



## Innovation Lab for Assets and Market Access Spotlight

### AN AUDIT RULE TO PROTECT FARMERS IN CASE AN INSURANCE INDEX FAILS

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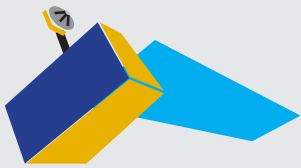
Index insurance has shown great promise in helping poor and vulnerable farmers to manage the risks associated with climate-related disasters like drought and flood. Index insurance works for development because it avoids the high costs and logistical challenges of offering conventional insurance in developing agricultural economies.

However, even the highest quality index insurance products carry the risk of failing to pay when farmers experience losses. This is because index insurance links payouts to outside factors, such as levels of rainfall, vegetation growth or an area's average crop yields rather than verified individual claims. An index of these factors predicts average losses in an area, not individual losses.

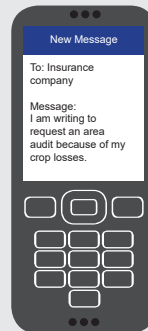
For this reason, index insurance will always carry basis risk, meaning a chance that the predicted losses do not match up with real losses on the ground. To minimize the risk that an index insurance contract will fail to pay out in the case of unpredicted but widespread losses, AMA Innovation Lab researchers are testing an audit rule so farmers can be sure their index insurance product has functioned as it should.



### HOW AN AUDIT RULE ENSURES THAT INDEX INSURANCE CONTRACTS PAY OUT WHEN THEY SHOULD



A satellite-based index for insurance is used to estimate average crop losses in an area.



With an audit rule, if enough farmers register complaints, their insurance company is required to conduct an area-yield audit to verify the index is working.



There is always the risk these estimates will not trigger payments when they should.

If the audit shows that the index failed to recognize insurable losses, farmers receive the payments they are due.



## An Audit Rule as a Failsafe for Farmers

Area-based yield index insurance, which is based on the average yield of all producers in an area, is the most reliable type of index insurance. However, in practice area yield measurements are very expensive. They are typically only possible without high additional costs in supply chains with a single buyer or where governments already regularly collect data on agricultural yields.

For farmers with index insurance products based on remotely measured outside factors like rainfall or vegetation cover, an audit rule gives them the right to petition their insurance company to have an agronomist measure average village yields if the index fails to trigger payments despite losses on the ground. It functions as a failsafe so farmers can be secure that they will receive payouts when they are most needed.

An audit rule should ensure that index insurance contracts based on remotely measured data offer the same protection as contracts based on area-yield measurements. However, to be cost effective, the underlying index of those contracts must be reliable. Otherwise expensive audits triggered too frequently can make the product cost more to an insurance company than farmers will pay in premiums.

## Audit Rule Pilot Project in Tanzania

A recent AMA Innovation Lab pilot project in Tanzania demonstrated the importance of an audit rule even with a product based on the most accurate index possible. The research team based the insurance contract on a combined index of historical rainfall and vegetation growth data, which they then compared against average village crop yields going back up to ten years.

The contract would trigger payments when estimated yields fell below 60 percent of their historical average. The audit rule allowed farmers to send the insurance company a text message if payments did not trigger but they believed yields in the area are below 60 percent of normal. If more than 30 percent of farmers registered a complaint, the company would be bound to carry out an audit for verification.

Despite the overall strong performance of this combined index, the research team estimated it would still fail to trigger for severe losses 13 percent of the time. This failure rate highlights the imperfection of even this multi-index insurance contract and the importance of the fail-safe audit option so farmers can be confident in the product.

## An Audit Rule as Part of a Safe Minimum Standard (SMS)

Contracts that fail to pay when they should can have serious consequences for a farmer without the recourse of a mechanism like an audit rule. An audit rule can provide added security farmers require to invest their limited funds in a more productive future.

Even the highest-quality index insurance contracts can fail, and this bias risk is one reason why the widespread adoption of index insurance among small-scale farmers remains low. To help encourage the wider adoption of index insurance in developing economies, we must consider mechanisms like an audit rule that build trust in the products and provide security for vulnerable farmers.

As index insurance products remain unregulated, the development and enforcement of a Safe Minimum Standard (SMS) for quality could prevent the sale of low-quality, risk-laden contracts that create distrust among farmers and undercut the market. An audit rule can be a core part of these standards to ensure that these products function as they should, even as the indices upon which they are built continue to improve.

## PROJECT OVERVIEW

### Lead PI

Michael Carter, UC Davis

### Partners

World Vision

### Timeline

2013-2014

### Funding

\$122,920

### Region

Northeastern  
and north-central  
Tanzania

### Key Innovation

Satellite-based  
index to predict  
crop yields

### Commodity

Rice

## ABOUT THE FEED THE FUTURE INNOVATION LAB FOR ASSETS & MARKET ACCESS

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

Online at: <http://basis.ucdavis.edu>.



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B A S I S

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