

Fact sheet: Kilimo Salama (“Safe Agriculture”)

Micro insurance for farmers in Kenya

1. Why do farmers need insurance?

Weather risks define the lives of smallholder farmers. Good years are remembered for their adequate rains, while bad years are defined by droughts or other adverse weather conditions. Agricultural micro insurance can effectively reduce the impact of severe weather as well as support increased investment in farm productivity. Insured farmers find themselves able to buy certified seeds and invest in fertilizer instead of planting relief seed and forgoing investing in soil nutrients. In the years following droughts, insured farmers are able to continue farming as before the drought, while their uninsured neighbours continue to feel the impact of drought until several seasons after the drought. Agricultural micro insurance can have a real impact on food security. For this reason, developing affordable and relevant agricultural micro insurance is critical.

2. Index insurance is a method to insure farmers of any size.

Farmers in Kenya generally do not have access to insurance for their farms since traditional agricultural insurance relies on on-farm monitoring of losses, evaluated through farm inspections. And since the transaction costs to insure one acre are similar to insuring a 200 acre farm, the premiums from the one acre farm would never cover the related transaction costs.

Weather index based insurance offers a method to insure farms as small as one acre by replacing costly farm visits with measurements from weather stations as the indicator of drought conditions. The weather stations measure the rainfall and these measurements are compared to an agronomic model specifying crops rainfall needs. If the needs are not met, all farmers insured under that station receive a payout. If the needs are met, none of the farmers receive a payout.

3. Index insurance is a smart idea, but it is not yet a product for the masses.

Since the concept of weather index insurance for farmers was developed, several pilots have been launched around the world (Mexico, Morocco, India, Malawi, Rwanda, Tanzania, etc.) However, in order to create an impact similar to that of microfinance, the foremost challenge is to reach sustainable scale. Only in India has a commercial insurer, ICICILombard, reached some scale, selling some 40-50,000 policies per season. But even they consider that after five years they are still very much in the early stages of product development.

Index insurance, in a way, needs to make the leap from the laboratory to become a product for the mass market.

To reach scale, there are many barriers, three of which are addressed through Kilimo Salama:

- Firstly, insurance products need to be affordable for farmers, without reverting to subsidies.
- Secondly, distribution channels relevant to smallholder farmers need to be identified and developed.
- Thirdly, investment in renovating automated weather stations that can monitor the local weather patterns and the related insurance contracts is needed.

4. What is Kilimo Salama?

Kilimo Salama (“Safe Agriculture”) is an insurance designed for maize and wheat farmers so they may insure their farm inputs against drought and excess rain. The product will be available to farmers in five regions across Kenya: Bungoma-Busia, Oyugis-Homa Bay, Nanyuki-Timau, Embu and Eldoret.

Kilimo Salama is a product launched under the Agricultural Index Insurance Initiative, a partnership between UAP Insurance and the Syngenta Foundation for Sustainable Agriculture (SFSA). The product is furthermore implemented in partnership with the agri-businesses MEA Limited and Syngenta East Africa Limited, the telecommunications company Safaricom, the Kenya Meteorological Department, and the NGO CNFA/AGMARK.

Kilimo Salama’s design is based on the lessons learned from a pilot in Laikipia district, where several hundred maize farmers insured their farm inputs against drought in the long rains season of 2009. Following the drought that season, both weather stations showed that there was a payout and all farmers were compensated depending on the extent of the drought as measured at their weather station (a 30 percent and 80 percent payout, respectively.) The pilot was the first of its kind in Kenya.

Reflecting Kenyan farmers’ cash flow, where farmers invest in their farm as they plant, farmers can insure as little as 1 kg of maize seed or fertilizer.

This ‘pay as you plant’ type of insurance allows farmers to ‘try out’ insurance, a product they have never bought before and which has a negative reputation in Kenya. Experience shows that as farmers learn to trust insurance, they expand their coverage and are comfortable investing more in their farm, raising their productivity and increasing their food security.

Kilimo Salama is distributed in a new way that is relevant to farmers, through local agro-vets, of which there are an estimated 8,400 in Kenya. This year, there are close to 40 stockists distributing Kilimo Salama in five regions in Kenya. This distribution channel is a first for agricultural micro insurance.

Local agro-vets register Kilimo Salama using a scanner with tailor-made software that allows for paperless registration and immediate confirmation to the farmer of the policy. The technology used allows transaction costs to be as little more than the cost of an SMS (5 Ksh). Agro-vets collect premiums and transfer these in bundles through MPesa to the insurance company. This method is also a first for agricultural micro insurance.

Kilimo Salama is made affordable through partnerships with agri-businesses who sponsor half of the premium’s price, leaving the farmers to pay 5 percent on top of the cost of the inputs, a first for agricultural micro insurance.

The insurance uses automated weather stations to monitor the rainfall. Based on the stations' measurements and a predefined formula of crop rainfall needs, payouts are made. This method enables farmers as small as one acre to be insured. This method of using weather stations' measurement in combination with a predefined crop growth formula is often referred to as 'index based insurance.'

If the weather stations' measurement and related rainfall formula shows that there is a payout, these are sent to individual farmers using MPesa.

For the first pilot, two fully automated weather stations were installed. For the second phase, 30 stations have been installed in cooperation with the Kenya Meteorological Department in the five areas where the insurance is available.

Kilimo Salama offers farmers more than just insurance: insured farmers receive tailored extension messages using the local weather information from the nearby automated weather stations. This will enable farmers to improve their productivity and make the best of the rains in years when these are sufficient to grow a crop.

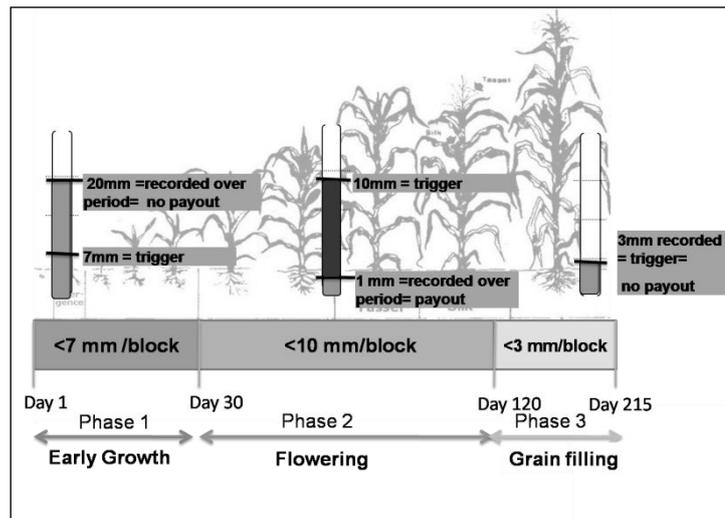
5. Key features of Kilimo Salama in detail

Weather index insurance contracts

For Kilimo Salama, tried and tested index insurance contracts were used. These contracts were adapted to the Kenyan climatic characteristics and planting practices by the Syngenta Foundation's maize and wheat experts. Such contracts rely on historical data sets, generally consisting of between 20 to 30 years of weather data. The historic data sets are combined with agronomical data on crop development, and the risks are priced by international reinsurers by combining these two. The agronomical models used to simulate crop development vary and can be increasingly complex depending on the availability of weather data. The standard drought index, developed by Columbia University's Earth Institute and described in detail by the World Bank's Commodity Risks Management Group, uses the FAO Water Requirement Satisfaction Index (WRSI) as an agronomical model to quantify rainfall deficiency.

The crop model defining the index is location specific and has to be adapted to the local climatic circumstances. A maize drought contract generally consists of a three phase contract, where for each phase different minimum rainfall requirements apply. To ensure that contracts also reflect the frequency of rainfall, the phases are subdivided in blocks of 5 to 10 days for which a minimum rainfall is established. When the rainfall measures below the defined minimum threshold in a block, a payout is triggered. The length of each phase, its relative importance, and the minimum thresholds are determined using the WRSI FAO model with the local historical climate data, crop variety characteristics and farmer feedback. An example is shown for a medium to long maturing variety in a location in central Kenya in Figure 1. There are constantly new agronomical models being tested in the field to enhance the quality of agronomic modelling that underlies the indexes. The key challenge here is the availability of quality historic climate data; climatic data beyond rainfall is generally only scarcely available.

Figure 1: Example of 3 PHASE maize contract



6. Kilimo Salama has affordable premiums through partnerships with the private sector.

In 2007, the Kenya FinAccess survey found that 69 percent of Kenyans find insurance generally unaffordable (FinAccess, 2007). While the cost of general insurance is perceived as high, the actual cost of agricultural insurance is indeed high: insurance is expensive when extreme weather events happen every 10 years.

Although extremely simplified, the price of agricultural insurance is determined by the frequency of the risk covered: if one loses all (100 percent) of his crop once every 10 years, an insurer will ask a premium of 10 percent at the start of each year for ten years so he can cover the 100 percent loss at the end of the tenth year when disaster strikes. Furthermore, this price does not yet include any transaction and distribution related costs, which could quickly add another 2 to 5 percent. While this may be a 'reasonable' price to pay for full coverage, the context in which farming is done in developing countries makes this an unaffordable price. To be more specific, there are many demands on the farm wallet, particularly at the start of the season when inputs are bought and labor is hired to prepare the land. Unfortunately, this is exactly the time the premium would need to be paid.

There are various possible solutions to the affordability issue. The first and simplest one is to lower the premium price. While this can be done, it has a direct and negative impact on the scope and value of the insurance coverage. Without appropriate training to communicate the reduced coverage to all farmers, farmers could easily feel cheated in years of total crop loss when they do not receive a matching payout. The goal should therefore be to structure insurance offers with comprehensive coverage, affordable premiums, and appropriate training.

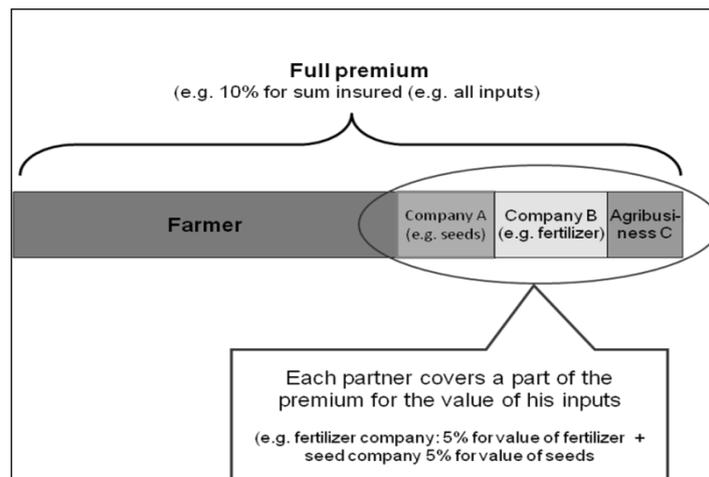
A second way to lower the cost of premiums is to subsidize agricultural insurance, either by government or by a donor agency. In developed countries, in particular the United States, this happens on a wide scale. However, subsidies limit the scalability of insurance in developing countries to the availability of funds.

The third solution is to develop an arrangement where the premium is shared between different parties, all of which are interested in the farmer not losing income in case of adverse weather events. A ‘premium sharing arrangement’ entails that each party pays part of the premium according to his vested interest, as illustrated in Figure 2. Such vested interests exist first and foremost with input companies as they suffer alongside their clients when rains and crops fail. Their clients simply do not buy products in the years following adverse events. Instead of buying certified seeds, farmers keep their own seed, thus reducing fertilizer use and increasing family labor. By offering insurance with inputs, farmers may be more willing, and now able, to invest in improved farm inputs even after a bad season. In the long term, insurance could increase productivity and food security in this way.

The input suppliers regard the insurance offer as a marketing tool. When they contribute premiums, they do this on the premise that the offer is exclusive to them and not offered by their competitors. Developing a premium sharing consortium was the basis for the Kenya drought insurance pilot launched in March 2009, and the consortium was expanded for the second phase, as many companies were keen to participate once they clearly saw its commercial advantage.

Farmers who buy Kilimo Salama buy it with fertilizer from MEA, seeds from Seed Co, and chemicals from Syngenta East Africa. Each time a farmer purchases the insurance, these companies match the premium contribution for their input.

FIGURE 2: SAMPLE STRUCTURE PREMIUM SHARING ARRANGEMENT



7. Kilimo Salama enables farmers to learn to trust and try insurance through insuring inputs.

Focus group discussions with farmers, as well as the first pilot trial in Nanyuki, have shown that farmers generally do not trust insurance. When farmers were asked about their thoughts on insurance before there was a payout, many voiced a lack of trust, illustrated by the following statements:

- *I was 50-50 about insurance paying, as I had never heard of maize insurance before, and I have known insurance to refuse to pay claims.*

- *After I received (insurance) training, we were told by our neighbours that we were being lied to.*
- *We are used to being lied to and I know that insurance people are normally fake.*
- *Through training, I understood the benefit of covering my crop against drought. At the same time, I thought you were brokers and liars.*

The challenge is therefore to develop a product that allows farmers to try out insurance and experience its benefits. Once they understand that they are not ‘being lied to’ they will be keen to insure their products, as they are very aware that the farming business in which they are involved is extremely dependent on the weather. So far, the only tool they have had to mitigate the weather risk is to pray for rain which, even to them, is not sufficient.

Enabling farmers to ‘try out’ insurance in a way that is relevant to them implies developing an entry level product. During focus group discussions, farmers were given the choice of two products: one to insure harvests and a second to insure inputs. While some informed farmers chose to insure harvests, the majority of farmers chose to insure only their inputs. The explanation for this was clear: insuring inputs required a smaller upfront investment and allowed them to ‘try out’ insurance, essentially testing whether this would be worth spending money on.

8. Offering farmers insurance through a more relevant distribution channel: agro-vets.

Insuring inputs requires selling the insurance at the point of sales of these inputs: the agro-vet. Agro-vets form an interesting new channel for distributing insurance, as these small trading businesses not only sell inputs, but often offer advice on farm management, spraying services and credit. Furthermore, since the agro-vets’ clientele is geographically close to their stores, they cultivate close relationships with these farmers. Since the farmer will already be visiting the stockist and spending money there, convincing a farmer to spend a small sum extra here on insurance may be relatively easier than if the farmer would have to buy insurance at a separate specialized outlet.

For a stockist, distributing insurance makes sense as well: their revenue and turnover is closely related to climatic circumstances, as their clients only buy products when it rains. Without rain, a stockist’s turnover simply halts. When stockists are the ones providing credit to farmers, they find that when rains fail, their businesses are quickly in danger of bankruptcy. Insurance products can actually secure revenue for stockists, since farmers can buy inputs even in seasons following adverse weather conditions. Moreover, Kilimo Salama is only offered by selected, certified and trusted stockists, and this can increase the loyalty of the customer base of the stockists and again increase sales to these businesses.

In the upcoming pilot, 40 agro-vets spread over five regions were contracted.

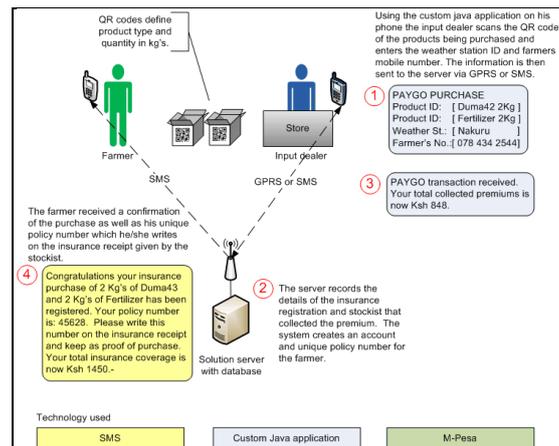
9. Technology developed to enable farmers to ‘try out’ insurance.

Distributing insurance through stockists requires that those stockists have a safe and secure way to collect premiums and pay out compensation. Depending on cash transfers

and collections to distribute insurance securely in rural areas is prohibitively expensive. Utilizing technology to ensure transactions are completed safely is the only option if insurance is to be offered on a large scale. While stockists can distribute insurance with inputs, safe payment of premiums and payouts can only be ensured through technology.

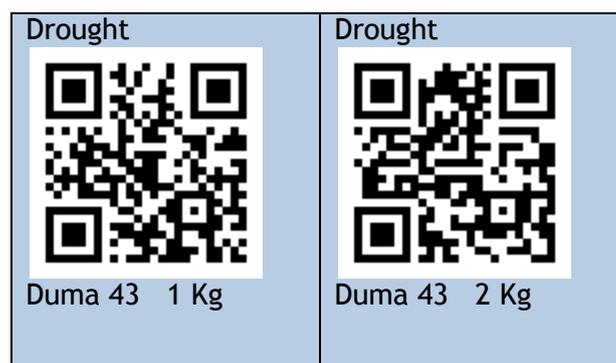
As part of the product development, a mobile application was developed that was installed on managed phones and distributed to the stockists contracted. Each stockist paid a deposit of 5000 Ksh for such a managed phone. The purchase would work as outlined in the diagram below.

FIGURE 3: PURCHASE PROCESS AT STOCKIST



To enable stockists to register products fast, Quick Response (QR) codes are used to identify product type, size and insurance type. The codes will be displayed on a sheet that is kept by the stockist. A stockist scans the relevant codes using the mobile phone and application whenever a purchase is made. The scanned data is then sent to the server via GPRS.

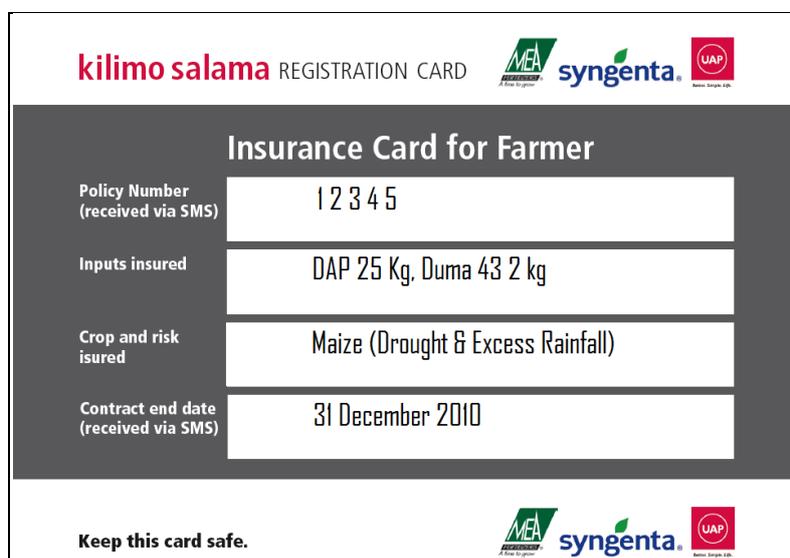
FIGURE 4: EXAMPLE OF QR CODES



Once the transaction is completed, the farmer receives a receipt that he fills in according to the details received in his SMS as shown below. This receipt is purely for the farmer's records. Were he to lose this receipt, he can always access his data by SMSing the word 'POLICIES' to the insurance company.

Once the stockist has collected a sufficiently large amount of premiums, she is automatically asked to transfer this via MPesa to the account of the insurance company.

FIGURE 5: REGISTRATION CARD



Insurance Card for Farmer	
Policy Number (received via SMS)	1 2 3 4 5
Inputs insured	DAP 25 Kg, Duma 43 2 kg
Crop and risk insured	Maize (Drought & Excess Rainfall)
Contract end date (received via SMS)	31 December 2010

Keep this card safe.

In case of a payout, there are no claims processes. Instead, all the phone numbers linked to a weather station receive a confirmation of their payout via SMS and the payout is made directly via MPesa, which is direct and avoids the delays that are often seen as most frustrating about insurance.

10. Weather stations are used for monitoring as well as tailored extension messages.

Completing the effort to implement Kilimo Salama required an investment in fully automated weather stations. In cooperation with the Kenya Meteorological Department, 30 stations have been renovated this year, each costing 4000 USD, courtesy of the Syngenta Foundation. These stations transmit weather data every 15 minutes using a GPRS connection operating on an A5 sized solar panel.

These weather stations ensure timely collection and reporting of weather data. Having these fully automated weather stations means that both the insurer and the international reinsurers can feel comfortable with the measurements being taken and can have the assurance that the data is available in time. The existing manual rain gauges cannot be used, as they are easily manipulated and time delays in reporting are common.

Installing the weather stations furthermore means that up-to-date full climate data is available to farmers. This full set of weather data (rainfall, temperature, windspeed, sunlight) allows for prediction of incidence of diseases, such as blight or aflatoxin, and other potential risks. This information, in combination with the knowledge about farmers' proximity and mobile numbers, enables farmers in Kilimo Salama to receive up-to-date text messages that will enable farmers to improve their practices, consequent productivity, and food security in years when rains are good. Kilimo Salama offers a more comprehensive package to farmers and helps them to become better farmers, as well as protecting them in case of weather risks.

11. Institutional set up of Kilimo Salama

Kilimo Salama is launched as the first product under a joint partnership called the 'Agricultural Index Insurance Initiative,' by UAP insurance and SFSA. The initiative is a three year project to develop agricultural insurance products in Kenya and build them to become a sustainable product group for the Kenyan insurance industry. The initiative develops products with agri-businesses committed to working with smallholder farmers under the Kilimo Salama product. In 2010, those companies are MEA Limited (fertilizers) and Syngenta East Africa (chemicals and seeds on behalf of Seed Co.) The initiative furthermore works to improve the weather data infrastructure in conjunction with the Kenya Meteorological Department. The initiative's mobile network and payments partner is Safaricom. For training and selection of stockists, the initiative has partnered with the NGO CNFA AGMARK.