

**Researchers**

Lorenzo Casaburi  
University of Zurich

Jack Willis  
Harvard University

**Staff**

Rachel Steinacher  
Director, Business Development

Noah Mambo  
Research Associate

Agricultural Microinsurance for Sugar Cane Farmers in Kenya

Claudia Casarotto  
Chief Global Programs Officer

**Timeline**

2014 - 2016

**Sample Size**

605 sugar cane farmers

**Research Implemented by IPA**

Yes

# Agricultural Microinsurance for Sugar Cane Farmers in Kenya

## Abstract

Farming is risky: a drought, bad harvest, or dip in crop prices can leave small farmers in developing countries without much-needed income. Attempts to mitigate these risks with agricultural insurance have typically been unsuccessful because farmers have chosen not to buy insurance. Researchers partnered with a large sugar cane company to see if delaying the premium payment until after the harvest would increase farmers' demand for insurance. Researchers found that farmers were much more likely to purchase insurance when the payments were delayed until after the harvest.

## Policy Issue

Farming is risky: a drought, bad harvest, or dip in crop prices can leave small farmers in developing countries without much needed income. Attempts to mitigate these risks with agricultural insurance have typically been unsuccessful because farmers have chosen not to buy insurance. In part, this low demand may be due to payment timing; most insurers offer insurance (and require premium payments) at planting time, when farmers are typically cash-constrained due to purchases of seeds and other materials. The timing also means "present bias" could matter: farmers might care more about the cost of the insurance premium today than about the income they might lose due to a future crop failure. Finally,

farmers may not purchase insurance because they are not convinced the insurer will actually pay them if their crops fail. Why are farmers reluctant to purchase insurance? Can delaying the premium payment until harvest time increase farmers' demand for agricultural insurance?

## Context of the Evaluation

In Kenya, about 80 percent of the working population works in agriculture, and small-scale farmers account for the vast majority of agricultural production. Sugarcane is the main cash crop in Kenya's western region, where this evaluation took place. Sugarcane farmers are typically poor, but not the poorest farmers locally; for example, 80 percent of farmers in this evaluation own at least one cow. Their crops are subject to significant risks from rainfall, climate, pests, and fire, yet very few farmers in the region have experience with formal insurance.

Researchers partnered with a Kenyan sugar company, which employs about 80,000 small-scale sugarcane farmers using a contract farming model. In contract farming, a farmer signs an agreement to sell his crops to the company at harvest time for a nationally-regulated price. At the start of planting season, companies typically offer farmers inputs such as seeds and fertilizer on credit, repayable in the future as a deduction from harvest revenue. This same payment schedule can also be used for insurance: the company can offer insurance at planting time, with the premium payment deducted from harvest revenue.

## Details of the Intervention

In partnership with the sugar company, researchers offered farmers crop insurance and varied the timing of the premium payment to evaluate whether payment after harvest would increase demand for the insurance. From a sample of 605 sugarcane farmers, researchers randomly assigned farmers to one of three groups:

1. **Standard Offer:** Farmers were offered insurance at the market rate and had to pay the premium at planting time.
2. **Discounted Standard Offer:** Farmers were offered insurance with a 30 percent discount at planting time.
3. **Harvest Deduction Offer:** Farmers were offered insurance at the market rate, but the premium cost (plus interest) was deducted from their revenues at harvest time.

The sugar company offered identical insurance products across all three groups. If an insured farmers' plot and neighboring farmers' plots produced substantially less than predicted, the sugar company would distribute a payout covering up to 20 percent of the farmer's predicted revenues.

The researchers complemented this experiment with two other experiments, to understand why delaying premium payments might increase demand for insurance. In the first, among a sample of 120 farmers, researchers gave a randomly-selected half of the farmers an amount

of cash that was slightly more than the insurance premium, ensuring that these farmers could purchase insurance if they wanted to.

In the second, researchers offered another 120 farmers the choice between a cash grant equal to the insurance premium or free insurance. To test whether farmers suffer from present bias, a randomly-assigned half of these farmers were told that they would receive their choice immediately, while the other half were told that they would receive their choice in one month. If farmers did suffer from present bias, then introducing a gap between the time of the choice and the time of the benefit could help overcome their tendencies to care more about income in the present than potential losses in the future.

## Results and Policy Lessons

Overall, researchers found that farmers were much more likely to purchase insurance when they did not have to make the premium payment until after the harvest. While only 5 percent of farmers who were offered standard insurance decided to purchase it, 72 percent of those offered the harvest deduction insurance purchased it. In contrast, offering a discount on standard insurance did not increase farmers' demand for it.

The researchers considered three reasons why demand for standard insurance was low, and why delaying premium payment could increase it: farmers may have limited cash to purchase insurance before the harvest; they may suffer from present bias; and they may not trust insurance companies to come back at harvest time. Giving farmers cash grants had little effect on purchase rates for standard insurance, yet delaying the premium payment by just one month increased purchase rates.

Taken together, these results show that farmers were much more willing to purchase insurance when they could pay the premium after the harvest. While other factors, such as distrust towards the insurer, may matter as well, two important drivers of the results are limited cash availability around planting and present bias.

See researcher Lorenzo Casaburi talk about the project below:

August 24, 2016