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AGRICULTURAL INDEX INSURANCE HAS BIG IMPACTS FOR FARMERS IN BURKINA FASO

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A devastating drought or other shock can force small-scale farmers in developing economies to sell off assets or cut meals and other consumption to cope. Even the risk of a shock can stifle their future by pushing them to underinvest in profitable but risky activities like cotton farming. In a randomized controlled trial (RCT) in Burkina Faso, we found that farmers who purchased insurance made significantly more investments for higher future income despite implementation challenges, adding evidence for the high potential of agricultural microinsurance for development.

KEY FACTS

The risk of catastrophic shocks, such as drought or flood, can keep agricultural households trapped in low-risk but low-return activities.

Sesame cultivation among insured households was 17.3 percentage points higher than among non-insured households, an indirect impact because implementation challenges prevented impacts on cotton cultivation.

Insured households also increased their livestock substantially. On average, insured households increased their holdings by 1.6 cattle and 6.8 chickens.

These indirect impacts confirm a key feature of how index insurance provides agricultural households the security to take advantage of productive opportunities that can create a pathway toward greater prosperity.

When small-scale farmers face significant weather-related risks, many choose to plant only low-risk food crops. Food crops are cheap and are likely to keep farmers and their families fed, but will not create a pathway to a better livelihood. Recent studies show that in Burkina Faso the poorest households are trapped in farming basic food crops like millet and sorghum rather than high-return cash crops like cotton or sesame.[1]

Agricultural index insurance has emerged as a promising tool to help farmers overcome the pervasive effects of weather risk. Index insurance avoids the high costs of conventional insurance by basing payouts on an outside index of factors, such as an area's rainfall or vegetation growth, that can be used to accurately estimate average crop losses. This feature makes it possible to offer affordable agricultural insurance to small-scale farmers in developing economies.

Insurance promotes development and resilience in two ways. Payouts for losses help farmers avoid selling assets, cutting meals or pulling children from school. However, the security of being protected in itself can empower farmers to invest more in crops that generate higher income. These increased investments and the resulting higher income create a pathway to greater prosperity.

Cotton is one of these risky but profitable crops. Because cotton requires more agricultural inputs and labor than other crops, small-scale farmers often forgo this profitable opportunity or limit how much they plant in order to minimize their risk. We recently completed a pilot intervention among cotton farmers in Burkina Faso to measure just how much index insurance would impact farmers' investments.

Measuring Impacts in Burkina Faso

The pilot began in 2014 in the Houndé region of Burkina Faso, one of the country's main cotton-producing regions. The project took advantage of the structure of the region's cotton sector, where a single cotton company provides farmer groups inputs on credit and purchases all of the cotton they harvest. We worked with the main local cotton company, a specialized microinsurance broker and other project partners to develop and offer farmer groups an area-yield index insurance product that triggers payouts based on the amount of cotton purchased in an area.

We collected data from 1,000 households in 80 farmer groups in January 2014, before the intervention, and again in January 2015. We also conducted qualitative fieldwork in June 2016. The intervention was randomized: half of the farmer groups were randomly offered insurance on credit, and the others served as the control group and were not offered insurance. We also randomly provided subsidies to cover up to 75 percent of the insurance cost. Take-up was very high: approximately 45 percent of the farmer groups offered the insurance purchased it.

Impacts on Investments and Wellbeing

When we consider the impacts of an insurance intervention, one type of impact is how well payments for losses function as a safety net. In

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Burkina Faso, insured farmer groups received large payouts for significant losses in the 2014-15 season. Even though the payments arrived late, farmers reported that these payments saved them from bankruptcy and serious social conflict while allowing them to buy back assets they sold to pay back their cotton credit. One farmer said, "… we did not know that we would receive insurance payments. Since we had already sold our livestock, our cereals and other things to pay our debt, we were living in misery until the insurance payments arrived." Another said, "…we would not have been able to continue farming. We sold almost everything even the food."

We anticipated that purchasing insurance would lead to greater investments in cotton production. In an identical pilot in Mali, which a coup d'état forced us to halt, farmer groups who purchased insurance increased their cotton planting by between 25-40 percent.[2] In contrast, there were no such results for cotton in Burkina Faso due to missteps with implementation. There, the insurance was sold months after cotton inputs were purchased so it could have no impact on the intended cotton investments.

Purchasing insurance did, however, have substantial indirect effects on other investments, which confirms the risk-mitigating impacts of insurance. Sesame cultivation was 17.3 percentage points higher than for non-insured farmers. Like cotton, sesame is primarily a cash crop but has low input costs and rapid sales after harvest.[3] Insured households also increased their livestock holdings on average by 1.6 cattle and 6.8 chickens.

The intervention had other challenges beyond timing that make these impacts even more significant. Only 53 percent of individual insured farmers knew they were insured. With relatively low awareness of coverage, our results are likely to be driven by the smaller proportion of farmers who did know they were protected by insurance.

Supporting Long-term Resilience

These results demonstrate how powerful index insurance can be as a tool for economic development. A quality insurance contract steps in as a safety net in the event of a shock but the real development impact happens when it provides farmers the security to take on more productive risk, increasing their productivity and their long-term resilience. These impacts are why our partners in Burkina Faso are working right now to scale up the intervention country-wide.

These successes for a microinsurance intervention—meaning insurance targeted to farmers—are especially important considering debates on the best way to deliver agricultural index insurance for development. Low levels of uptake for microinsurance have contributed to calls to use index insurance at the meso-level, which would insure agricultural loan portfolios for banks and other financial entities, or as a tool for governments to manage country-level disaster risk.

Index insurance interventions should stay focused on the development impact they are intended to achieve. Insurance can work as a safety net, but the real development opportunity comes from how farmers boost their investments in productivity when they know they are protected. Index insurance at the meso- or government-level might be easier to implement, but they do not drive investments that create the biggest impacts for individual farmers.

We should not give up on index insurance built for farmers despite low uptake in the past. To do so would be to miss a significant development opportunity worldwide. As research has shown that the high cost and low quality of contracts have both contributed significantly to low demand,[4] our priority instead should be to develop better products at lower costs, increasing the real value they provide.

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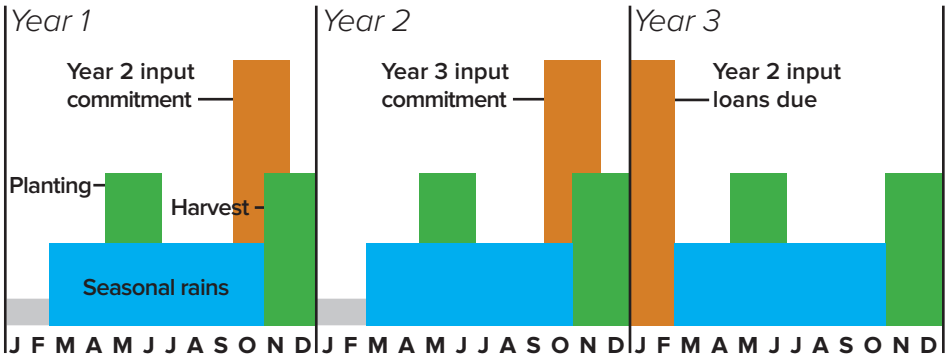
[1] Stoeffer, Q. 2016. "Crop portfolio choices in Burkina Faso." Journal of Developing Areas.
[2] Elabed, G. et al. 2014. "Ex-ante Impacts of Agricultural Insurance: Evidence from a Field Experiement in Mali." UC Davis ARE Working Paper.
[3] Stoeffler, 2016
[4] Schickele A. 2016. "Make it rain." Policy Bulletin. Abdul Latif Jameel Poverty Action Lab.

Timing Index Insurance Sales for Development Impact



This timeline shows the critical role of timing insurance sales and payouts to when cotton farmers in Burkina Faso make decisions about inputs and planting. Insurance sales that coincide with commitments for cotton input purchases will have the biggest impact on productivity investments. Payouts that coincide when input loans come due after harvests ensure farmers will not need to sell assets to pay back loans.

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The AMA Innovation Lab at UC Davis mission is to conduct and support research on policies and programs designed to help poor and smallholder farmers worldwide to manage risk, adopt productive technologies and take an active part in economic growth.

With core funding from the USAID Bureau for Food Security to support the U.S. government's global hunger and food security initiative, our research agenda focuses on:

- Financial innovations and risk management
- Adoption of more productive agricultural technologies
- Synergies possible by bundling financial and technological innovations

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