BRIEFING PAPER

USING MOBILE MONEY, MOBILE BANKING TO ENHANCE AGRICULTURE IN AFRICA

INTRODUCTION

This is one of a series of briefing papers to help USAID missions and their implementing partners in sub-Saharan Africa use information and communications technology (ICT) more successfully —via sustainable and scalable approaches—to improve the impact of their agriculture related development projects including Feed the Future projects.[1]

In this context, this paper provides a brief overview of mobile money and mobile banking services. As the resource list at the end of this paper illustrates, there are many other sources of information available to inform the reader regarding the many aspects of m-money and m-banking related to security, risks, legal and regulatory issues, and key challenges for implementers. In contrast, the paper explains the basics of such services; their current and potential use for agriculture related projects; a few lessons learned to date related to such usage; and a few issues to consider when looking ahead.

This topic is changing quickly as more and more countries adapt the service to local circumstances.

Given how dramatically mobile money services are growing in sub-Saharan Africa, they offer an unprecedented opportunity to significantly increase access to financial services and ease the flows of financial transactions within agriculture value chains. The challenge is to harness these services to increase the success of USAID funded agriculture development projects.

MOBILE MONEY / MOBILE BANKING BASICS

Mobile money (m-money) is the term used for using a cell phone to make payments to others using a cell phone where value can be stored on an "m-wallet" before and after the transaction. A sender loads money into his m-wallet by going to a registered "agent" (sometimes a financial institution, more often not); then the sender can use a secure electronic approach to transfer funds to the recipient's m-wallet. The recipient can either store the funds in his m-wallet for further mobile money transactions or go to an agent to convert the mobile money to cash.

Mobile money reduces transaction costs, reduces risks of loss inherent in handling cash, and has proven to increase savings opportunities—based on evidence in Kenya, we know that the poor often use their m-wallets to save funds at least for short periods of time and are more likely to be able to have the cash needed to weather emergencies.[2]

M-money services have been especially popular for domestic remittances (person-to-person, P2P) but also are used for bill payments (e.g., for utilities or school fees), business-to-business (B2B) and government-to-business (G2B) payments, and social transfer payments (government to citizen or G2C). For the latter, m-money can enable "m-vouchers" where the use of social transfer payments can be restricted to purchasing certain items, such as fertilizer or other inputs. In this way, mobile money has the potential to facilitate the faster and more secure flow of money among billions of customers—far more than current bank account holders.

Mobile banking (m-banking) is the same service as m-money, except the sender's m-wallet is linked to a bank account and the receiver's may be as well. (The term is also used for a variety of more basic services such as checking account balances and transferring funds between accounts.)

M-banking is one in an array of ICT tools that financial institutions are using to extend financial services to current (and sometimes new) customers to increase convenience for customers and reduce transaction costs for the financial institutions. It is one of several approaches to "branchless banking," which include other tools such as ATMs, POS (point of sale) terminals, and electronic bank cards.

In developing countries in sub-Saharan Africa and elsewhere, m-money and m-banking have leveraged the dramatic increases in access to affordable cell phone services.

Security for m-money and m-banking transactions is paramount for the customer as well as for a country's financial sector. There are a variety of proven approaches to security available, depending on the types of cell phones being used. They include ones based on SMS (short message services); the SIM cards in each phone; and USSD (unstructured supplementary service data) which is a feature of the cell phone network itself.

Given the plethora of m-money and m-banking initiatives being rolled out across developing countries especially, there are a variety of proven technical platforms (i.e., the software needed to run such systems). Hence there is no need for implementers to "re-invent the wheel" and

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[1] ICT includes cell phone and Internet services, radio, and a wide range of digital devices and related tools including cameras, geographic information systems, and a wide range of hand-held computing devices.

[2] Radcliffe, Dan, "Expanding Customers' Financial Options Through Mobile Payment Systems: The Case of Kenya," *Bill & Melinda Gates Foundation* (November 2010), p. 2.

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build their own custom platforms. What remains as one of biggest challenges for implementers is the complex combination of significant up-front investment including marketing; building a well distributed and large enough network of agents with the needed cash liquidity; and operational prowess to rapidly scale such initiatives to be large enough to take advantage of positive network effects to continue to grow to profitability – something few have actually succeeded in doing so far.

THREE MODELS WITH EXAMPLES

There are three typical models for implementing m-money or m-banking. Examples for each are provided below. The first is the model where the mobile network operator (MNO) takes the lead; this is primarily for m-money alone but sometimes also m-banking. In the case of m-money, the balances of all users' m-wallets are maintained by the MNO in a combined, trust account in a bank but not in individual accounts. MNOs use m-money services to increase their market share in a highly competitive sector; increase traffic on their networks; and reduce "churn" (i.e., having customers move from one MNO to another to take advantage of special offers). It would be ideal for users, if these services interoperated across MNOs, but given that MNOs use them to increase market share, this is not likely to occur in the short term.

The second model is the bank-led model where all m-money (or, in this case, m-banking) clients—at least the senders but sometimes also the receivers—must have bank accounts.

The third model is where a third party service provider works with one or more banks as well as one or more MNOs to launch and operate the service.

There are not yet any examples of well scaled initiatives led by microfinance institutions (MFIs). In fact, MFIs are generally not key players in this field despite their long focus on increasing access to financial services for the unbanked. This is primarily because many MFIs lack the back-office systems that are prerequisites for m-money services.[3] MFIs can potentially participate in such initiatives by serving as agents (where permitted by the bank regulator).

MNO-led Examples. Kenya's M-PESA led by Safaricom (40 percent owned by the UK's Vodafone) is by far the most success example of this approach (or any approach) to mobile money services. Within 15 months of launch, M-PESA had 2.7 million users and almost 3,000 agents. By November 2010, M-PESA had 13.5 million customers with over 21,000 agents.[4] M-PESA has exceeded the reach of any other financial service in Kenya, with forty percent of all adults using the service by 2009.[5] At first, banks in Kenya argued against M-PESA but today some are starting to leverage it well. In fact, Equity Bank in partnership with Safaricom has launched a new M-PESA based banking service called M-KESHO tailored to the unbanked with no account opening fees and no minimum balances.[6] M-KESHO accounts are linked to M-PESA accounts. In November 2010, Equity Bank also announced that it has formed a strategic partnership with Orange Money in Kenya as well, further improving access to Equity Bank accounts for the unbanked using m-money services.[7]

Many mobile network operators have been eager to repeat M-PESA's success elsewhere, but none have come close to its success so far. One year after the Kenyan launch, Vodacom (Vodafone owns 65 percent) launched M-PESA in Tanzania. In the first twelve months, it had only 280,000 users and 930 agents[8],

although that number has expanded to over 5 million subscribers by November 2010.[9]

G-Cash in the Philippines is another notable example of the MNO-led model implemented by Globe Telecom. G-Cash differs from M-PESA though in that from the outset it allowed bank related transactions as well as transactions via agents and Globe airtime dealers. Facilitated from the outset by the USAID-funded MABS Project, GCash started in 2004 and in 4 years had 6,000 domestic outlets in Philippines servicing 1.9 million subscribers.[10]

Bank-led Examples. In contrast to MNOs, banks generally have used cell phone based services as one additional channel for services for their customers, not as a way to capture large numbers of new customers. Many banks in sub-Saharan Africa allow bank account holders to use m-banking services to check balances; receive deposit or withdrawal alerts related to ATM or credit cards; and transfer between their accounts using their cell phones. These non-transactional services are the most basic type of mobile banking. Examples of mobile banking in developing countries include Standard Chartered Mobile Banking in Kenya[11] and Hello Money by Barclays in Kenya and India.[12]

Two examples of models that are hybrids between MNO-led and Bank-led m-money/banking services are *Zap*, a partnership between Zain, a leading mobile telecom provider in sub-Saharan Africa, and Standard Chartered Bank, among other banks, operating in Uganda, Kenya, and Tanzania[13] and *Mobile Money*, a partnership between Stanbic Bank, and MTN

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[3] There are exceptions to this generalization especially in the form of banks that have come from MFI "roots" or have a special focus on smaller and rural clients, such as Equity Bank, Opportunity International Bank in Malawi, and Banque Populaire due Rwanda (and other Robobank-owned banks in sub-Saharan Africa).

[4] M-PESA press release (November 2010)

[5] FinAccess National Survey 2009 - Dynamics of Kenya's changing financial landscape (June 2009)

[6] *See* Equity Bank Product Page

[7] Equity Bank press release (November 8, 2010)

[8] Rasmussen, Stephen, "The Hype Cycle and Mobile Banking," *Presentation at Mobile Money Summit* (June 23, 2009)

[9] "Vodacom Tanzania gets Gates funds for money service," *Reuters* (November 16, 2010)

[10] Rosenberg, Jim, "Mobile banking in the Philippines: Interview with Globe Telecom's Rizza Maniego-Eala," *CGAP* (November 2008)

[11] "Standard Chartered launches Mobile Banking in Kenya," *ITNewsAfrica.com* (February 11, 2009)

[12] "Hello Money: Using mobile to expand banking access," *Barclays*

[13] "Zain launches Zap Mobile Banking, targets 100Mn customers," *Wireless Federation* (February 17, 2009)

operating in Uganda.[14] Zain recently reported having 4 million Zap users across the three countries.[15]

Third Party Service Provider Examples include *WIZZIT*, a third-party provider in South Africa;. Eko, an independent company in India funded by Gates Foundation and World Bank, which offers SMS-based mobile mini savings accounts in partnership with the State Bank of India[16]; and mChek, an independent company in India that offers the capability to pay mobile bills and other payments using m-money services, which is currently affiliated with Standard Chartered, Citigroup, ICICI and HDFC Banks. Finally, MTZL in Zambia is yet another example of a third party m-money service which has worked closely with the USAID-funded agriculture development project, PROFIT. MTZL focuses on providing services in rural areas to smallholder farmers directly or via large buyers.

[14] Stanbic Bank, "Uganda gets Mobile banking," Press release (March 11, 2009)
[15] *Mobile Money for the Unbanked - Annual Report 2010* (GSMA, 2010)
[16] Lacy, Sarah, "Eko: Mobile Banking for India's "Dial-Up" Internet," *TechCrunch* (May 14, 2010)

M-MONEY/BANKING AND AGRICULTURE

Where agriculture development projects find access to financial services a key constraint to success, m-money and m-banking services are potentially important tools to leverage. Such services can:

- Make it cheaper and easier for smallholder farmers to save; receive loans and make loan payments;

- Make it easier for input suppliers to collect and manage payments from smallholder farmers—and smallholder farmers, in turn, can use m-money and other ICT tools to aggregate their demand for inputs and pay for them;

- Make it easier and safer for traders to manage transactions and make deposits into their bank accounts;

- Make it easier for large buyers to pay thousands of producers faster (and reduce side selling) and manage any credit they offer such producers. For example, Dunavant is using m-money services provided by MTZL in Zambia for this as well as MTZL services to manage these producers and track and reward the best producers;

- Make payments for micro-insurance and receive any pay outs from such insurance;

- Increase the efficiency and reliability of any voucher services for fertilizer or other inputs provided by a government, an NGO or a donor project; and

- Perhaps an important indirect benefit of m-money is to enable producers and others in the value chain to more easily and cheaply receive remittances domestically and internationally—critical assets to help with cash flow.

So far, m-money and m-banking initiatives have not scaled widely in most countries, and there are few actual examples of agriculture development projects using them to improve success. There are notable exceptions though. In Kenya, M-PESA is being used in many ways by smallholder farmers and others in the agriculture sector. The USAID

PROFIT project in Zambia also has used m-money services (from MTZL) to improve access to financial services and inputs for smallholder farmers, and the USAID MABS Project in the Philippines has been a global leader in demonstrating how m-money and m-banking services can improve access to financial services for the rural poor.

So far, most bank-led m-banking services have not provided benefits to smallholder farmers or the rural unbanked, but as more banks that focus on this market segment implement m-banking services, this will change.

LESSONS LEARNED

Given the scant number of examples of using m-money to enhance agriculture development, there are few lessons to be shared related to m-money and agriculture development. Below are a few, plus several questions to ask before deciding to tap m-money or m-banking services as part of an agriculture development project.

- Be cautious not to be attracted to using m-money because of the hype that surrounds it. Ask if it really has potential to solve a key constraint related to payments or access to financial services for a project's target beneficiaries—or if it offers a significant opportunity to increase success.

- Can the relevant financial services institutions—ones willing to offer products to meet the needs of farmers—offer m-money services? For example, m-banking looked like it had great potential for a set of smallholder farmers in one African country until it was determined that the key lender to these farmers was the state-owned agriculture bank (due to subsidized interest rates and loan terms tailored well to crop cycles), but this bank could not take part in any m-banking services because it did not yet have the requisite ICT-enabled back-office systems.

- Is it likely that the relevant m-money/m-banking service will be sustainable and scale? Do not assume that an initial roll-out of a

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promising m-money service that might help a development problem will scale to reach target agriculture users. Most have not done so yet.

- M-money and m-banking are "hot" services with significant competition between providers. Projects need to use a competitive process to take advantage of this competition, and not to be lured into a partnership with just one provider, even if that provider offers a "public-private partnership". A tender can be used to compare alternative public-private partnerships.

- If m-money/m-banking does have great potential to help an agriculture project, how best might donors be involved? Donors can and have had important catalytic roles in launching successful m-money and m-banking services (i.e., DFID's assistance with M-PESA; USAID's support of G-Cash via the MABS and support to MTZL via PROFIT), but a project's potential role needs to be carefully designed and honed to leverage the significant private sector investments needed.   USAID's role may likely be best focused on the enabling regulatory environment for m-money or a role that is now being rolled out with USAID's HIFIVE Project and the Bill and Melinda Gates Foundation in Haiti where an incentive fund (a competition between service providers with a substantial cash rewards) and on-demand technical assistance is being used to provide strong incentives for rapid scaling of such services.

As in Haiti, a USAID project should leverage the strong commercial incentives providers have for rolling out m-money/m-banking service and perhaps provide incentives to a provider to *extend or tailor* a service to rural clients. Unless the provider already is planning to rollout the service commercially, it is very unlikely that a project can (or should) contribute enough to the signifi-

cant start-up costs.

LOOKING AHEAD

In the near future, it is likely m-money and m-banking services will begin to scale dramatically in many more countries in sub-Saharan Africa beyond Kenya and more banks will step in to offer savings products geared to the unbanked and linked to m-money services (just as Equity Bank is doing in Kenya). This will offer even more opportunities to agriculture development projects to leverage such services to tackle financial services related challenges for smallholder farmers individually or in groups.

Projects need to monitor new opportunities such services offer, such as faster payments to farmers; easier access to credit and savings opportunities; and access to related financial services such as weather insurance and more.

RESOURCES

There are a growing number of resources regarding mobile banking. The following are just a sample. See www.cgap.org for the most recent.

Bankable Frontier Associates, "Managing the Risk of Mobile Banking Technologies," (FinMark Trust, March 2008).

Camner, Gunner et al., "What Makes a Successful Mobile Money Implementation? Learnings from M-PESA in Kenya and Tanzania data sheet" (GSMA, 2009).

Christen, Robert Peck and Douglas Pearce, "Managing risks and designing products for agricultural finance," (IFAD, 2006)

Heyer, Amrik and Igancio Mas, "Seeking Fertile Grounds for Mobile Money," (GSMA and Bill & Melinda Gates Foundation, September 3, 2009).

Jenkins, Beth, "Developing Mobile Money Ecosystems," (IFC and the Harvard Kennedy School, 2008).

Maniego-Eala, Rizza, "Telcos Extending Financial Access to the Unbanked: The Philippine Experience," (Globe Telecom, September 2007).

 Mas, Ignacio and Dan Radcliffe, "Mobile Payments go Viral: M-PESA in Kenya," (Bill & Melinda Gates Foundation, March 2010).

Mobile Money for the Unbanked - Annual Report 2010 (GSMA, 2010).

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