

Phone ergonomics for improved uptake of ACRE Africa's mobile agricultural insurance in Kenya

1. DEVELOPMENT RELEVANCE

Economic and poverty context

Kenya has made significant political, structural and economic reforms that have largely driven sustained economic growth, social development and political gains over the past decade. However, its key development challenges still include poverty, inequality, climate change and the vulnerability of the economy to internal and external shocks. There has been growth in the last three years, reaching 5.8% in 2016, which made Kenya one of the fastest growing economies in Sub-Saharan Africa. The economic expansion has been boosted by a stable macroeconomic environment, low oil prices, a rebound in tourism, strong remittance inflows and a government led infrastructure development initiative.

Financial sector context

Kenya leads in developing mobile money payment systems and in widespread usage, despite battling extreme poverty. In 2017, 73% of adults were financially included. Of these financial account holders, 98% held mobile money accounts. In 2017, the digital financial services (DFS) market in Kenya continued to develop beyond basic transfers as active mobile money users continued their rapid uptake of new and existing products and services for merchant and bill payments, government payments and transfers, and credit, savings, investment and insurance.⁶ However, there is an evident gender gap in access to formal regulated financial services (35% women compared to 50% men). Northern parts of Kenya face higher levels of exclusion, up to 50%, primarily driven by poor infrastructure. There is a direct correlation between formal inclusion and levels of education: 98% of Kenyans with tertiary education are formally included.

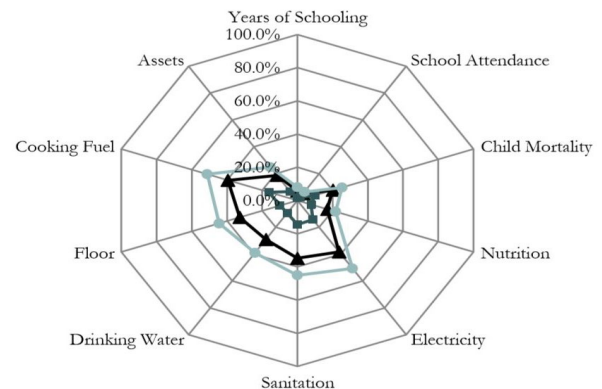
Financial inclusion in Kenya continued to expand in 2017, driven by mobile money account registration. However, bank account ownership has remained effectively unchanged since 2013 at less than 30% of the adult population, not including special-purpose accounts created by the uptake of bank-linked mobile money products such as M Shwari.⁷

Partner financial institutions

ACRE Africa, the brand name of Agriculture and Climate Risk Enterprise Ltd was incorporated in 2014. The for-profit company ACRE Africa evolved from the Kilimo Salama project, established in 2009 and funded by the Syngenta Foundation for Sustainable Agriculture (SFSA) and the Global Index Insurance Facility (GIIF). In 2014, ACRE Africa developed products covering over 233'000 farmers in Kenya, Tanzania and Rwanda.

Table 1 ¹ : Population and economic indicators	
Population in million (2018)	51
GDP growth (2018)	6.3%
Inflation (2018)	2.8%
Trade balance (% of GDP) (2018)	-9.8%
Foreign direct investment (net) (% of GDP) (2018)	-8.7%
Net ODA received (% of GNI) (2018)	0.5%
Remittances received (% of GDP) (2018) ²	3 %
Economic Freedom Index ³ (Rank among 186 countries) (year)	54.4
Poverty indicators	
GDP per capita (USD) (2018) ⁴	1202
Gini Index (0= equality 100= inequality) (2015- latest)	40.8
National poverty rate (2018) ⁵	36.1
National rural poverty headcount rate (2016r)	36.5

Multidimensional poverty index chart¹ (Kenya 2017)



¹ The World Bank Group (2018). World Development Indicators database. Washington, DC. <http://data.worldbank.org>. Accessed 09.2019.

² <https://knoema.com/atlas/Kenya/topics/Economy/Balance-of-Payments-Current-accounts/Personal-remittances-received-percent-of-GDP>

³ Heritage Foundation, (2018) Index of Economic Freedom, <http://www.heritage.org/index/ranking>. Accessed 09.2019

⁴ <https://tradingeconomics.com/kenya/gdp-per-capita>

⁵ <https://blogs.worldbank.org/africacan/more-than-just-growth-accelerating-poverty-reduction-in-kenya>

⁶ <http://finclusion.org/country/africa/kenya.html>

⁷ http://finclusion.org/uploads/file/kenya-wave-5-report_final.pdf

ACRE Africa links stakeholders along the agricultural value chain with risk mitigation solutions to unlock access to credit and inputs by de-risking investments from the main climate risks. Revenue comes from a margin on the insurance premium of developed products and from fees charged for advisory services.

SeedCo Kenya Limited is a seed company with a regional presence in Africa. ACRE has partnered with SeedCo since 2009, leveraging their distribution network to make ACRE's agricultural insurance product available to the farmers. The partnership involved packing a replanting guarantee (RPG) insurance activation card in each of their two-kilogram seed bags. SeedCo was the policy holder and paid the premium for each bag of seeds activated by farmers.

Safaricom, is the leading mobile network in Kenya with over 11 million subscribers. Safaricom partnered with ACRE to provide a mobile activation platform (USSD) and a mobile money premium collection system (M-PESA) which was also used for paying out disbursement.

UAP is one of the leading insurance companies in Kenya that provides agricultural insurance solutions to farmers.

ACRE Africa is registered as an insurance surveyor in Kenya, as an insurance agent in Rwanda and has applied for registration as an insurance agent in Tanzania. In 2019 the company linked more than 1'300 farmers to self-sponsored agricultural insurance product in Kenya, 58'000 farmers in Tanzania and over 650 farmers in Rwanda. ACRE Africa does have a footprint in other African nations.



2. INTERVENTION APPROACH

Capacity building needs

Of the 800'000 cards distributed in seed bags in the July-November 2015 season only 20'000 cards (2.5%) were successfully registered, with 80'000 (20%) cards being registered incorrectly, and the balance of 700'000 cards (87.5%) not being registered at all. The SCBF intervention's objectives were to (i) tailor the mobile phone platform to improve registration rates by farmers, and (ii) identify insights and knowledge gaps to design and implement effective trainings for farmers on insurance.

Main activity areas (goals, targets, resources & time frame) and outputs⁸

The project was guided by five key activity areas which have been summarised into three key areas of priority. All planned outputs have been successfully achieved.

- Analysis and review: ACRE examined its data library to determine agricultural insurance industry trends, best practices and adopted an effective route to market channel.⁹

ACRE conducted user acceptance tests (UAT) with farmers and agents both at the beginning and at the end of the project. 20 farmers and shop owners that retail agriculture inputs were interviewed in 2016 and 26 were interviewed in 2018. Ergonomics tests identified the need to simplify the terminology in the USSD application. The 2018 test results revealed that over 70% of the farmers can use the USSD menu to pre-register on their own as guided by the RPG card. Other challenges identified were (i) illiteracy and (ii) evident among the women was a notable fear of adapting to a new technology.

- Assess the effectiveness of farmer pre-registration model conducted at retail agrovets stores: The model sought to activate farmers to register for RPG upon purchase of maize by farmers at the stores. A team of promoters was stationed at the agrovets to target farmers purchasing SeedCo seeds and educate them on the RPG product. Although the training of 100 agents was achieved, the village champion model emerged as the most effective channel for farmer education and stimulation for product uptake.
- Improvement of registration rates by farmers observed as follows:

⁸ See ACRE's blog about using mobile phone ergonomics to improve uptake of insurance here: <https://africanstore.co.ke/using-mobile-phone-ergonomics-to-improve-uptake-of-acre-africa-micro-insurance-product-rpg/>

⁹ This was a recommendation from a MicroSave report: <https://www.microsave.net/signature/projects/acp-eu-microfinance-program-product-development-to-enhance-agriculture-finance-for-smallholder-farmers-in-ethiopia-ghana-kenya-and-uganda/>

Year	Season	Number	Number of Cards Distributed	Conversion
2016	Long Rains	Before Project Period	Before Project Period	Before Project Period
	Short Rains	74'370	RPG 750'000 cards	9%
2017	Long Rains	32'327	RPG 500'000 cards	12.5%
	Short Rains	30'186	RPG 500'000 cards	6%
2018	Long Rains	1'498	Bima Pima cards 10'000	14%
	Short Rains	1'444	Bima Pima cards 7'000 (tested Mpesa payments only)	20%
2019	Long Rains	1'335	Bima Pima cards 5'000 (tested Mpesa payments only)	26%
TOTAL		136'833 RPG Cards 4'277 Bima Pima Cards	1'750'000 RPG Cards, 22'000 Bima Pima cards	8% RPG 19% Bima Pima

All planned project targets were achieved, however, there were many challenges. First, farmers demanded an all-season coverage, rather than coverage limited to the germination period of the crop. The insurance product distribution became a challenge when Seedco changed their approach. This resulted in the review of the distribution model and the launch of a self-sponsored farmer product Bima Pima, which is not restricted to a single variety of maize seeds, in the short rains season of 2018. 100% of the 1'498 farmers who purchased the new self-sponsored insurance product paid through mobile money. Highlights from the activities include:

- ✓ Farmer training model: the introduction of the village champion model of training combined with digital training on using the mobile phone to access the insurance product led to improved uptake of insurance.
- ✓ Demand for an all-season crop insurance coverage: showed that farmers are willing to pay for a self-sponsored coverage to mitigate against climatic shocks experienced post germination.
- ✓ The revised version of the insurance coverage card: shown to be more efficient and user friendly to farmers by its increased conversion rate.

Freemium to Premium

The Replanting Guarantee (RPG) is a freemium insurance model that insures against excess rainfall and drought for 21 days in the germination phase. Activation is done through a mobile platform designed by ACRE Africa and supported by local mobile network operators (MNO). The MNO's system submits the farmers' GPS location to ACRE Africa upon registration; ACRE subsequently monitors the farmer's location for adverse weather events. An insurance payment is triggered if the weather index indicates the occurrence of adverse weather conditions at the germination phase. Timely claim settlement using the mobile money platform allows the farmer to purchase another bag of inputs so as to not miss the entire planting season.

The Kenyan market has a high proportion of unique mobile subscribers (42.53%) and offers the ability to integrate mobile insurance-based products into a mature mobile payment system, which has strong rural reach, and an existing base of customers whose technical literacy with mobile money is high. These are optimum conditions for an Agri MFS (Mobile Financial Service) to scale quickly.¹⁰ In ACRE's RPG model, the germination coverage was paid for by the seed manufacturer Seedco: this model relied on an entity to pay the premiums on behalf of the farmers. However, this was unsustainable in the long term and the farmers were required to self-sponsor coverage for the other phases of the season.

The new product developed by ACRE Africa is branded "Bima Pima." The product enables farmers to purchase insurance in small affordable bits from as low as KSH 50 (CHF 0.50) up to KSH 200 (CHF 4.00) per card. As such, farmers can purchase the value of insurance they can afford at the time of purchase.¹¹ It offers full season coverage that is aimed at protecting input investment a farmer makes throughout the season. The product runs on USSD and STK Push platform to collect premiums via Mpesa from the initial purchase of the cards as well as facilitate subsequent top ups.

3. RESULTS ACHIEVED AND NOT ACHIEVED

Client level

The initiative had social and economic impacts for the target group: primarily smallholder maize farmers, i.e. those with two hectares of arable land or less. ACRE observed an increase in farm level investments as a

¹⁰ <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/05/ACRE-Africa-Final-Report.pdf>

¹¹ <https://acreafrica.com/bima-pima/>

result of the insurance product serving as a safety net against weather shocks. The product was distributed through agro-dealers who received training and instore activation. Above is an outline of the project's planned and actual performance on the farmers' and agents' targets and the following is a qualitative description of important results to come out of this project.

Project Milestones	Target	Actual
No of farmers signed by 2017	37,500	74,370
No of agents trained on products' pre-registration and registration	100	100
No of farmers signed up by 2018	90,000	138,381

- Adoption of climate smart agricultural practices, such as the Replanting Guarantee product or the Bima Pima insurance product, that promote food security while de-risking farmers from climatic shocks.
- Due to confidence in agro insurance products, farmers were able to invest in their farms. There was a noticeable shift in farmers' mind set in seeing farming as a business and not for subsistence purposes.
- Leveraging on aggregated farmer groups as forums through which education and trainings are conducted and new farming technologies are introduced
- Demystifying fear associated with mobile phone technology and innovation. Majority of the women farmers who initially displayed hesitation and requested third party support in navigating the digital insurance product become empowered and more confident to self-access by the end of the project



Store attendants at Makamithi Enterprises & Agrovets, Machakos county

Jacinta received about KES 900 (USD 9) on her mobile phone as a pay-out through the Replanting Guarantee (RPG) Maize Index Insurance Product. About a month before, Jacinta had purchased ten bags of Duma 43[2] maize packets from her local agrovet. She received training from ACRE agents and activated the product. Unfortunately, she lost her crop due to insufficient rainfall which triggered a pay-out. The funds were sent to her through a mobile money system (M-PESA)



Jacinta, farmer from Makueni who activated crop insurance and received a pay-out

Makamithi agrovets were among those identified to participate in the farmer pre-registration pilot of the point of seed purchase at the agent shops. They expressed enthusiasm and, unlike previous engagements, the agrovet indicated that they would not like monetary incentives but requested that a promoter assist in educating farmers as they purchase the seeds in the store. Educational posters were placed in the store to support the farmer pre-registration exercise.

In the end, performance was poor, which can be attributed to various factors, including limited time to train and pre-register farmers as the stores were congested during peak season, as


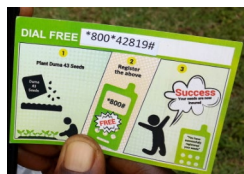

well as poor support from store management support since the initiative did not directly contribute to revenues. Based on follow-up discussions and interviews, the newly launched ACRE Bima Pima product is aligned to the agrovet retail model and provides a commoditized product that contributes to store revenues and allows agrovets to channel climate smart agricultural solutions alongside other farm inputs.

Partner financial institution level

As a result of this initiative, ACRE Africa was able to launch a more innovative and robust insurance digital solution that is potentially scalable.

- Initially ACRE Africa partnered with one seed company (Seedco) for distribution of the RPG product. ACRE Africa is now partnering with agro dealers through a commoditized insurance product (Bima Pima), an improvement that was recommended by consultants in this initiative
- Based on the observations, lessons and feedback from farmers interacting with the product, ACRE has since improved on the product design. Farmers can now purchase crop insurance in small, affordable bits due to this new mobile money integrated system.

- Through mobile money training, ACRE Africa has transitioned the insurance coverage from a “freemium” model where the seed company paid the premiums for farmers to a model where farmers pay the premiums themselves.
- Thanks to the partnership with Safaricom’s M-PESA, scale up is now possible through this enhanced product as it covers all seasons and provides farmers with an easy mobile payment model.

Intervention Planned	Implementation and Outcome
1. Pre-registration of farmers through agro-vets	50 agriculture input dealer shops were recruited during the pilot program and 100 agents stationed instore. Agrovet activation model was capital intensive and unsustainable. ACRE worked with the agrovet to pre-register farmers.
2. Unlocking barriers to farmer registration	<p>Simple feasibility study findings proposed re-design of RPG card with simplified messaging. New card design contributed the increase in registrations:</p> <p>Card 1: before 2016</p>  <p>Card 2: 2016</p>  <p>Card 3:</p> 
3. Training and pre-registration of farmers with the village champion model	There was a shift in farmer trainings from benefit selling to user ergonomics. Dummy registration cards were used during trainings to de-mystify registration complexity and assist farmers access the digital insurance mobile phone platform.
4. Launch and test of self-sponsored insurance product (Bima Pima)	Following successful performance of RPG, there was growing demand from farmers for an all-season insurance cover that is not restricted to any particular seed variety. Bima Pima was launched in 2018 and piloted in Western and Eastern parts of Kenya.

4. LESSONS LEARNT

In general, the project was a success given that it achieved all the set objectives within the stipulated timeframe. The key focus of the project was the evaluation of the ergonomics component of the farmer user interface and its relation to uptake of crop insurance. The combination of ergonomics study and farmer trainings led to new insights about farmers’ perception, behaviour, appetite and barriers towards agro insurance technological innovations. The enthusiasm by agro vets to participate in the initiative was a clear indicator of their willingness to collaborate in climate smart agricultural solutions.

Partner Reliability: One major challenge realized during the project was the dependence on a single key partner and its impact on overall product performance. Dependency resulted in frustrated farmers, out of stock situations and dilution of ACRE’s credibility across various stakeholders. These factors contributed to the development of Bima Pima product that is not pegged to any key implementing or distribution partner. This meant that the entire product distribution network had to be reworked.

Simplicity: Ergonomics analysis provided excellent insights into the farmer-phone interaction. It was shown that a majority of farmers engaged in the project had feature phones and therefore required simplified mobile phone functionalities. It was observed that farmers appreciate simplicity in product design, a key factor that informed re-design of the RPG card and development of the Bima Pima product.

All Season Coverage: Despite the success of the RPG product, farmers expressed need for an all-season insurance coverage, beyond germination season. These factors supported launch and roll out of Bima Pima, a commoditized, self-sponsored agro-insurance product that is not restricted to a single variety of maize seeds.

Gender sensitivity: It is clear that a project targeting scaling of digital agro insurance products to small holder farmers is gender sensitive. It must provide flexibility in terms of training methodologies such as adopting zero level literacy models. It is important to appreciate that mobile phone technologies and innovations require enhanced trainings on product – mobile digital activations. One key observation was the need to demystify mobile technology especially for women as they required third party support to assist in the product registration process. It is important for the project to be flexible in order to accommodate and respond to market needs.