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## Editorial

Technological advances are reaching even the remotest corners of our planet, opening up a whole new world of possibilities for people. Statistically, since 2015 there are more mobile phone connections than people worldwide. Even in the poorest regions of Africa, eight out of ten people use a mobile. Just five years ago it was half the amount. Banking transactions, for example, can now be made with a mobile – no matter where you are or what time it is.

The SDC has realised the enormous potential in these developments and considers its role in making technological innovations accessible for marginalised people in developing countries. That is why the organisation has been providing long-standing support for initiatives to develop digital applications especially designed for smallholder farmers. This opens up major opportunities in rural areas which often lack infrastructure. The SDC's Agri-Fin Mobile project brings together phone companies, insurance companies, banks and information service providers to launch new services for farmers: bank accounts, digital payment options, loans, insurance for and information about producing and marketing agricultural products – all of which can be accessed on a mobile phone regardless of the time or your location. Thanks to this new service, smallholder farmers can market their products better, faster and cheaper. This is a new era for tens of thousands of people who still live more than a day's journey away from the nearest bank.

Tatjana von Steiger, Deputy head of Global Cooperation, SDC

## HOW MOBILES CHANGE SMALLHOLDER FARMERS' LIVES



Farmers can access a wide range of useful information and discover the advantages of digital financial transactions on their mobiles. © Mercy Corps

**The Agri-Fin Mobile project, which the SDC has been funding since 2012, will soon be completed – with some very promising results. Several tens of thousands of smallholder farmers in three different countries have increased their earnings thanks to private service providers taking part in this project. And what do all of the business models developed by Agri-Fin Mobile have in common? The use of mobile phones.**

The fight against poverty is primarily located in the rural world. According to the International Fund for Agricultural Development (IFAD), almost three-quarters of the world's poorest people work in farming. That is why the SDC focuses its efforts on the economic development of smallholder farmers. In the last decade, technological innovation in agriculture has focused on the ever-increasing digitalisation of the means of production (see article on p. 3).

Even in the remotest regions of the Global South, having a mobile phone has become the norm. Although smartphones are still rare, simple first generation mobiles can prove to be very useful.

On this basis, in 2012 the SDC launched its Agri-Fin Mobile project, which is steered by Mercy Corps. Before its expected completion at the end of May 2018, the project's

goal is about to be reached: to encourage 280,000 smallholder farmers in Indonesia, Zimbabwe and Uganda to use their mobile phones on a daily basis to access a range of financial services. To date, around 1,400,000 farmers have benefited from digital banking, which makes their lives easier – by providing simpler access to loans for example. The viability of the Agri-Fin Mobile business models hinges on the involvement of a number of private-sector actors. In each of the three project countries, the SDC and Mercy Corps have been acting as initiator to ensure that the collaborations could become sustainable. "I am confident that the majority of the pilot models will carry on after our involvement has come to an end", says Trey Waters, head of the Agri-Fin Mobile project for Mercy Corps.

# INDONESIA: Loans within reach

Between six and ten tonnes of maize harvested from a hectare of cropland and an annual income that more than doubled in 2016. The smile on Ibu Agustina's face is now a common sight among hundreds of other women farming on the island of Sumbawa, central Indonesia. Launched in 2014, the packet of services designed by Mercy Corps has won over more than 2,500 smallholder farmers to date. "We should reach the 15,000 mark by 2020," calculates Andi Ikhwan, the local Agri-Fin Mobile project officer.

For maize growers, the benefits are quickly apparent: a facilitated loan of 10 million rupee (about CHF 730) per hectare of cropland coupled with farm advisory services and loss-of-earnings insurance in the event of drought or a devastating cyclone. Thanks to a partnership with a domestic bank and a network of rural banks, the loan is made available to farmers before the sowing season, which is enough to pay for all the labour needed to prepare the fields. The loan is repaid automatically based on the harvest six months later; the surplus goes to the farmer. All transactions are recorded on tablets by representatives of the rural banks so as



to ensure maximum transparency. Whether they purchase new cropland or pay for their children to get a higher education, these smallholder farmers are seeing new opportunities open up before them thanks to their increased earnings.

Also benefiting from the project is the company Syngenta, which provides the farmers with seeds and pesticides. Representatives of the agrifood giant walk around the villages offering farmers valuable advice, also available by text message. "That's exactly the spirit of a public-private partnership," explains Ikhwan. "We haven't granted Syngenta exclusivity though. We're open to all agribusinesses."

The goal to increase the proportion of Indonesians with access to formal banking services from 30 to 75% is being led by the president, Joko Widodo, himself. To reach the most rural communities, the key word is 'e-cash', which does away with the need for bank counters. As soon as a mobile phone has been connected to a bank, it acts as a central platform for all manner of transaction, from paying electricity bills to buying household items. Agri-Fin Mobile staff also work together with Indonesia's largest bank to train salespeople in canvassing techniques as part of the project. "The main thing is to get past the villagers' natural mistrust," observes Ikhwan. "And in this area, it is clear that the women get the best results." ■

# ZIMBABWE: Insurance packet that includes funerals

Her mission was to understand the needs of smallholder farmers and to try out various options to best respond to them. With the benefit of four years of hindsight, Mildred Makore, the head of the Agri-Fin Mobile project in Zimbabwe, is convinced to be on the right track. This is the meaning of an 'explorative' project in the true sense of the word. They were able to launch a digital platform providing targeted weather forecasts and farming advice thanks to initial partnerships set up by Agri-Fin Mobile with the Econet Wireless mobile phone company. Farmers could access this information using a code on their mobiles. "The next challenge was to retain these consumers using the advisory services by showing them that high-quality services also have a cost," explains Makore.

In 2015, the EcoFarmer micro-insurance product introduced a packet of services costing one US dollar a month. The Agri-Fin Mobile project convinced the Zimbabwean farmers' union to collaborate with Econet Wireless. EcoFarmer gives farmers practical advice and reductions on a variety of agricultural inputs. They are also insured up to USD 25 against full or partial harvest losses during a serious flood or drought. The amount is paid on their mobile account. And if the insured farmer dies, their family receives up to USD 500 in cash. "This is what makes our insurance packet particularly attractive in a country where funeral costs are often overwhelming," explains Makore.

EcoFarmer has almost 7,000 regular clients at present. On a wider scale, some 20,000 smallholder farmers have paid for their services on a temporary basis. Corn and peanut grower Rindai Makombe is one of them: "For me, the difference was clear. I was able to double my yearly production because I had access to twice the amount of inputs sold at a lower cost." Building on its success in the field, EcoFarmer will soon be offering access to mobile financial services – first for its clients and then for targeted business partners. The recent political turmoil in the country does not worry Makore. "On the contrary, a lot of Zimbabweans have regained some hope and are proving to be interested in trying out the benefits of the services now available on their mobile phones." ■

# UGANDA: Safer transactions

Here is a practical example. In Uganda, the Agri-Fin Mobile project introduces smallholder farmers, buyers and other financial intermediaries to the benefits of 'mobile' money so as to capitalise on – and safeguard – sometimes substantial sums of money. This is the case with TruTrade, a business model developed by a local start-up. Let's look at an avocado producer: He takes his harvest to a decentralised TruTrade branch where his mobile phone account is re-credited with an amount that has previously been agreed by the wholesaler buying the avocados. Now the farmer can go home without fear of attack en route or being robbed at home. The temptation to spend one's earnings unwisely on the way home is also less. "Since we started working with TruTrade, my wife and I make a detailed budget before taking money out," explains Paul Atiko, a soya bean farmer in northern Uganda.

To transform their digital capital into cash, farmers just go to a branch of their mobile



phone operator. "This approach also ensures that transactions are recorded digitally, which helps farmers access other financial services easier," notes Ronald Rwakigumba, the project coordinator in Uganda. In November 2017, almost 4,000 rural households were using TruTrade's services.

An almost identical number of beneficiaries – half of whom are women – have since December 2016 been using SmartMoney, another service to save and transfer virtual money being tested in western Uganda. The

Agri-Fin Mobile project is also supporting the efforts of Ensibuuko, an IT company that has equipped around 70 traditional rural cooperatives (SACCOs) with a financial management software. "A lot of these cooperatives had a bad reputation. By replacing all the red tape with a rigorous and transparent digital management process, farmers are regaining confidence in these organisations," explains Rwakigumba. Today, the sound financial position of the cooperatives allows their members to borrow up to four times the amount they have in savings. ■

## Selecting from the most promising technological innovations

Maximising the impact of activities with limited resources. Like other donors, this is the quandary facing the SDC. And so it jumps at the chance of utilising today's advances in technology that make it possible to distribute valuable new devices to several tens of thousands of people in need. In addition, the SDC works on linking public and private partners to ensure that its initial investment leads to projects becoming self-financing in the long term.

The Agri-Fin Mobile project is an example on more than one count. In fact, there is a vast number of initiatives riding the digitalisation wave in the primary sector. Here you can find anything – from the online interface alerting hotels and restaurants in real time to fish and seafood caught in the ocean by Senegalese fishers, for example, to the

Cropital crowdfunding platform that connects direct investors to smallholder farmers. Using drones to assess the state of croplands 'at a glance' is also becoming widespread. And you can even add genomic and biotechnology experiments to this incomplete list...

The rest is about building on the good projects within this vast market of technological innovation. Because many questions arise. Do the best ideas really meet the actual needs of the farmers? How do you reconcile using 'big data' and artificial intelligence with the comparative lack of knowledge about technology among smallholder farmers? "All of our experiences show that the success of a technological innovation depends on there being people on the ground who can educate the farmers on the new tools that are available," insists Trey Waters, head of the

Agri-Fin Mobile project. Not to mention that any advances in technology remain fragile because they are based on information systems that are fallible. Ultimately, the involvement of local staff is always decisive.

Several experts also point to the frenetic development of services that are not coordinated and their perpetual dependency on public funding. In a recent article on digitising the rural world by the online magazine 'Rural21', researcher Christine Chemnitz wonders about the impact of the huge investments being made by agrifood giants. "What happens if those technologies strengthen the productivity of large-scale farms while small and medium-sized farms are pushed from the market?"

Faced with so many questions, the role of an institution like the SDC has evolved. While

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# Three questions for...



Jim Leandro Cano, 28 years © DR

**The last annual meeting of the Global Forum for Rural Advisory Services (GFRAS) highlighted the role of young people both as beneficiaries and as creators of new types of services for rural communities.**

**What is your position on this?**

If you think about using new technologies for rural advisory services, there is no question that the younger generation is best equipped to understand and adapt to such changes. There is nothing better than young people teaching other young people about the potential of technological innovation. That's because they speak the same language. But let's be objective: in the Philippines, as in other countries,

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the use of new technologies for agricultural production – particularly via mobile phones – remains anecdotal. Many of the pilot projects deserve to be expanded and continued on a long-term basis.

**How likely is it that the use of new technologies can reduce rural-urban migration among young people?**

Such a question presupposes that young people shouldn't leave their village in the first place. I find that too limiting. Given that many young people will in any case leave their rural communities, we have to ask ourselves – what can make them come back? One thing is clear: for there to be technological innovation, it is essential that telecommunications companies invest heavily in infrastructure outside of the towns and cities. And the public authorities should push for this to happen.

**How does YPARD contribute to the reforms in the agricultural sector in practical terms?**

One of the main challenges is to get young people interested in developing technologies, beyond a simple fascination with drones that fly over cropland for example. Strengthening expertise at the local level remains paramount. At the same time, it would be problematic to draw all of the younger generation to computer science and leave the farming sector without a much-needed generation of workers. We have to find the right balance. In an attempt to bring these different worlds together, YPARD Philippines encourages information exchange and offers a number of online courses. We also keep one foot on the ground through our partnership with the 4-H Club organisation in the Philippines which works with young people in rural areas who have dropped out of school. In addition, we actively participate in the current reflections on modernising public policy and the education curricula in terms of farm work.

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remaining active on the ground, it is increasingly acting as a sorting centre to determine which projects carried out by which actors have the best chances of including the poorest in the new economy. New technologies that reach multiple audiences at the same time are ideal. "In the case of Plantwise, a project that produces specialists in plant health and supporting databases, the SDC's funding is helping hundreds of thousands of farmers improve their yields and creating opportunities for local telecommunications engineers at the same time," notes Michel Évéquoz, an expert at SDC Global Programme Food Security.

Innovation and transnational knowledge sharing can go hand-in-hand, such as the RIICE project – short for remote

sensing-based information and insurance for crops in emerging economies. For this project, the SDC approached Ticinese SME Sarmap, whose high-tech expertise provides a detailed analysis of rice crops in seven Asian countries. This is done by interpreting satellite imagery transmitted by the European Space Agency which makes it possible to predict harvest quality and approximate yields in order to calculate the amount of compensation insurance companies may need to pay farmers. RIICE is a win-win project. "Sarmap gains expertise in geolocation applied to the farming industry; in turn, it has pledged to sell the software to interested governments at a lower price," explains Bernard Zaugg, coordinator of the SDC initiative. This really shows the potential of technological innovation. ■

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