

BASIS ASSETS AND MARKET ACCESS INNOVATION LAB



USING INDEX INSURANCE TO ENHANCE THE AGRICULTURAL CREDIT SYSTEM IN GHANA

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CROP LOSSES HURT BOTH FARMERS AND LENDERS

INDEX INSURANCE, WHILE PROMISING, HAS OFTEN produced disappointing results in many developing countries in which it has been implemented. Index insurance, which covers the policyholder based on an external index such as rainfall or other weather-related measures rather than individual losses, has the potential to improve the lives of farmers in developing world by allowing them to manage the risks of droughts, floods, or other natural disasters. However, skepticism has been growing regarding the benefits of index insurance sold directly to farmers. Many index insurance studies have found that significant uptake occurs only when it is heavily subsidized or coupled with low-interest loans, with the demand disappearing as soon as the subsidy is eliminated. Index insurance has proven especially ineffective when borrowers can easily default on loan repayments without suffering major consequences such as the loss of collateral. When widespread default occurs due to a natural disaster, lenders suffer along with the farmers.

In such situations it is clear that the farmer, the insurer, and the lender are undeniably linked. If insured farmers experience widespread drought, the insurer experiences heavy losses and consequently demands higher insurance rates that most smallholder farmers in a developing country cannot afford. If the farmers cannot afford insurance, they will not buy it. Without insurance they are reluctant to take on the additional risk of a loan and are thus unable to afford to adopt new technologies that would allow them to earn more income. Lenders who experience widespread loan defaults due to recurring droughts, floods, and other adverse systemic natural events reduce the availability of agricultural credit and either raise the interest rates for agricultural production loans or engage in more restrictive non-interest credit rationing. We are hoping to break one part of this vicious cycle by introducing a new type of loan product.

KEY POINTS

Recent research suggests that smallholder access to agricultural credit can be dramatically increased if the payout goes directly to the lender rather than to the farmer.

When index insurance is integrated into lender into lender's credit portfolios and loan policies, the incentives for strategic default by smallholders are curtailed, substantially reducing the negative impacts of widespread loan defaults on lenders due to an extreme weather event.

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A NEW TYPE OF AGRICULTURAL LOAN PRODUCT

Recent research suggests that smallholder access to agricultural credit can be dramatically increased if the payout goes directly to the lender rather than to the farmer. Using index insurance in this fashion effectively creates a new type of agricultural loan product, the contingent credit contract, in which the amount the smallholder has to repay the lender is reduced if not eliminated in the event of a drought or other insured event, since the outstanding debt balance is automatically covered by the insurance payout received by the lender. This system is akin to



car insurance in the United States, in which auto lenders require the purchase of insurance before a car is driven off the lot as a condition for a car loan. In the event of a total loss on the automobile, the lender receives the payout, who then passes the remaining amount on to the owner after deducting the loan balance.

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CAN INDEX INSURANCE STRENGTHEN AGRICULTURAL CREDIT MARKETS?

To support the use of agricultural credit using index insurance The Ohio State University (OSU) and the African Center for Economic Transformation (ACET), in collaboration with the University of Ghana, will undertake a program of research, outreach, and education. OSU/ACET will work closely the Ghana Agricultural Insurance Programme (GAIP),

an organization of 19 Ghanaian insurance companies whose primary mission is to assist members in creating, designing, rating and implementing crop insurance products in Ghana. GAIP's insurance products already include products based on rainfall levels, satellite vegetation indices, and area yields. In fact, GAIP, in collaboration with the Ghana National Insurance Commission, conducted a detailed agricultural insurance feasibility study in the first half of 2010. The study found "a major need in Ghana to improve farmers' access to rural finance if they are to invest in improved seed and fertilizer technology and to thereby increase their production and yields and farm incomes". The study further proposed introducing "crop insurance as part of a coupled program with production credit, seeds and fertilizers

and preferably with output marketing assistance". The coupling of agricultural insurance with credit through rural banks, micro-finance institutions, input suppliers, exporters, processors, and cooperatives has thus become the focus of current and planned GAIP activities.

To test the hypotheses that contingent credit backed

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by index insurance will reduce the impact of widespread agricultural loan defaults on lenders during

adverse systemic natural events, OSU/ACET will conduct a series of randomized controlled trials. The trials will evaluate the impact of index-insurance-contingent loans on a) the incidence of loan defaults and of losses from default during droughts and other systemic events that reduce aggregate yields; b) the

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The GAIP project, which is on the verge of expansion, provides an exceptional opportunity for such an evaluation. The opportunity arises because product design and distribution have largely been settled, but the proper use of these instruments remains debatable. Outcomes and impacts of the coupling of credit and index insurance will depend on changes in lender and smallholder behavior. Index insurance will change the lender’s terms of access to credit, but how the smallholder responds to index insurance will drive the level of effect. Consequently, smallholder outcome indicators will serve as proxies for lender behavioral responses.

PROJECT TIMELINE

The OSU/ACET research program, begun in August 2013, is scheduled to run for three years. Starting in 2014, OSU/ACET will conduct the randomized controlled trial, implemented in three distinct stages, to smallholder maize farmers residing in northern Ghana, near the regional trading center of Tamale. To date we have completed all preliminary work and are planning to launch the baseline survey in No-

vember 2014. The Institute of Statistical, Social, and Economic Research (ISSER) will implement and administer the survey and data collection. ISSER has extensive experience with implementation of surveys in Ghana, and has worked with various internationally recognized academic researchers implementing randomized controlled trials. Results should be available in early 2015 before the launch of our second follow up survey that will take place a year after the baseline. A second and final follow up survey will take place from May to August 2016.

Currently, OSU-ACET is in negotiations with a lender, SINAPI ABA MicroFinance, to work with approximately 800 of its qualified smallholder clients over two agricultural seasons, starting in 2015. These clients would be randomly assigned to one of three groups. Group one would receive a conventional

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production loan at rates and conditions determined by the lender. Group two would receive a conventional loan at rates and conditions determined by the lender and an index insurance contract for the amount of the loan, with the premium paid to the insurer by OSU-ACET on the borrower’s behalf. Group three would receive a contingent credit loan at rates and conditions determined by the lender, with an index insurance contract purchased by OSU-ACET and transferred to the lender, with the understanding that any payout of the insurance to the lender be used to retire the borrower’s debt.

ANTICIPATED PROGRAM IMPACTS

Lessons learned from our study will inform policymakers throughout the developing world about the potential for index insurance to promote economic transformation of the agricultural sector. The project will work closely with GAIP and the University of

Ghana to implement an aggressive outreach and education program to raise public awareness about the use of contingent-credit index insurance. Through these efforts, the project expects to have a significant impact on building a sustainable agricultural insurance system

“The project expects to have a significant impact on building a sustainable agricultural insurance system and enhancing the performance of the agricultural credit system to the benefit of both farmer and lender.”

and enhancing the performance of the agricultural credit system to the benefit of both farmer and lender. The outreach program will be geared to smallholders, producer groups, implement dealers, input suppliers, cooperatives, exporters, processors, government officials, insurance companies, commercial banks, microfinance institutions, NGOs and donor organizations. The program will cover best financial risk management practices employing index insurance.

Some potential impacts of the OSU/ACET program include:

- Increased adoption of index insurance by financial institutions and others,
- Expansion of the insurance schemes to stakeholders involved in non-traditional agricultural production,
- Adoption of contingent credit index insurance schemes in other regions of Ghana,
- Expansion of lending to smallholder farmers due to lower default risk for financial institutions,
- Reduced interest rates for agricultural loans due to lower default risk and increased lender competition, and
- Increased adoption of improved production technologies brought about by better access to agricultural loans and crop insurance.



B A S I S

The BASIS AMA Innovation Lab is a virtual institute hosted at the University of California Davis comprised of researchers from around the globe that aims to improve the agricultural competitiveness and quality of life of the rural poor in the developing world through policy-relevant research that is dedicated to improving access to resources and enhancing the operation of markets.



Hosted at the BASIS AMA Innovation Lab, the Index Insurance Innovation Initiative (I4) is a response to the overwhelming evidence that uninsured risk can drive people into poverty and destitution, especially those in low-wealth agricultural and pastoralist households. To rigorously test the hypothesis that by removing correlated risk from smallholder agricultural and pastoral systems we can reduce poverty and deepen financial markets in agricultural areas, the I4 team will design and implement a new generation of livelihood-optimized index insurance contracts.



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