

How to provide sustainable insurance for low-income farmers¹



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Agriculture is the main source of poor people's income and employment in most developing countries. But it is an uncertain business, particularly for the poor, and calls for risk mitigation, risk transfer and risk coping. Improving these mechanisms can have large benefits, as the risk is costly. Insurance can not only reduce risk for farmers but increase productivity, by supporting credit.



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To protect farmers from covariate risks – most of all weather – many pilot projects for formal insurance undertaken since the early 1970s, but these have produced mixed results. With traditional, indemnity-based approaches to crop insurance proving unsustainable, most pilots offered index insurance that promised smallholder farmers low-cost protection against key perils such as low rainfall, while involving no moral hazard for the insurer.

In view of the pilots' limited success, developing sustainable insurance for low-income farmers needs to begin with a review of:

- What providers have learnt from agricultural microinsurance pilots, including why the public sector must be engaged;
- the need for better value, through mutuality and meso-insurance; and
- lessons for developing markets, including the critical role of a national agricultural policy.

What providers have learnt from agricultural microinsurance pilots?

Agricultural insurance is not a complete solution

A lesson drawn from the pilots' mixed results is that agricultural insurance alone cannot be the entire answer

to risk faced by smallholder farmers. Risk coping needs to be combined with other mitigation and transfer mechanisms.

Given the high costs of formal insurance, it makes sense to insure the extreme, low-probability shocks and, for the less extreme but frequent shocks, retain part of the risk, using savings, credit or even risk-sharing with family and friends (Figure 1).

Public sector roles are critical for sustainable scale-up

Although many pilots have focused on the role of the private sector, the successfully scaled-up programmes have typically been private-public partnerships. Government's role is critical in creating the enabling risk market infrastructure which scale-up requires. And many aspects of agricultural insurance are natural monopolies, like data collection for reliable, high-quality indices.

A good example of the positive involvement of the public sector is the National Agriculture Insurance Scheme (NAIS) of India, the world's largest crop insurance programme, which has covered 192 million farmers since its inception in 1999. This public-private partnership (PPP) involves a long-term commitment, large subsidies, and coordinated investment in infrastructure for weather stations and remote sensing data. Piloted to scale-up, the scheme is compulsory for borrowing farmers, and has had substantial involvement from the private sector since 2007.

Farmers want reliable protection

A long-standing problem in providing agricultural insurance – and other personal insurance, for that matter – is that

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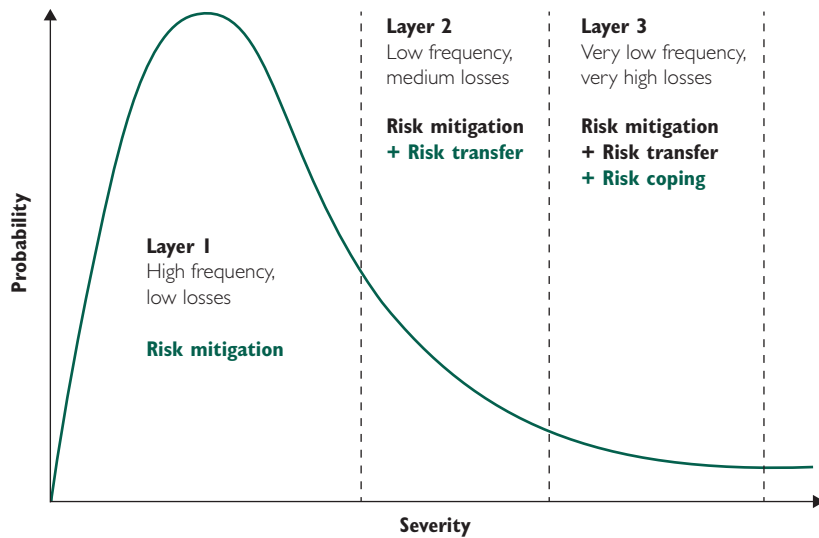


Fig. 1: Agricultural insurance is not a complete solution to agricultural risk (Source: Work Bank Disaster Risk Financing and Insurance Program (2012))

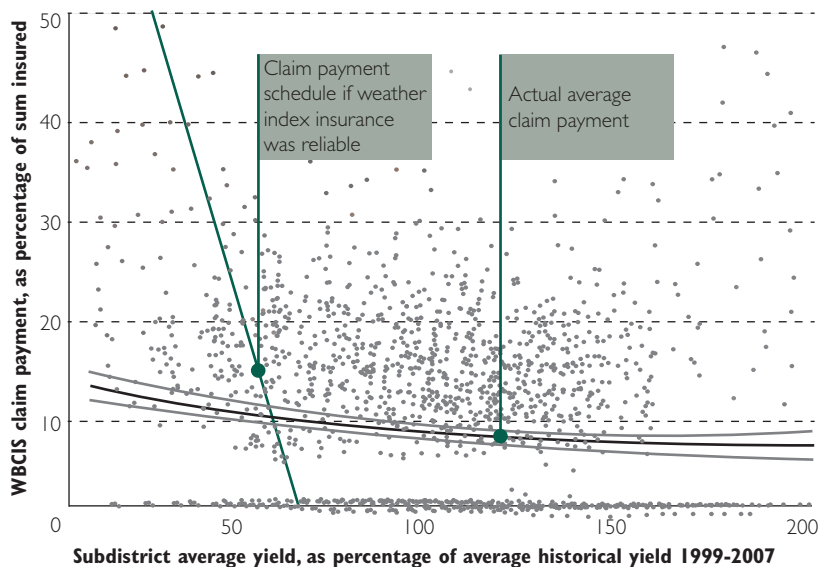


Fig. 2: Subdistrict average yield, as percentage of average historical yield 1999 – 2007 (Source: Clarke, DJ., O. Mahul, K.N. Rao and N. Verma, (2012): «Weather Based Crop Insurance in India», World Bank Policy Research Working Paper 5985)

farmers do not believe that a product will pay when they most need it. The main reasons are low trust in the insurance business, exclusions / «small print» in the policy, and risk of insurer default as stories of fly-by-night operators abound. If the product is index insurance, yet another reason goes on this list: basis risk, that is, the risk that the claim

payment does not match the farmer's loss.

For many farmers, insurance at best replaces the uncertainty of their occupation with an uncertainty of its own. To supplement any informal social ways they may be using to deal with financial risk, they want protection they can count

on. The challenge for providers of such protection is to not only develop technically sound and acceptable products but also promote and deliver them in a way that builds trust and reliability.

Weather index insurance offers no reliable protection

There is currently no convincing statistical evidence from any programme suggesting that weather index insurance can be relied on to pay in years that are bad for smallholder farmers. This is borne out by an analysis of nine years and yield data for 318 index insurance products sold in an Indian state (Figure 2).

The correlation between area average yields and indexed claim payments is only minus 13 percentage. This low correlation can be explained by the fact that perils other than weather-related can cause catastrophic losses. Besides, the behaviour of the farmer is difficult to capture for modelling purposes – and long-term data is often not available for proper model calibration.

A private-public partnership facilitated the implementation of WBCIS. It involved the National Bank for Agriculture and Rural Development (NABARD), the Indian Meteorological Department and NGOs. It ensured

- the setting-up of weather stations covering a smaller area for robust results;
- locally trained management of these stations;
- a stronger stake for farmers in the scheme;
- stronger support from banks for insurance coverage of all borrowing farmers;
- easier and faster claim settlement, generating as a by-product reduced transaction costs for the insurance company also.

Need for better value

Mutuality may be a missing link

The formal sector cannot offer affordable protection for small local (idiosyncratic) shocks. These are plagued with high cost

A case study in partnership from Maharashtra

Although Maharashtra is a highly industrialised state in India, and the richest, agriculture continues to be the main occupation of the state. Two agricultural insurance schemes are at work there: the National Agriculture Insurance Scheme (NAIS) and the Weather-Based Crop Insurance Scheme (WBCIS).

NAIS was set up in 1999 and has since covered more than 192 million farmers. This scale is the result of linkages with banks and credit. Bank branches and credit cooperatives are enthusiastic participants; they automatically deduct the premium from loan payments and send it to the insurance company. The scheme is subsidised by the government. There is some dissatisfaction among farmers because the area unit for yields is a block or sub-district and huge yield variations often occur in the same block, resulting in long drawn-out claims settlement.

WBCIS was introduced as a pilot in 2007 and later scaled up. In the case study district, farmers' satisfaction with this product is higher. The main reasons are: the presence of modern weather stations, reliability of weather data, localised area, transparency of data and information sharing locally, belief that the data cannot be manipulated, quicker claims settlement, and flexibility in the insured sum. The premiums for WBCIS are also subsidised by the government.

and moral hazard. Clearly, better claim-payment rules are needed, and mutual-ity may be at least a part of the answer as communities themselves are involved in covering these shocks. For large local (systemic) shocks, the formal sector should be able to offer reliable protection – on a group basis along the lines of Mexico's Fondos, or area-yield or area-revenue basis as in India's Modified NAIS, or by using satellite or weather data «behind the scenes» for auditing or targeting.

Generally and historically, community-based and collectively run credit unions, with collection and disbursement delegated to a dedicated committee, are less fraught with fraud than privately owned financial enterprises. So can a mutually organized and controlled benefits arm of an agricultural insurance scheme.

Meso-insurance for lenders has potential

Providing meso-level agricultural insurance for lenders would take away the agricultural risk and leave them with only the lending risk. It would allow them to increase their exposure to the agricultural sector, and support more investment

in productivity (fertiliser, improved seeds, technology).

The International Finance Corporation (IFC), together with the International Bank for Reconstruction and Development (IBRD), the original institution of the World Bank Group, established the Global Index Insurance Facility (GIIF) to address the problem that insurance providers in developing countries rarely offer natural hazard insurance. These countries are particularly exposed to weather and catastrophic risks because of lack of infrastructure, dependence on agriculture and low insurance penetration.

The goal of the GIIF is to help develop markets for index insurance, particularly for farmers and rural communities. GIIF has served nearly 100 000 farmers through its six partners in nine Sub-Saharan African countries, Sri Lanka and South Asia. GIIF's experience has shown that

- without subsidies it is not possible to reach scale;
- it is absolutely necessary to have an efficient distribution channel to sell the insurance;
- the lack of data affects the design, so much that, for example, it can imply

that to reach scale only a million insured is enough when in reality it is ten million, or vice versa;

- the basis risk must be reduced as much as possible;
- the product must be affordable; and
- investments should be made in building distribution channels, capacity in general and innovative design.

The World Bank reported mixed results from its experience with index insurance pilots. In general, most of the pilots implemented are still working but have not reached scale and are not expected to do so in the near future. This is perhaps because the wrong initial approach to implementation has been taken by international consultants helping insurance companies develop the agricultural insurance market. The process was left incomplete and no knowledge was transferred to the countries. The consultants were hired to explain but not to support the learning processes of stakeholders involved.

The system that the World Bank is sponsoring as a corollary of past experience is to train and build capacity for local risk manager brokers so that they can implement a system approach. These brokers could go to the countries and analyse the situation along with local experts. Together they design and model an agriculture risk profile, including production risk, market risks, exchange rates, price, and conducive environment. Based on this analysis, they then identify and define priorities and specific solutions required. See also Figure 3.

Lessons for developing markets

What could schemes in developing markets learn from existing agricultural insurance schemes in developed markets?

From their experience, reinsurers, which have long served markets around the world, have drawn a number of lessons – the foremost of which is that agricultural insurance cannot be addressed in a country in the same way as other insurance lines. It must be a part of the na-

Index insurance lessons

It is important that countries and different levels of implementation entities know just what to do, and how and when to adjust the triggers of index insurance.

To achieve this hands-on experience, all stakeholders should be thoroughly trained. A modular training tool, www.agrisktraining.org, offers on-line training in topics ranging from weather to pricing.

Donors should also verify that the supply side has the technical capacity, the project is technically feasible and there are enough good quality data.

When a robust institution or pool of insurance companies is ready to start implementation, reinsurers should be on board as well, and claims and premium collection systems designed.

Always have the supply chain in mind in order to include all the possible risks, including price volatility.

Fig. 3: Index insurance lessons from the World Bank's experience

tional agricultural policy. Additional tips for providers in developing markets include the following aspects:

- System approach rather than a product approach: It requires an institutional framework that includes a PPP of government, farmers, the (re)insurance industry and the banking sector. Purely private and purely public institutional approaches have failed. This institutional structure is different in each country and should be tailor-made to the economic and social conditions of existing institutions. The government has the responsibilities of setting guidelines and controls, subsidising premiums and financing catastrophic losses. We need tailor-made solutions that factor in the local conditions.
- Cooperative instead of competitive approach: It is useful to have or set up a coinsurance pool and a centralised technical entity in charge of bundling and developing expertise, and to establish uniform terms and conditions of insurance. In other words, make the incentives right.
- Weather index insurance on farm level is overestimated. Experience indicates greater potential for area yield index insurance due to the various shortcomings of weather index insurance.
- Stand-alone solutions are not economically viable or sustainable. Insurance should be combined with credit. An institutional framework with participation of all stakeholders of the supply chain is necessary.

- Do not believe stories, believe data. Designing a good parameter that has a high correlation with the peril insured minimises basis risk. Education and training at all levels are a must. In other words, building capacity is the name of the game; it helps build knowledge, and thus trust. Offer reliable products, and innovate behind the scenes.
- Nationwide instead of pilot project approach: Agricultural insurance is all about spreading risks by insuring different regions and crops and by achieving a high market penetration. Pilots are difficult to scale up. Overall, one has to conclude that most pilots have been difficult to scale up. Nationwide instead of pilot project approach can be the solution. Agricultural insurance is all about spreading risks by insuring different regions and crops and by achieving a high market penetration.

Note

- 1 The article summarizes the presentations and discussion at a plenary session of the 8th International Microinsurance Conference held in Dar es Salaam, Tanzania, from 6th till 8th November 2012. The plenary session dealt with the state of agricultural insurance for the poor and how its shortcomings may be addressed. The authors acknowledge, with thanks, the contribution of the session's presenters: Daniel Clarke, University of Oxford and World Bank, UK; Joachim Herbold, Munich Reinsurance Company, Germany; Shadreck Mapfumo, IFC – Global Index Insurance Fund, USA; Satish Pillarisetti, National Bank for Agriculture and Rural Development (NABARD), India; and Carlos Arce, World Bank, USA.