue using it"



Kukuh Ambar Waluyo

Head of Development &
Government Affairs Bayer
Indonesia

How do you utilize ICT in working with smallholders?

ICT serves as a two-way communication tool between Bayer as a private company and farmers as its product customers. The interaction is in the form of blast and broadcast messages related to product knowledge, update on commodities price, product stewardship, Q&A, quiz and survey.

What are the advantages of using it?

ICT allows us to send information to farmers quickly and get feedbacks instantly. Furthermore, ICT makes it possible for us to reach farmers in a broader scope of area. For example, by broadcasting messages, we are able to reach our target customers and have a direct and quick interaction with them.

Does it work well? If not, what are the things which need to be improved?

We tested the platform in our pilot projects between the late of 2013 and early 2014. Basically, what we really expected was the active participation of farmers in Q&A, quizzes, and survey. In fact, only 20% of the farmers were actively participating. However, spreading the information through blast and broadcast messages was successful because they could quickly reach our customers.

After having conducted a survey, we found out that there are two main challenges. First, most Indonesian farmers are conventional farmers in term of utilizing low-mid communication technology. Second, only few farmers are interested to communicate using text message, the rest prefers to directly ask to the field staffs if they have an issue.

Will you still utilize ICT platform in working with farmers?

In the future, we will still be utilizing ICT platform in working with farmers. We will focus on using only blast and broadcast messages. Furthermore, this program is widely available in the country with more affordable local providers.

Actually, farmers get a lot of benefits from actively utilizing ICT in interacting with private companies. Some of our respondents, both active and passive farmers mentioned that the information they receive is very useful. The information could vary from our field activities, product knowledge, crop cultivation, pest and disease handlings, climate, commodity price, to farmer's testimony. The most important thing is to educate and encourage farmers to utilize ICT more effectively through creative programs or activities.



Head of Farmer Groups during LISA Training in Karawang



Female Farmers in Bogor during Training on LISA and Financial Literacy





Ziv Ragowsky
CEO of 8villages

Please explain how the ICT application benefits the smallholder farmers in Indonesia?

ICT allows farmers to benefit from the large amount of relevant knowledge, content and information that is relevant to them. This includes best practices, quick response to threats e.g., new pests etc. Ultimately we would like to provide additional services through ICT, enabling cheaper crop insurance and micro finance by reducing moral hazard risk, and providing pricing information as well to simplify the market structure.

Does the ICT infrastructure support the application?

Yes, the application itself is a front for ICT, i.e., an interface for the farmer to earn from, engage on and ultimately do business from. To make it happen the farmer needs access, either in the form of SMS or better yet, data through android smart phones. To do that we like to work together with the Mobile Network Operators or MNOs in order to ensure that the farmer receives the best experience.

How many farms have been covered?

We are currently covering more than 10 K farmers with a large percentage of women. We have been growing at more than 10% month over month.

Do you think the platform can serve a multi commodities forum such as PISAgro?

Most definitely, while starting with rice we have multiple crops currently on our platform. Our experience with USAID shows that we can deliver aquaculture information as well and are looking at financial literacy and others as additional content opportunities. Ultimately we are building a crop agnostic platform to be able to serve the majority of farmers, with an ability to have crop specific custom features.

What are the challenges faced in delivering the service?

The main challenge is the interface with the Mobile network operators, especially when delivering the product through SMS. Interfacing with them has been difficult as we are currently very small and focus on low revenue customers hence we are not always on high priority for them. The other problem is that farmers are normally older people who are less familiar with technology.

How do you overcome them?

With the MNOs it takes time but we are building the right relationships. We also hope that over time we will build the right partnerships with organizations like PisAgro hoping that together we can have better interactions with the MNOs. As for the demographics with training and especially through use of data we believe that accessing ICT for even old farmers will become more intuitive.

How do you see the application in 5 years from now?

We hope to be the agricultural google/facebook across SEA, improving the lives and livelihoods of farmers within the region in a sustainable manner.

What are your immediate and future plans?

We hope to create a strong ICT framework for PisAgro in Indonesia and with Awba in Myanmar. We will cement the relationship with the MNOs and look to expand exponentially across Indonesia.



Andi Ikhwan
Indonesia Program Coordinator
Agri-Fin Mobile, Mercy Corps

What are the most significant constraints for Indonesian farmers in accessing financial service and how the ICT could address the issues?

In 2012 we conducted a survey to 400 rice, corn, potato and chili farmers. The result shows that small holder farmers face two challenges: access to agricultural information and financial services. Agricultural extension worker are the main source for obtaining information for them. There are 31 million small holder farmers in Indonesia, while there are only 58,000 agricultural extension service workers. Add to it, the limited infrastructure in rural areas. It is difficult for the extension workers to meet regularly with the farmers. At the same time, farmers usually have to travel quite far to access financial services from commercial banks. Recognizing these constraints, Mercy Corps Indonesia cooperates with 8villages to provide mobile agriculture information services and with Bank Andara to provide mobile payment services. The mobile agricultural information services are provided through LISA or Layanan Informasi Desa or Village Information Service. It enables farmers to send questions via text message or SMS which will be answered by experts from Agriculture Faculty of Bogor Agriculture Institute and Ministry of Agriculture. They will also receive daily tips on good agricultural practices. With AndaraLink Mobile, farmers can do bill payments, send money, savings, and pay loan installments through an Android tablet

brought to them by field officers of BPR or cooperatives.

What do you think about the development of ICT infrastructure? And how could the system be improved?

Research shows that around 70% of small holder farmers have mobile phones and mostly are basic phones. With the penetration of Mobile Network Operators reaching all over Indonesia, in principle there should be no constraint in terms of the availability of infrastructure to implement LISA and AndaraLink. LISA service can be accessed by farmers who are users of Telkomsel, Indosat and XL. The Android tablet makes it possible to use SIM cards of all operators, either GSM or CDMA. The main constraint has been the unstable signals. It takes longer than expected to perform transactions using mobile banking.

How many farmers do you work with?

As of end of June 2014, around 12,000 smallholder farmers have registered with LISA service and used AndaraLink service. By end of May 2015, hopefully, around 80,000 small holder farmers in Indonesia will be able to access agricultural information services and financial services through LISA and AndaraLink.

How should PISAgro as a multi commodities forum take advantage from the ICT platform?

Looking at the profile of the small holder farmers who have registered and are using LISA features and AndaraLink service, it can be concluded that LISA platform and AndaraLink can serve all farmers, partners of PISAgro members.

What are the challenges faced in delivering the service? How to address it?

Apart from the issue of signals, which are sometimes unstable, another challenge relates to the design of educational activities to be in line with the profile of the target farmers and the promotion strategy. The education process should not be conducted as a one-off activity. It has

to be carried out continuously, through socialization and promotion.

We do routine group discussions and 1-to-1 interviews with LISA users and micro finance institutions' management regarding LISA and AndaraLink services. We facilitate 8villages and Bank Andara to prepare education, promotion and socialization programs to farmers. In boosting women farmers' access to LISA and AndaraLink, we cooperate with the Agricultural Extension Offices in several districts to carry out training to 10,000 women farmers. We also give training for trainers to 70 female agricultural extension workers. Together with our partner 8villages and Bank Andara, we will continue to refine the platform and develop service features also training materials in line with the continually changing needs of the farmers.

How do you see the application five years from now?

We are confident that the LISA platform and AndaraLink will be developed continuously by our partners both in their features and platform. Currently in cooperation with 8villages, we are planning to develop LISA platform to be available to Android-based devices. Meanwhile, Bank Andara continues to develop the features of AndaraLink to be in line with the needs of the customers.

What are your immediate and future plans?

We will conduct LISA Literacy and Financial Literacy for women farmers using mobile platform. Based on our Gender Integration Assessment, women farmers also run micro businesses, such as selling cell phone credit, running small shops, agricultural input kiosks, etc apart from working on their farm. We are developing financial literacy and business literacy programs through mobile platform, on top of our agricultural information services. It will be available for small holder farmers in eastern part of Indonesia. We will also bundle agricultural loan with mobile payment services for farmers. It will be implemented in cooperation with a commercial bank and an agribusiness company.

Reducing Risk is Serious (ICT) Business

From weather insurance to traceability, smallholders can benefit all round

Mobile phones and other information and communication technology (ICT) have long been vital on large commercial farms.

Increasingly, however, they also are enabling breakthroughs for smallholders.

"Farmers are permanent risk managers, by profession", points out Olga Speckhardt, Head of Global Insurance Solutions at the Syngenta Foundation for Sustainable Agriculture (SFSA). There are many different risks in agriculture, and numerous ways to reduce them.

Five years ago, SFSA launched insurance for smallholders in Kenya. The Foundation called its offer "Kilimo Salama", which means "safe farming" in Kiswahili. "Our starting point was that insurance should become simple, affordable, and relevant to small farmers", says Olga Speckhardt. "Traditional crop insurance relies on expensive farm visits to verify claims. Instead, Kilimo Salama uses automated weather stations and satellite data. Administration and payments all run via mobile phones, to which most Kenyan smallholders have access. This ICT use dramatically reduces administrative costs, enabling low premiums that large numbers of farmers can afford."

Kilimo Salama started by insuring against drought and excess rain, later extending its range of cover to include dairy cows, for example. With some 300,000 farmers subscribing in Kenya and Rwanda, it is now the largest agricultural insurance program in Africa. The scheme has been so successful that this June, SFSA spun off the initiative to form a company, Agriculture and Climate Risk Enterprise Ltd. (ACRE).

While ACRE aims to continue expanding in Africa, the Syngenta Foundation is now exploring possibilities for agricultural insurance elsewhere. "Indonesia is one of the countries with considerable potential for this form of risk management", explains Olga Speckhardt. "As in Africa, we need to engage with all the best partners and develop the right insurance products for local needs. It's early days yet, but I'm certain weather will remain a major topic. In Asia we are also likely to have a strong focus on rice, for example. Our vision is for agricultural insurance to be as common on farms worldwide as fertilizer should be."

Helping food companies to buy from smallholders

Already accessible in Indonesia is another form of SFSA risk management using ICT: Farmforce. This software platform and its website are available in

Bahasa. "We created Farmforce to help smallholders gain access to formal markets", says Robert Berlin. "It does so by making it easier for processors to buy from large numbers of small-scale outgrowers."

Formal markets – such as the export sector – can be lucrative for smallholders, but they require detailed traceability and strict compliance with food safety standards. "Dealing with all the documentation has traditionally been a time-consuming headache", explains Farmforce manager Spencer Morley. "We are now using mobile technology to make traceability and compliance much easier. Our aim is to redefine the relationship between growers, manufacturers and markets, and thus increase the number of potential buyers for smallholder produce."

Farmforce is a 'Software-as-a-Service' solution. It gives cooperatives, agribusinesses and agricultural processors real-time yield forecasts and harvest information, increases traceability and reduces the auditing costs of compliance. Via smartphone, users can, for example, also coordinate the activities of their field staff and farmers, access digital records, ease logistics, or manage cash and input loans.

Helped by co-funding from Switzerland's Secretariat for Economic Affairs, SFSA is currently introducing Farmforce worldwide. The Nigerian company Babban Gona was one of the first clients. It uses the technology to streamline activities and transfer information more efficiently between fields in northern Nigeria and the distant head office. The results have been so good that Babban Gona almost doubled Farmforce coverage between 2013 and 2014. "The platform has greatly improved our operations, making it easier to monitor the growing activities of more than 2000 smallholders", says Senior Associate Chinwe Osuji.

At Guatemala's Adisagua, Manager Caroline Flenn sees other advantages. As a certified member of the farm assurance programme GLOBAL G.A.P., Adisagua must ensure that smallholder suppliers observe rules on quality and pesticide use. "Record-keeping is easier with Farmforce than the conventional system. There is a lower probability of errors", Flenn has quickly discovered. With over 1300 smallholders enrolled, every help that ICT can offer is extremely welcome.



Paul Castle
Communications Manager
Syngenta Foundation for
Sustainable Agriculture

More information on Kilimo Salama is available at www.syngentafoundation.org/index.cfm?pageID=562, and on Farmforce at www.farmforce.com (English) or www.farmforce.com/id (Bahasa Indonesia)

1 | Champion Farmer to train 50 Rubber Smallholder Farmers in West Kalimantan

Champion farmer is a key factor in changing the mindset of smallholder farmers.

Kirana Megatara Group brought a champion farmer all the way from Jambi, Sumatra to West Kalimantan, to train 50 rubber smallholder farmers

in Sintang. Kliwon was a poor small scale farmer who now successfully turned into the head of cooperative, Center for Agricultural and Rural Training. The cooperative has more than 100 members. Kliwon provides training on skills and techniques of rubber cultivation so the smallholder farmers can improve the productivity and the quality of the tapped rubber. The training methodology combines in-class instructions and field demonstrations with the latter being the majority portion.

“Traditional method of farming is not sufficient and farmers must learn to plant high quality seedlings, practice proper tapping with better tapping tools, and handle the end products correctly. I have been enjoying better income by applying good agricultural practices. It is proven to improve the productivity and quality of my rubber trees. I feel compelled to share my experience to other farmers so they could enjoy the same thing as I do.” said Kliwon.



Kliwon and participants of training during field demonstrations



Rubber farmers receive training from Kliwon, champion farmer, in Sintang, West Kalimantan

2 | BRI Disbursed IDR 305 million Working Capital Credit under KKPE scheme for Corn Working Group's Farmers

Forty-eight smallholder farmers in Mojokerto District, East Java, East Java received IDR305 million of working capital credit under the scheme of Credit for Food and Energy Security or KKPE from Bank Rakyat Indonesia (BRI). The farmers are partners of Monsanto and Cargill under PISAgro's Corn Working Group. PISAgro's Corn Working Group tested its first integrated supply chain pilot project with 50 farmers, which covers 163ha land. A mutual agreement among Monsanto, Cargill, BRI and 3 farmers groups (Mojojer, Tani Makmur and Sari Mulyo Farmers Group) was signed in July 2014. The credit was disbursed on July 24, 2014, with an interest rate of 6% per year.

The fundamental problem for the smallholder farmers to increase their productivity and their income is the lack of capital to buy good seeds and fertilizer. On the other hand, the collateral requirements have made it difficult for farmers to access the capital. The difficulty to access the bank credit is reflected in the high lending rates for the agricultural sector that reached an average of 15% per year. KKPE is a government program in the form of investment



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PISAgro's Corn Working Group during the field visit in Mojokerto

loans and working capital loans with low interest rate (6.5% per year) given to farmers, ranchers, fishermen and fish farmers in order to support the government's food security program. The distribution of KKPE loans is still dominated by BRI with a market share of 65.61 percent with total loans of Rp 2.9 trillion in 2013.

In the partnership, Monsanto provides on-farm training to small holder farmers to guarantee good quality yield. Cargill provides post-harvest training and off-takes the produce that meets the quality standard. The risk of credit is then reduced with this kind of partnership.

“The mutual commitment among Monsanto, Cargill, and BRI to improve the livelihoods of farmers provides

assurance to BRI that farmers will pay back their loans at the amount at the due time,” said Hengky Indiarso, Monsanto Indonesia Area Manager in Mojokerto.

Yanto, 44 years old, is one of the farmers from Jrambe Village, Subdistrict of Dlanggu, Mojokerto, who received the credit from BRI. He said: “I am glad that this partnership helps me a lot. All this time, farmers in our village have never been given the opportunity to access credit with reasonable interest. Now, I don't have to worry about not having money to purchase good quality seeds and fertilizers. There's even a guarantee that my corn yield will be purchased at harvest time. I hope Monsanto, Cargill, and BRI will continue their partnership with farmers in our village.”

3

Socialization of Coconut - Corn Intercropping Program to Local Government and Farmers in North Sulawesi



Socialization of Coconut-Corn Intercropping Program
 Left: Arief Susanto, Corporate Affairs Director of PT. Cargill Indonesia presents to the Government of South Minahasa regency (24/06);
 Right: Presentation to the Department of Agriculture and Husbandry of North Sulawesi Province (19/08)

On August 19-20, the provincial government of North Sulawesi through the Agriculture and Animal Husbandry Office held a coordination meeting with all the heads of Agricultural Service at district level to discuss corn and rice production target in 2014 and launched the government's corn planting program in South Minahasa. Both events were attended by Dr. Ir. Hasil Sembiring, M.Sc, the Director of Cereal Crops of Ministry of Agriculture and Bambang Sugiharto, Head of sub-directorate of Corn, Ministry of Agriculture.

In the coordination meeting, Arief Susanto, Corporate Affairs Director of PT. Cargill Indonesia, presented the coconut-corn intercropping program. Previously, on June, 24, 2014 the program was also presented to the Regent of South Minahasa. Cargill is now working with other related stakeholders like Syngenta, Winrock International and local government to prepare the coconut-corn intercropping demo

plot and the training materials for farmers. The coconut-corn intercropping program received positive feedbacks from the local government. The government suggested the program to be done continuously and cover not only South Minahasa, but also other potential areas in the province.

Dr. Ir. Hasil Sembiring, M.Sc, the Director of Cereal Crops of Ministry of Agriculture and the Government of South Minahasa regency during the corn planting program launching (20/08)



Cargill's coconut-corn intercropping program in South Minahasa Regency is developed to address the issues related to smallholder farmers productivity and income improvement, through easy access to high quality and affordable corn seeds and good agriculture practices.

4

Potato Working Group Expands Seeds multiplication to Sempol and Sembalun

PISAgro's Potato Working Group recently expanded its seed multiplication program to new planting areas in Sempol, East Java and Sembalun, West Nusa Tenggara.

In total, the group has planted 5 tons potato seeds in Sempol, East Java and 125 tons in Sembalun, West Nusa Tenggara. When the potatoes are harvested in both areas, the big-sized potatoes (4.5 cms) will be shipped to Indofood's factories for chip stock production. Meanwhile, the small-sized ones (2.5 – 4.5 cms) will be used for seed multiplication.

In 2014, Indofood, leader of the working group, needs at least 32 millions potato seeds to supply its factories. To ensure sufficient supply, Indofood has set seeds multiplication program in new planting areas of North Sulawesi, Lombok, East Java, West Java, and Jambi. However, since the existing local breeders could not supply the expected amount of seeds, the working group is unlikely to achieve the target this year. To solve this issue, Indofood plans to recruit more committed seed breeders to ensure the availability of local seeds.

Seeds Multiplication in Sempol and Sembalun

Farmers Group	Area	Number of Seeds Planted		Hectare of land		Number of Seeds Harvested		Planting Period	Estimated Harvest Time
		Target	Realization	Target	Realization	Target	Estimated Productions		
Jalak Ijo	Sempol, East Java	125 tons	50 tons	50 Ha	20 Ha	300 tons	100 tons	April - July 2014	Sept 2014
Horsela	Sembalun, Lombok	250 tons	200 tons	200 Ha	24 Ha	1000 tons	240 tons	July 2014	Oct 2014
Fajar Dharmia	Sembalun, Lombok	200 tons	50 tons	50 Ha	26 Ha	300 tons	100 tons	July 2014	Oct 2014



A farmer is checking the condition of his potato plants in Sembalun

5 | Rice Working Group Booked 22% Higher Yield in Indramayu District

On the most recent harvest, in July 2014, in the sub-districts of Haurgeulis and Kandang Haur, Indramayu, the farmers of PISAgro Rice Working Group booked 22% higher yield compared to the control groups.

The 500 ha in sub-district of Haurgeulis was harvested in July while 175 ha others in sub-district of Kandang Haur was harvested later in August. The average yield per hectare is 5.5 tons, while the control groups in the district produce 4.9 tons. In 2015, the group aims to plant rice on 40,000 ha land. 20,000 ha will be in West Java while the other 20,000 ha will be in Central and East Java.

6 | BULOG is Ready to Buy Soy at Floor Price

On Thursday, August 21, 2014, Bureau of Logistics (BULOG) expressed its willingness to provide market guarantee for soybean farmers under the partnership with PISAgro's soy working group. Currently, the MoU is being prepared between farmers groups and BULOG in four districts: Indramayu, Grobogan, Nganjuk, and Madiun.

BULOG is ready to buy the yields at IDR7,600/kg as set by the Ministry of Trade. Meanwhile, the market price of soybeans at the farm level ranged from IDR8.200 to IDR8,500/kg per July 2014.

Nurman, BULOG's Head of Non Rice Subdivision, says, according to the regulation, soybean purchased must fulfill the Indonesian National Standard quality (SNI). The SNI requires moisture content of 14%, split kernels of 3%, damaged kernels of 3%, kernels of other colors of 5%, impurity of 2%, and shrivelled kernel of 3%.

Head of the Statistics Bureau of East Java, Hasbullah Sairi quoted by Bisnis Indonesia (09/07/2014): "The forecast shows soybean production in 2014 will be fell by 3,310 tonnes compared to 2013". East Java's share of the national production is 43%.

Sairi further added: "The unfavorable prices caused farmers to be less interested in planting soybeans and switched to other crops."

In addition to linking the farmers to BULOG, the working group is looking into the opportunity to get market guarantee from private industries.

Current status of soybean project in four districts

District	Current Status	Harvest
Indramayu	• In planting progress, 60 farmers planted yellow soybeans on 200 ha land.	September 2014
Nganjuk	• August 2014, 154 farmers planted yellow soybeans on 100 ha land in Rejoso Subdistrict.	September 2014
Madiun	• August 2014, 235 farmers planted yellow soybeans on 100ha land	September 2014
Grobogan	• October-Nov 2014, 10250 farmers will plant yellow soybeans on 5,000ha land in 13 villages in Pulo Kulon District. • Okt-Nov 2014, 425 farmers will plant yellow soybeans on 200 ha land in Pulo Kulon District.	January 2015

welcome new board members

Three new members join PISAgro's board

PISAgro's founder committee elected three new board members at its recent meeting on 6 August 2014. The three are international business executives who come from a variety of private-sector backgrounds. "As PISAgro sharpens our focus on improving the lives of small holder farmers in Indonesia, we welcome the addition of these three outstanding new board members," said Franky O. Widjaja, chair of PISAgro's board. "Their global experience and expertise in agribusiness and public-private partnership will strengthen PISAgro's ability to take innovation to scale and increase our impact."



Jean Louis Guillou

Mr. Guillou is Cargill Indonesia's President Director since 2010. He is mainly responsible for Cargill's tropical oil and grains strategy (both up and downstream), mergers and acquisitions, joint ventures and business development.

Mr. Guillou began his career as a Grain & Oilseeds Merchant at Cargill, U.S.A. In 2008-2009, he joined UBS Investment Bank based in Jakarta, Indonesia, where he served as the Head of Indonesian Equity Distribution.

Mr. Guillou is US nationally ranked NCAA Div I/Professional ATP Tour tennis player (ranked top 10 NCAA & top 300 ATP world ranking doubles).

Completed an M.B.A. Thunderbird, The American Graduate School of International Management (Phoenix, AZ). He is a native English and French speaker, and conversational in Spanish and Bahasa Indonesia.

In PISAgro he leads the coconut-corn project intercropping in Amurang, corn project in Mojokerto and Cocoa project in Sepang and Bone.



Daniel Hazman

Mr. Hazman is the Asia Regional Director for IDH, the Sustainable Trade Initiative since 2012. He is responsible in accelerating and transforming sustainable supply chains in sectors like palm oil, pulp & paper, tropical timber, cocoa, coffee, and cotton in Southeast Asia and China. He was previously Sr. Manager of Sustainability for Walmart Stores, Inc. Bentonville, USA where he developed the company's sustainable agriculture strategy international initiatives. Prior to that, Mr. Hazman was the Country Coordinator of Clinton Foundation Health Access Initiative (CHAI) in Indonesia where he assisted the Ministry of Health to improve access to high quality care and treatment for HIV/AIDS patients and develop a national program for infants and children.

Mr. Hazman did an MBA program at Instituto Tecnológico Autónomo de México as a Fulbright Scholar. He is a Board Member in the Cocoa Sustainability Partnership and Church World Service. He speaks fluent Spanish, Portuguese, English, Bahasa Indonesia and Italian. In PISAgro, he is actively involved in palm oil, cocoa, coffee and agri-finance working groups.



Sarvesh Suri

Mr. Suri is IFC's Country Manager in Indonesia since January 2012. He leads IFC's investments and advisory services in the country.

Prior to his current job, Mr. Suri was Special Assistant to IFC Executive Vice President Lars Thunell, supporting him in all aspects of the Corporation's strategy and operations.

From 2005 to 2009, Mr. Suri was a Senior Investment Officer in General Manufacturing and Services as well as the Acting Sector Head for the Forest Products Sector team at IFC HQ. He led a number of complex debt and equity transactions across sectors and regions.

Mr. Suri holds a Post-Graduate Diploma in Business Management from the Indian Institute of Management, Ahmedabad and Bachelor's in Mechanical Engineering from the Delhi University. He is a member of Cohort 4 of IFC's Global Business Leadership Program.

In PISAgro, IFC leads the Agrifinance Working Group.



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