



INSURANCE INNOVATIONS FOR DEVELOPMENT AND ADAPTATION

FREQUENTLY ASKED QUESTIONS



1. HOW IS CLIMATE CHANGE IMPACTING FARMERS?

Climate change impacts, such as higher temperatures, stronger storms, and changes in rainfall patterns, threaten to reduce agricultural productivity in developing countries. For many farmers, climate change means more extreme and more frequent “bad” years,¹ such as years with droughts, floods, or late starts to the rainy season. Farmers must try to manage those risks, and be more productive in the remaining “normal” years, even if those years are not quite as good as they used to be.

2. HOW CAN INSURANCE HELP FARMERS BE MORE PRODUCTIVE AND ADAPT TO CLIMATE CHANGE?

Most of the things farmers can do to increase productivity require taking chances. For example, a farmer might be able to increase yields by using high quality seeds. But smallholder farmers who lack savings would need a loan to buy those seeds. Farmers may worry about making that investment, because if those high yielding seeds are more costly and more sensitive to rainfall, their losses may be even higher in a bad year than if they had used the regular seeds. Furthermore, if banks think that farmers are at high risk, they may not be willing to make those loans in the first place. If insurance can address climate risks and thereby increase banks’ willingness to make loans, and help farmers feel comfortable making those additional investments and using new technologies, then farmers could take advantage of productive opportunities that bring them higher income in most years. In other words, insurance can build resilience not only by providing a payout in bad years to help farmers survive and protect their assets – it can also unlock opportunities to increase productivity in the better years.

Insurance may be purchased directly by individual farmers, as illustrated by the examples in this fact sheet, or it may be purchased by a group, such as a cooperative, microfinance institution, or national government. It can be beneficial to combine approaches at multiple levels; for example, farmers could buy insurance to address their production risks and national governments could buy insurance to manage country-wide crises.

3. WHAT IS THE DIFFERENCE BETWEEN CONVENTIONAL INSURANCE AND INDEX INSURANCE?

With conventional “indemnity based” insurance, payouts are based on what happens to an individual farmer’s crop. It does not create an incentive for farmers to work hard to save a crop in a bad year. Moreover, the adjustment process – the inspection of individual losses to determine payouts – makes conventional insurance extremely costly to administer in developing country contexts where populations are often remote and plot sizes are small. Index insurance is an alternative that addresses many of these shortcomings. Payouts are triggered not by observed damages like failed crops, but rather when an index – such as wind speed or an amount of rain during a certain window of time – falls above or below a pre-specified threshold. Farmers have an incentive to try to keep their crops alive, because the payment does not depend on proving they had losses, so they can try to maximize their farm income and still have a chance at getting an insurance payout. The index also eliminates the need for farm visits. However, as discussed later, index insurance also has many limitations.

¹ IPCC, 2007

Photo: Farmers working in a rice paddy in Indonesia (Credit: IRI)

Therefore, index insurance and conventional insurance may be applicable in different contexts, depending on how important it is to protect incentives and reduce administrative costs, and how closely indices can be correlated with the loss that we hope to cover.

4. WHAT IS THE INDEX BASED ON?

An index can be based on any objective data source for which there is a historical record and that closely correlates to the loss that is the subject of concern. For example, one type of index insurance triggers payouts when very low rainfall is measured by an official rain gauge, indicating drought.² Another type is called an area yield index, where insured farmers get a payout if the measured agricultural production for the region is below a predetermined amount.³ Indices have been based on many different things, including temperature, wind speed, evapotranspiration – the loss of water from both soil and plants – and seasonal forecasts. Satellites have often been used to collect this data. There is a great deal of work being done to understand the benefits and limitations of various indices, and how to understand when and where to use particular indices and triggers in order to design a contract that most closely correlates to the loss.



Farmer index design discussions in the Dominican Republic (Credit: IRI)

5. IS INDEX INSURANCE “RELIABLE ENOUGH”?

The most accurate calculation of payouts based on measurements of rainfall, wind, or other quantities will always have some level of disagreement with actual losses on a real farm. This is because correlations are never perfect, and because multiple farmers, who will typically have somewhat different losses, must often be covered by the same index formula and data source. Farmers may get a payout even when their crops survived, or they may experience losses when the index was not triggered. The difference between the farmer's actual losses and the expected payout on an insurance contract is known as “basis risk.” Basis risk might occur for many reasons: the index formula may not exactly reflect real world farmer losses; index measurements from weather stations, satellites, and other sources may not be precise enough to reflect a farmer's losses; or conditions on a particular farm may be caused by something that wasn't covered by the insurance (e.g., pest-related losses would not be covered by drought insurance). While it is impossible to entirely eliminate basis risk from index insurance products, it is critical to minimize it through careful index selection, and contract design that maps the index data to historical and anticipated patterns of losses.

Insurance will never remove all of the risk from a farmer's life. The point of insurance is to transfer some risk to the insurance company so that the risk faced by the farmer is reduced enough to be helpful. Farmers need to know exactly what is and is not covered, be comfortable with the limitations of the insurance contract, and understand if it is reliable enough to allow them to make investments to increase productivity. Designing the insurance in close consultation with farmers can help. Conventional insurance can also have basis risk due to challenges in the damage verification process and the exact protection specified in the contract, so it is important to carefully examine the reliability of insurance of any type.⁴

6. DOES INDEX INSURANCE COVER ALL OF A FARMER'S POTENTIAL LOSSES?

Insurance that covers the full value of what can be lost would be very expensive. A farmer may therefore choose to only insure a portion of his or her crop or herd. Insurance may also be designed to cover only the value of inputs used, so that farmers are in a position to plant again after a bad year. Insurance contracts linked to loans for seed, fertilizer or other productivity-enhancing inputs have been shown to improve uptake of these technologies and improve financial institutions' willingness to lend to farmers.

7. CAN INSURANCE ALONE MANAGE A FARMER'S CLIMATE RISKS?

Insurance is not a stand-alone solution, but one tool of many. It works most effectively when it targets a clearly defined risk, such as drought or flooding, and is complemented by other risk management approaches that might be more appropriate to address more frequent, less severe events. For example, the risk of minor droughts could be reduced through risk reduction interventions, such as improved water storage and more efficient irrigation methods. Insurance would then be purchased to cover the risk of particularly bad drought years, when those strategies are insufficient. Used in combination, the risk reduction efforts reduce the cost of insurance by

² Oxfam, 2012 ³ Carter, 2009 ⁴ Barnett et al., 2005

reducing the likelihood of significant damages and thus the amount of insurance cover needed, and insurance improves access to finance for and incentivizes investment in the risk reducing technologies and infrastructure.

8. HOW CAN FARMERS IN DEVELOPING COUNTRIES AFFORD INSURANCE?

In the absence of insurance, farmers may actually be “self-insuring” by avoiding crops or inputs that could increase their productivity (but also their risk); thus, if the insurance unlocks a farmer’s ability to be more productive, the farmer could pay for the insurance in future years using the profits from the increased productivity.

However, insurance may still be unaffordable for a farmer who does not have access to cash at the time the insurance is being sold. Cash availability problems can be mitigated by making premiums due when farmers are more likely to have cash on hand, such as right after harvest time. Sometimes insurance is bundled with credit, and the insurance premium is factored into the interest rate, so that it does not require an outlay of cash. Other projects allow farmers to pay with their labor through “insurance for work” programs.⁵

Insurance market development is in the early stages in developing country contexts. Premiums on insurance contracts are inevitably driven up by the high up-front costs of client education and contract design, limited competition in re-insurance, and data limitations. Public good investments in things like data and capacity building may be helpful to overcome these market failures. However, it is important for the premium to accurately reflect the risks that the insurance covers, so that farmers can make informed investment decisions and balance insurance with other risk management options.

9. DO FARMERS WANT TO BUY INDEX INSURANCE? DO POOR FARMERS BUY LESS INDEX INSURANCE?

In order to be financially viable, profitable, and sustainable, insurance projects must have sufficient demand and potential for scaling. Although there are numerous examples of projects with limited uptake of index insurance,⁶ there are other projects in which the demand for index insurance is high and poor farmers purchase large amounts.⁷ While the 20-30% take-up rates of unsubsidized index insurance achieved in some projects may be considered low by some researchers, it is important to remember that those actually exceed some take-up rates of unsubsidized conventional insurance in industrialized countries like the US.⁸ In Ethiopia, very poor farmers have demanded more aggressive insurance packages, even though the increased coverage costs them more money.⁹

Demand is correlated with farmers’ awareness and understanding of the product, and their trust in the insurance provider: Demand will also go up if the product being offered is perceived as valuable. But a 100% take-up rate is probably not desirable; any given insurance product will not be right for every farmer – it depends on the risks they face, the crops they grow, and what other tools they have at their disposal to manage their risks. The goal of an insurance project should not be solely to maximize demand, but to meaningfully address poverty and climate change adaptation issues in a financially viable model.

In many unsubsidized index insurance projects, the project’s basic capacity to support client signup, insurance pay outs, and administration for the number of farmers who want to buy the product is the main constraint, as opposed to demand,¹⁰ demonstrating an additional need to develop cost-effective supply and delivery channels.

10. CAN INSURANCE SCALE?

Several recent index insurance projects for low-income farmers in developing countries have grown beyond the pilot stage – from only a few hundred clients to many tens of thousands of clients in only two to three years.¹¹ Insurance projects that have scaled have found strategies to address the questions discussed above, and many other issues beyond the scope of this fact sheet.



Farmers’ insurance suggestions during a village meeting in Senegal (Credit: IRI)

⁵ Projects in which many poor farmers purchase insurance (e.g. Horn of Africa Risk Transfer for Adaptation (HARITA)) tend to rely on such strategies. Oxfam, 2012.

⁶ Banerjee and Duflo, 2011; Cole et al. 2009; Binswanger-Mkhinze, 2012 ⁷ Karlan et al., 2012 ⁸ For example, only about 12% of people in California purchase earthquake insurance. California DOI. ⁹ Norton et al., 2012 ¹⁰ Hellmuth et al., 2009; Oxfam 2012 ¹¹ Hellmuth et al., 2009; Oxfam 2012

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