



TRANSFORMING MOBILE MONEY INTO FOOD IN KENYA

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- ▲ **M-PESA helps enhance food security** by facilitating time sensitive money transfers, spreading risks across geographic regions, making users credit worthy, and by boosting local production of food and purchases of goods and services.
- ▲ **As a result, food security effects** are noticed in improved food production, and in access to and consumption of diversified foods among the households that receive remittances through M-PESA.
- ▲ **These individual effects** are beginning to spill into the community to improve overall food security in the region.

THERE IS POTENTIAL for M-PESA to feed rural Kenyans, says the study conducted by The IRIS Center at the University of Maryland, College Park on the community effects of M-PESA in Kenya.

Improvements in food security emerged as one of the four major effects of M-PESA. While the other three effects – money circulation, transaction ease, and security of money – mirror M-PESA's marketing campaign as a fast, safe, easy, and affordable way to send and receive money, the food security effect was intriguing. The food security result is important since USAID (2010) reports that recurrent seasons of failed or poor rains, sustained high food prices, environmental degradation, outbreaks of disease, and flooding have led to deteriorating food security conditions throughout Kenya, leaving an estimated 3.8 million Kenyans highly food-insecure. Food security refers to sustained food production, and access to and consumption of adequate and nutritious food by most households to lead a healthy life.

M-PESA (mobile money) is an agent-assisted, mobile phone-based, person-to-person payment and money transfer system that was launched in Kenya in 2007. It quickly grew and has become the most well-known system of its kind in the developing world. In May 2011, over 14 million people were M-PESA users, enabling them to send money in electronic form, store money on their mobile phones in an electronic account, and deposit or withdraw money in the form of hard currency at any of the 24,000 nationwide M-PESA agent locations.

The link between M-PESA and food security is, however, not as straightforward as the three other major community-wide effects of M-PESA that IRIS found (money circulation, transaction ease and security of money). The other three major effects, nonetheless, produce an environment that could facilitate improved food security. As a result, food security effects are noticed in improved food production, and in access to and consumption of diversified foods among the households that receive remittances through M-PESA.

M-PESA FACILITATES FOOD PRODUCTION

M-PESA remittances help time-sensitive farming activities. Our study participants noticed an increase in agricultural productivity in their communities and often had experienced this increase themselves. For those that received remittances, M-PESA appears to increase the likelihood of being able to pay for seeds, casual labor, and other inputs at the time it is most needed, and allows them to plant more of their fields. An M-PESA shopkeeper mentioned that many of her customers receive money quickly and plant early and fully. In the past, they might have missed the best quality seeds, fertilizers, or might not have had money in time to plant their fields completely. In addition, many M-PESA receivers reported a savings in travel time and transport costs to obtain remittance money that they now could effectively use on productive agricultural activities. This has enabled them to plant their fields more fully and hire more labor when it can be most productive. In a few instances, farmers and school principals mentioned that it gave children more time in school because the household becomes less dependent on children's labor in the fields.



FIGURE 1 - AGRICULTURAL INPUT SUPPLIERS ARE GROWING IN KITUI



FIGURE 2 - FARMERS ARE SELLING PRODUCE IN LOCAL MARKET IN KITUI

At the community level, this has led to the generation of more work available for casual labor, higher agricultural productivity turning into more food moving through the local markets, and start-ups of more agricultural input shops. Key informants said that more than five input-supplying stores were opened in the town since M-PESA agents started to operate. An M-PESA agent from a medium-size market center located 20 minutes outside a town noted that shopkeepers and business owners are now using M-PESA to quickly buy and stock good-quality seeds from the town and have the seeds delivered quickly to their shops to sell in response to high demand..

"[With M-PESA] we were able to access money easily to purchase farm inputs and to pay anyone that we may be hiring." - Men's Focus Group.

"This season, seeds were not a problem. Somebody could send cash earlier and get to buy seeds immediately. Also, when in need one can request someone to cultivate or weed and get paid through M-PESA." - M-PESA non-user in Men's Focus Group

"Farming is the most important activity in our village. [Before M-PESA] we used to spend a whole day going to look for money from the city for farming and sometimes days to go to Nairobi to pick money from our husbands for farming." - Women's Group

M-PESA HELPS IMPROVE FOOD ACCESS

"I have more customers than before because some [people receiving] cash through M-PESA are buying more vegetables than before." -A vegetable seller

"You can't go without food nowadays because M-PESA goes like air, in a moment you get your money and you can buy food." - A female M-PESA user

"There are increased kitchen gardens almost in every household." -Female farmer

"We have many vegetables available within the village. We no longer import vegetables from town." - Male farmer

In recent years, Kenyans have been subject to significant changes in food prices. In our study location in Kitui District, residents reported maize selling at prices 75 percent higher during the long drought (which ended in late 2009) than the post-harvest prices. While many residents reported that basic food staples were generally available for purchase, the question was whether or not people had funds to buy it. M-PESA was reported to have allowed users faster access to remittance money to purchase food and other household necessities. Although residents generally reported that community members were willing to help each other - because they were often suffering the same problems at the same time due to the dry season - assistance was hardest to come by at the time it was needed the most. M-PESA allows those with friends or familial ties greater access to assistance from outside of the immediate area, from people who may not have been affected or as severely affected by the climate shock, thus facilitating diversification of risks across geographic areas.

Some M-PESA users also find that they are more easily able to access informal credit, which can help them in times of reduced ability to ac-

cess food. Shopkeepers reported that they have sold food and other household goods to customers on credit because they know that the customer regularly receives money through M-PESA from friends or relatives. Purchasing goods from a store on credit with the promise to pay at the end of the month may otherwise be reserved only for those customers with proof of a salaried job or a long history with the owner. After M-PESA opened in his area, one shopkeeper noted that he allows a few customers to purchase on credit with the agreement that their friend/relative sends money through M-PESA to him at the end of the month, and that he returns any remainder in cash to the customer. This type of informal credit appears to help residents who expect an M-PESA payment to smooth consumption throughout the month. To ensure a regular client base, the shopkeepers also stated that they do not charge more to customers who use such payment mechanisms, but they are expected to make payment by the end of the month.

The majority of food vendors that we interviewed claimed that they have more customers now because people have more money at their disposal to spend in local shops. Vendors and shopkeepers in smaller market centers notice that those who receive funds through the phone would cash out at the local M-PESA agent, and are then spending the money locally. Prior to having an M-PESA agent available in the local markets, people were more likely to travel to urban centers and buy items there. Discussions with users and non-users of M-PESA also confirmed the above phenomenon. A tomato vendor added that he sees people go to the M-PESA shop first and then come to him and also the retail shops to make purchases, thus increasing the volume of business for the vendors. This can benefit users and non-users alike as local market vendors increase the amount and variety of stock they keep. Moreover, the vendor said M-PESA customers do not have to carry their money in cash anymore; they are able to use their cell phones to store the cash safely until arriving at the market. He said that his business has doubled since the M-PESA shop moved into the shopping center, which led to the expansion of local economies.

Additionally, a larger customer base increases demand, so food vendors reported buying larger and more diverse quantities of stock. Two store owners in a small shopping center with an M-PESA agent claimed to keep more stock of greater variety than previously in their stores. More stock translates into more food availability in the marketplace, again benefiting all community members—users and non-users of M-PESA alike. Many study respondents stated that "there is no hunger now," referring to both the availability of food in the market place and also their ability to buy it. M-PESA, by impacting flows of capital, security of money, and transactions, seems to have facilitated an environment conducive to ensuring food security.

EFFECTS OF M-PESA ON FOOD SECURITY SEEN DIFFERENTLY ACROSS GENDERS AND LOCATIONS

While both men and women noted the food-security effects of M-PESA, our focus groups showed that rural women placed more emphasis on the food security effects of M-PESA than rural men, while we saw the opposite in Kibera. Women in urban areas tended to focus on food access (which for them did not link as clearly to M-PESA) while urban men focused more on food production. Many urban men were

found to use M-PESA for sending remittances to support families in the rural areas for farming or farming more land in the rural areas. Such urban men also were found to have more ties to rural areas and planning to return there, while urban women were more likely to stay in the city or to move to their husbands' villages, where they have no personal ties.

Patrilocality is still common among many of Kenya's ethnic groups, so that when a woman marries she relocates to her husband's residence or family homestead. Additionally, when one family member migrates to the city, it is most often the male head of household, while wives and children remain in the rural areas. But rural women, especially those in predominantly farming communities reported the importance of the positive effect of M-PESA on agricultural production. They likely noticed the effect of M-PESA on agriculture more than rural men because they were more often the recipients of money through the system to use on their farms.

IMPLICATIONS OF EFFECTS OF M-PESA ON FOOD SECURITY

One of the effects of M-PESA is in supporting the agricultural production system by increasing rural residents' ability to access funds in a timely manner to hire agricultural labor. In many instances, the husbands migrate to urban areas in search of employment, leaving their wives behind with less familial labor. Remittances that the families in the rural areas get through M-PESA has a significant implication on women-run family farms because the remittances help to hire agricultural labor on time to increase agricultural production, and more importantly, to keep family farms intact.

M-PESA has positive spill-over effects on food security because it facilitates access to and consumption of diversified foods. But, these effects are currently driven primarily by the households that receive remittances and the limited payment functions they use. For the effects to be sustainable, the use of M-PESA needs to become more widespread, especially among non-remittance receiving households and businesses, for payment services and to maintain savings. In our interviews with 58 small businesses or market vendors across the three study locations, we found that 60 percent (35 of 58 respondents) use M-PESA in some way for their business. Two-thirds of those 35 respondents reported using M-PESA to purchase stock from distant places and have it delivered to them, which saves them time and travel costs. But, very few households and businesses reported using M-PESA to accumulate their savings.

Effects of M-PESA on food security could also be sustained by augmenting its effects through effective partnerships with other service providers that are essential for improving agricultural productivity. They include financial institutions, insurance agents and water companies. Such partnerships are now emerging on a pilot basis in the study areas that need to be watched for community-wide food security effects and implementation lessons.

The brief was written by Geetha Nagarajan and Sherri Haas at The IRIS Center. It is drawn from paper "Community-Level Economic Effects of M-PESA in Kenya" by Plyler, Haas and Nagarajan (2010) and other interviews conducted by the authors. The data were collected during two rounds of research from September 2009 - July 2010 in several villages from Kibera in Nairobi, Murang'a in Central Province, and Kitui in Eastern Province using qualitative tools to explore the possible direct and externality effects that can occur for a community due to M-PESA.

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