

# Multiplying Agriculture by the Power of Mobile



## Executive Summary

The revolution in mobile communications is providing a lifeline to agricultural communities around the developing world. Mobile technology is already demonstrating its potential to provide farmers with the services and information they need to grow both their production and their standard of living. By taking steps to make mobile financial services accessible to smallholder farmers, policy-makers, enterprises and development organizations can play a role in empowering them with the tools they need to reap the return their hard work deserves.

## Special Thanks

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# Multiplying Agriculture by the Power of Mobile

Over a billion people worldwide earn their living by working the land. But despite their vital role in keeping the world fed and clothed, many farmers and their families remain mired in poverty, and smallholder farmers in developing countries account for 75% of the world's poor. These farmers struggle to keep up with their counterparts in the developed world who have access to advanced agricultural supplies, timely market information and a full range of financial services. With skyrocketing populations in many developing countries, it is more important than ever that farmers have access to these same services to grow both their production and their incomes. This is where mobile-based financial services can help. By bridging the information gap and putting financial services within the reach of smallholder farmers, mobile platforms can make farming a more sustainable and profitable occupation with the potential to lift millions out of poverty.

## From Information to Financial Empowerment

The revolution in mobile communications has already begun to benefit farmers, even in remote regions of the world. Mobile services are at work in the field of mAgriculture, mostly for sharing and obtaining information. Across the developing world, there are programmes that give farmers access to research and best practices, weather information and market prices via SMS, Interactive Voice Response (IVR) or call centres. Knowing the latest market prices allows farmers to avoid unnecessary middlemen and raise their profits, while getting regular weather updates can help them save crops that would have otherwise been destroyed by storms. Closing the information gap has already helped many farmers increase profits by anywhere from 15% to 100% in pilot programmes from India to Africa.<sup>i</sup>

While these basic information services are having an impact, the potential for even greater improvements

exists in those areas where they can be coupled with mobile financial services (MFS) such as payments, credit, insurance and savings. Using these mobile finance tools, farmers can invest in products like fertilizers, high quality seeds and machinery to increase crop yields, with benefits for themselves and the entire agricultural sector.

### mAgriculture in Action

Ekgaon provides mobile tools allowing 11,000 farmers in rural India to access market price information, weather alerts and advice on crop management and agricultural best practices.

eSoko, created in Ghana and now used in 16 African countries, provides a wide range of information to farmers, including commodity prices. The service also allows farmers to communicate buy-and-sell offers for their products.

### Benefits of MFS for Agriculture

Vodafone's Compatibility Agriculture Report indicates that by 2020 mobile services will have increased agricultural revenue (in the 20 countries where this provider operates) by US\$ 138 billion, with US\$ 51 billion coming from mobile financial services<sup>ii</sup>. These improvements are expected to come in the following areas:

- Mobile payments for microfinance loans: Using mobile phones to make payments on microfinance loans reduces travel, and transaction costs for farmers and digitizing data collection should dramatically decrease operational costs for microfinance institutions (MFI), allowing them and their clients to enjoy higher profits.

- Access to credit: With credit, farmers can support themselves during the growing cycle – between the time they pay for supplies like seeds and fertilizers and when they harvest their crops. This cycle can often span 3-6 months.
- Access to insurance: With insurance, farmers can invest in higher yield agricultural inputs without fear of financial ruin in the event of a drought. Some estimates suggest this can increase their income by 200-300% per acre.<sup>iii</sup> For most developing country farmers, this is the difference between living above or below the poverty line.
- Savings and payments mechanisms: In areas where theft is a problem, savings accounts accessed through mobile technology can prevent theft of money that would otherwise be stored at home. Mobile savings and payments also formalize the informal economy, generating credit histories on individuals and more accurate aggregate economic data on a country as a whole.

Mobile financial services for agriculture (see sidebar) are already starting to appear in African countries with mature mobile money platforms in place, like Safaricom's mPesa™ and Airtel's Mobile Money™. Farmers, agricultural systems and consumers are starting to see the exponential benefits.

## The Multiplier Effect: mFinance as Catalyst

The diagram on the next page depicts the catalysing impact that mobile financial services have on the agricultural sector and the wider economy. While access to greater information improves a farmer's knowledge, mobile financial services empower her to act on this knowledge, with benefits to the wider society. She can build her credit history, increase her family's financial security and save for the future. At the same time, the agricultural ecosystem benefits from data on transactions, which improves the efficiency of the supply chain system. And the wider economy benefits from an increased pool of

### mPayment

MoBiashara in Kenya, Nigeria, Uganda and South Africa allows farmers to compare prices and purchase agricultural inputs using mobile money reducing transaction costs and increasing profits.

### mCredit

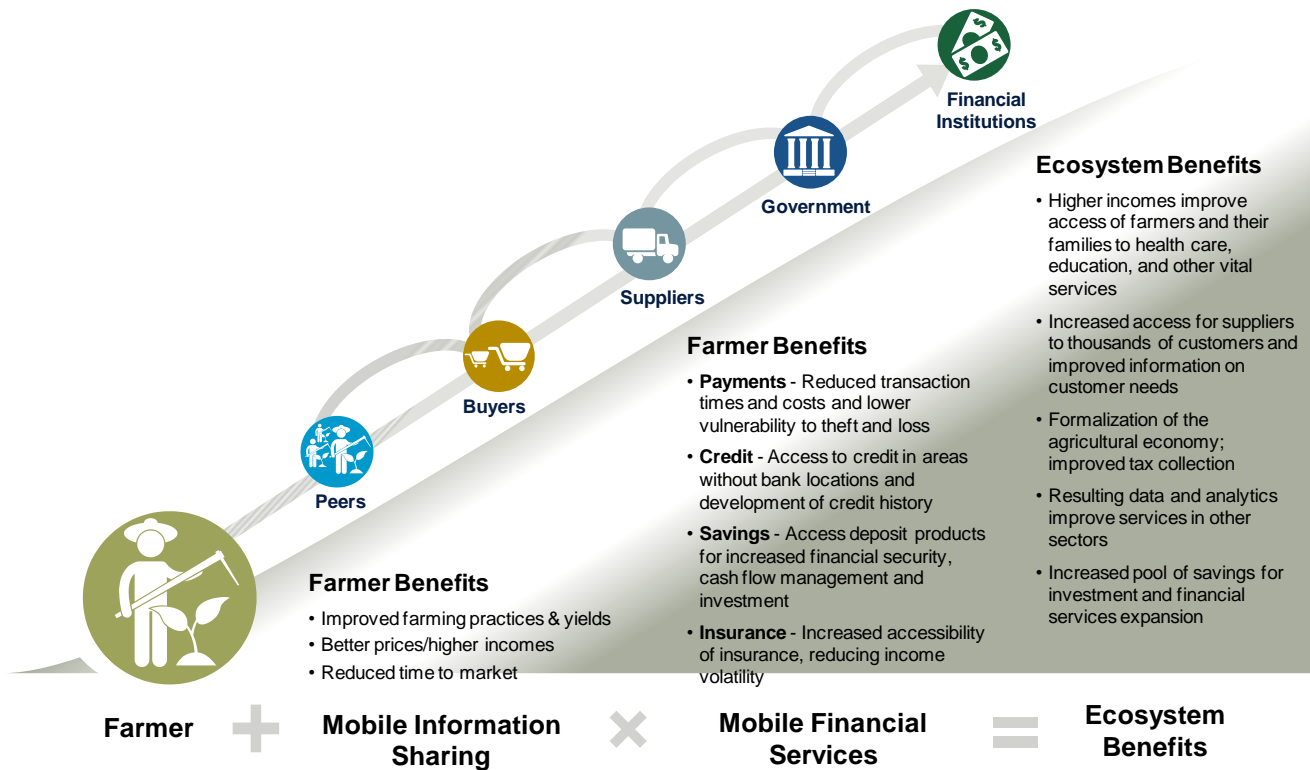
Kenya-based Musoni, a microfinance bank, now allows users to make payments on their microfinance loans via mPesa reducing travel and transaction costs and improving data collection.

### mInsure

Kenya's Kilimo Salama, a venture between Syngenta Foundation for Sustainable Agriculture, UAP Insurance, and Safaricom, allows farmers to insure against crop failure – an automated weather system detects weather irregularities and automatically disburses a payment to the user's mPesa account.

### mSavings

Jipange KuSave gives unbanked customers in Kenya access to savings accounts and small loans via their mPesa or Airtel Money account, which they can then pay back and manage via their mobile phones. M-KESHO, a venture between Equity Bank and Safaricom, launched last year as an interest-bearing savings account.



savings, data that allows more services to be provided, and improved tax collection caused by the movement of transactions into the formal economy.

One example of how “big data” can be leveraged is the Kenyan Farmers’ Helpline. A service provided by the Kenya-based enterprise KenCall, this communications service provides agricultural information, advice and support over the phone to smallholder farmers. What is unique and innovative about this service is the manner in which aggregated data from the call centres is shared with other agriculture related stakeholders. Policy-makers, donors and investors can have a near real-time view of how specific agriculture interventions are performing.

So what steps are needed to accelerate adoption of mobile financial services in the agricultural sector? The World Economic Forum’s *Mobile Financial Services Development Report 2011* identifies some of the key pillars for scaling mobile financial services

(see page 5 sidebar). Factors particularly relevant for the agricultural sector are best highlighted by looking to India as an example of a country that the Forum’s report identified as being well positioned for increasing the availability and adoption of mobile financial services.

### The India Laboratory: Making Mobile Financial Services Work for Agriculture

Agricultural occupations employ just over half the Indian workforce (52%), but agriculture accounts for only 18% of the national income<sup>iv</sup>. Agricultural growth has slowed considerably over the past decade, with Indian rice yields at one third of China’s and one half of Vietnam’s<sup>v</sup>. This decline is largely due to government overregulation, unsustainable water management practices and lack of access to financial services<sup>vi</sup>. Clearly, there is a tremendous unmet need in India for mobile-based interventions that can increase agricultural productivity and boost farmers’ incomes.



## How Can Mobile Financial Services Be Brought to Scale?

While information sharing and supply chain management programmes can be developed independently, programmes offering mobile financial services to farmers require a functional mobile money platform that can be complicated to develop. What conditions need to be in place for mobile money to be brought to scale? The World Economic Forum's Mobile Financial Services Development Report identifies seven important "pillars":

**Regulatory Proportionality:** Regulation must keep up with the pace of technological change, harmonize regulations between financial and telecom sectors and find a way to comply with Know Your Customer and Anti-Money Laundering regulations when the customer base lacks official identification.

**Consumer Protection:** To boost confidence, regulations must protect consumers from fraud, scams and service provider insolvency.

**Market Competitiveness:** In the long term, adequate competition is essential to ensure a wider range of affordable services and interoperability

**Market Catalysts:** Adoption by governments to disburse wages, pensions, CCTs or collect taxes drives national uptake and faith in the mobile money system.

**End User Empowerment & Access:** Individuals must have a moderate degree of financial literacy, affordable access to a mobile device and a mobile network connection.

**Distribution and Agent Network:** A large network of cash-in/cash-out agents nationwide must be present.

**Adoption & Availability:** A service becomes sustainable once it has reached scale and offers a portfolio of products.

The widespread adoption of mobile communications in India illustrates the potential of such services. By the end of 2011, more than 600 million Indians will own mobile phones (with hundreds of millions more subscriptions when multiple SIMs are counted), with rural areas showing the fastest growth in mobile ownership.<sup>vii</sup> India currently has several different information sharing products (including Nokia Life Tools, Reuters Market Light, IFFCO's Kisan Sanchar venture with Airtel, Ekgaon and a Monsanto helpline) through which farmers can access information on agricultural best practices, weather and market pricing via SMS, IVR or call centres.

Yet a mature mobile-money platform, the foundation of agriculture-oriented mobile financial services in Africa, is still at a nascent stage in India. Over the past year, Airtel mobile money has started to spread to cities throughout India, and the company has also signed a joint venture with the State Bank of India (SBI) to develop a full portfolio of mobile financial services for both the banked and unbanked populations of India. The Mobile Financial Services Development Report cites India's positive regulatory environment, formalized consumer protection rules and high levels of market competition as positive factors that could enable a more widespread adoption of mobile financial services, but faults a weak agent network and the uncertain impact of recent regulatory changes for the relative immaturity of these services.

How could these weaknesses be overcome? Several assets present in the Indian ecosystem give hope. India's Universal ID initiative now being undertaken by the Indian government could not only overcome fraud and security fears related to mobile financial services, but could catalyze the development of government and private-sector payment schemes related to agriculture. This would encourage uptake and allow these services to reach scale while also producing new data-driven insights on rural markets. And the country's robust network of MFIs and Self Help Groups in rural areas could fill the gap in India's agent network readiness and provide a needed physical link in villages. Finally, greater collaboration across sectors focused on strengthening agent capacities could serve to

expand the availability of a portfolio of financial services aimed at rural farmers.

Through some of the agriculture-oriented mobile financial services that have sprouted in Africa, farmers, policy-makers and market actors alike are getting a taste of the benefits that could be gained if such services were available at global scale. They are also beginning to understand the conditions required for such services to thrive. Empowering farmers around the world with an array of financial tools could sow the seeds of prosperity for generations to come. ■

**For more information please visit:**

World Economic Forum New Vision for Agriculture  
[www.weforum.org/agriculture](http://www.weforum.org/agriculture)

World Economic Forum Mobile Financial Services Development Report  
[www.weforum.org/mfs](http://www.weforum.org/mfs)

The World Economic Forum  
91-93 route de la Capite  
CH-1223 Cologny/Geneva  
Switzerland  
Tel.: +41 (0)22 869 1212

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v

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