

Farmers face a variety of market and production risks that make their incomes volatile from year to year. In many cases, farmers also confront the risk of catastrophe, as, for example, when crops are destroyed by drought or pest outbreaks or when assets and lives are lost to hurricanes and floods. These risks are particularly burdensome to the poor, including many small farmers. Unless adequately managed, they can slow economic development and poverty reduction and contribute to humanitarian crises.

Covariate risks, especially those that involve catastrophic losses, pose special difficulties and costs. Past attempts by governments and relief agencies to help manage covariate risks have been costly and often ineffective. Today there is much interest in index insurance products that might provide a more effective and market-mediated solution.

Index insurance

Index insurance involves writing contracts against specific perils or events (such as drought, hurricane, or flood) that are defined and recorded at regional levels (usually at a local weather station). Insurance payout depends not on the individual losses of each policyholder, but rather on the regionally recorded index of loss, which serves as a proxy for the losses in a region. Because all buyers in the same region pay the same premium rate per dollar of coverage and receive the same rate of payment, index insurance avoids adverse selection and moral hazard problems. Also, since there are no on-site inspections or individual loss assessments to perform, it can be relatively cheap to administer. It relies only on regional index data, which are already available and generally reliable.

In recent years a plethora of pilot index insurance programs have been launched around the world with the active engagement of a diverse range of players, including governments, donors, multinational agencies, international reinsurers, relief agencies, nongovernmental organizations (NGOs), private insurers, banks, input suppliers, food marketing companies, and farmer organizations.

Emerging lessons

The World Food Programme (WFP) and the International Fund for Agricultural Development (IFAD) recently conducted a review of 37 index insurance ventures in 15 countries and distilled a number of important lessons about the conditions under which index insurance is worthwhile and might be scaled up.

One key lesson that has emerged is the need to distinguish between two fundamentally different objectives affecting the design and delivery of index products. Some schemes are designed to help poor people protect their livelihoods and assets and are primarily an alternative to more traditional relief programs. Other schemes are designed to help households with viable farm businesses manage their risks. These two types of insurance are called *protection* and *promotion* insurance, respectively, in this brief.

Insurance that *protects* the livelihoods and assets of poor people from catastrophic losses inevitably must be subsidized and requires special delivery channels aligned with relief rather than development

interventions (such as NGOs and public relief agencies). On the other hand, insurance that *promotes* agricultural development should be channelled through private intermediaries. It can sell on an unsubsidized basis if it is linked to a value proposition that enables farmers to obtain new productivity-enhancing technologies or to participate in high-value markets that can significantly raise their expected incomes. Mixing these two needs in the same program all too easily leads to insurance products that must be heavily subsidized for all and that serve social rather than development objectives.

The WFP and IFAD analyzed a diverse range of index programs (see Appendix 2 for full details). Within the protection category, schemes vary from international insurance arrangements that directly underwrite government relief costs to programs run by NGOs that provide protection insurance directly to communities or farmers. They also vary with the type of index used. Although most programs use weather indexes, others use indexes based on regional estimates of crop yields or livestock mortality rates and estimates of range productivity based on weather indexes and biophysical models. Within the promotion category, insurance programs range from privately provided and unsubsidized schemes linked to value propositions for farmers to publicly provided and heavily subsidized schemes with weak or no value propositions.

Most of the programs were only recently launched, and it is still too early to judge their success. A small number failed to generate sufficient demand and had to be discontinued (for example, those in the Ukraine). But many others show promise and, while not yet large scale, are providing valuable lessons for the future. Among the promotion programs, India has achieved the greatest success, with three insurance companies reaching 1.25 million farmers in 2009, up from a 350-farmer pilot in 2003. The total sum insured in promotion schemes around the world in 2009—that is, maximum payouts to farmers and herders—is US\$1 billion. Of the protection schemes, the Mexican program has reached a large scale and continues to grow, indirectly benefiting 800,000 households in 2008, up from 600,000 in 2007.

Other key lessons include the following:

- **Focus on a real value proposition for the insured.** For protection insurance, relief agencies and vulnerable households need products that offer timely, credible, and fair relief in times of crisis. For promotion insurance, products that catalyze access to credit, technology, or new markets and help generate significant additional income can be attractive, even without subsidies. Products must also be affordable and cover the most relevant risks with minimal basis risk, and there must be opportunities to finance the premium with credit. An excellent example is the PespsiCo scheme in India. This weather-based index insurance program was designed to cover potato crop losses due to late blight disease, which is associated with weather events that can be indexed. The insurance is part of a technology package that comes with credit and a market contract and offers substantial income gains to participating farmers.

- **Find a champion or leader to overcome initial set-up problems and barriers.** Many set-up constraints with index insurance make spontaneous market-driven development difficult. In nearly all cases, an outside agent or champion has been needed to initiate and catalyze action. These champions have included multinational agencies like the World Bank (in India, Malawi, and Mexico) and the WFP (in China and Ethiopia), NGOs (like Oxfam in Ethiopia), and brokers (such as MicroEnsure in Tanzania). These agents have helped supply missing public goods (such as weather stations and insurance regulations) and establish reinsurance arrangements. They have also helped train local brokers and insurers and have assisted with the agro-meteorological research needed to identify viable insurance products.
- **Develop efficient and trusted delivery channels.** Insurers selling promotion insurance to farmers rarely have their own rural distribution networks and typically must rely on intermediaries to sell and transact the insurance with farmers. These intermediaries need to be efficient, available, and responsive to farmers' needs. They also need to be trusted, as must the insurance company itself. Where the insurance is tied to credit or farm inputs, the credibility of the supply system for the entire package becomes important. The groundbreaking BASIX deal in India in 2003, for example, was possible because this microfinance institution and livelihood supporter was already a trusted partner of farmer groups.
- **Develop weather data infrastructure.** Initial insurance pilots can be established even without historical weather data or real-time weather data services. Serious mass market players (as opposed to local niche market players) in financial markets will not engage, however, unless they can be assured of good data on risk for pricing contracts and reliable and timely data on index values in order to settle contracts in a timely fashion.
- **Transfer risk to international risk markets.** Reinsurance support is the entry ticket for any meaningful index insurance development and a crucial condition for scaling up. For example, INISER Nicaragua entered into a long-term reinsurance deal with Partner RE, and the index insurance products in Malawi are reinsured by French and Swiss reinsurers. Twenty out of the 37 index insurance deals are reinsured, representing 3.5 million cumulative policies, whereas the non-reinsured deals add up to a mere 34,000 policies. Since there are no moral hazard problems with index insurance, reinsurers are often ready to write up to 99 percent of the risk, compared with only 85 for other kinds of insurance.
- **Train all implementation actors.** Index-based insurance programs that include training and capacity development have a

clear advantage over those that do not. Training farmers in how to use index insurance as a risk-reducing investment can give them more realistic expectations about payments and greater familiarity with the nature of the product. In Ethiopia, Nyala Insurance started selling weather index insurance products for agriculture in close cooperation with the Lume Adama Farmers' Cooperative Union, which helps educate farmers in how insurance coverage and payout works.

Conclusions

Evidence shows that weather index insurance can work, but few programs have demonstrated any real capacity to scale up. Spontaneous development by the private sector has been limited, and governments or international agencies like the World Bank have had to initiate activities. This reluctance by the private sector seems related to the high barriers to entry in this market—upfront research and development costs, basis risk associated with too few weather stations, and initial problems in getting access to international reinsurance. Insurers also need to reach farmers through marketing intermediaries and partner with others in the value chain to create solid value propositions for smallholders.

If index insurance is to be scaled up, governments and donors will need to play important enabling and facilitating roles by taking the following steps, among others:

- building weather-station infrastructure and data systems and making that data publicly available on a timely basis;
- providing an enabling legal and regulatory environment;
- financing agro-meteorological research leading to product design and making the results publicly available;
- educating farmers about the value of insurance and the workings of index-based products;
- facilitating initial access to reinsurance;
- supporting the development of sound national rural risk management strategies that do not crowd out privately provided index insurance;
- subsidizing protection insurance where it is more cost-effective than existing types of public relief and using smart subsidies when needed to kick-start promotion insurance markets; and
- supporting impact studies to systematically learn from ongoing index insurance programs and to demonstrate their economic and social benefits. ■

For further reading: www.wfp.org/disaster-risk-reduction.

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