

Report of the 4th A2ii – IAIS Consultation Call

Agricultural Insurance and Regulatory Implications

26 June 2014



Governments are increasingly recognizing the relevance of insurance for farmers and rural dwellers in supporting agricultural activities. Concerns for food security, in the context of rising demand, commodity price volatility, and climate change, are putting pressure on governments to ramp up their efforts to improve farmers' access to market-based risk mitigation. For insurers, new technologies, innovations in product design and distribution partnerships are contributing to progress and opening up new opportunities. These developments require that regulators and supervisors take a close look at the associated risks.

Index insurance, which has emerged as an innovative solution for providing enhanced risk mitigation especially for small scale farmers, has introduced a new approach to agricultural risk transfer, but is often unfamiliar to supervisors, insurers and consumers. Despite the growing number of pilot projects and larger scale programs, regulatory and supervisory particularities of agricultural and index insurance have received little attention.

The fourth consultation call in the consultation call series focused on agricultural insurance and its regulatory implications. The call was held on Thursday June 26 and was attended by over 30 supervisors from across Asia, Africa and Latin America and the Caribbean. The experts on call were Richard Carpenter, International Legal and Regulatory Consultant, Michael Hafeman, Actuary and Independent International Consultant on Financial Sector Regulation and Supervision and Peter Wrede, Actuary and Senior Insurance Specialist, GIIF IBRD Program Coordinator, World Bank. The experts presented an overview of current trends in agricultural insurance, specifically focusing on index insurance and the challenges it poses to supervisors. Mr. Sriram Tarankanti from the Insurance Regulatory and Development Authority (IRDA), India - the new chair of the IAIS Financial Inclusion Subcommittee - welcomed the participants to the call, highlighting the importance of agricultural insurance in his own jurisdiction.

Differentiating agricultural insurance from other types of non-life and microinsurance

Agricultural insurance is fundamentally different from other types of non-life insurance. Agricultural insurance can vary by the asset covered (e.g. crops, livestock, or agricultural equipment), the key risks (e.g. damage or disease), the type of coverage (e.g. index or indemnity) and the scope of coverage (micro, meso or macro level), each creating specific regulatory issues for supervisors. Agricultural insurance is different because nature and weather are the key sources of risk, and natural risk tends to be systemic, meaning a risk event normally affects a whole area and portfolio of policyholders at the same time. This is why diversification of risk in large portfolios of homogeneous but uncorrelated risks works across risk types, regions and countries and reinsurance becomes fundamental for agricultural insurance. Agricultural insurance is also different from other insurance classes because it is often part of a larger government strategy for agriculture development, where policymakers seek to achieve social and economic objectives through the support of agricultural finance and insurance. In addition the commercial sustainability of agriculture insurance can be undermined by government and donor funded ex-post disaster recovery interventions that are usually provided free of cost to the beneficiaries, thus reducing the motivation for investing in ex-ante measures like insurance.

Historically, small scale farmers, which includes almost all farmers in the developing world, have been excluded from agricultural insurance due to the high cost of assessing claims and overcoming information asymmetries: the premiums do not cover the costs of visiting the farmers' scattered small plots. Index insurance overcomes this obstacle and reduces costs by automating the settlement process and doing away with the need of inspecting plots. It does so by triggering payouts to farmers on the basis of a pre-determined parameter that is straightforward to measure and that is statistically correlated with losses to the farmers, such as rainfall deficit measures that indicate drought. No individual claims assessment is needed. For this

and other reasons, index insurance is different from traditional insurance, and this has implications for supervisors. In considering the risk exposure of farmers, it is important to look beyond physical crop losses. In a drought, farmers can be expected to face other consequential losses, such as increased costs due to disruption of the delivery chain and higher costs of inputs. Focusing just on crop losses therefore may be too narrow and miss the actual risk exposure that the farmer wishes to insure. As developed more fully later, index insurance is often considered as more like a business interruption cover. There are many types of index insurance, but they broadly fall in two categories: aggregate loss (e.g. area yield and area livestock mortality) and indirect loss (e.g. rainfall, temperature, wind speed).

While index insurance has its limitations, it can make agricultural insurance work also for small scale farmers in developing countries. For this reason, index insurance is often developed as agricultural microinsurance and is therefore an important part of the inclusive insurance discussion. However, it is important to appreciate that the index insurance method has potential applications beyond index insurance and beyond agricultural insurance.

Agricultural insurance products – and especially index insurance products - are technically complex. Insurers need access to large groups of farmers to build scale and to geographically spread risk, which can enable them to diversify the pooled risks and to bring down costs, while first time insurance clients need to see that the insurance works – i.e. experience claims - to overcome consumer reluctance and create awareness.

Risks related to index based agricultural insurance

Index insurance is not indemnity insurance, in that the claims payment is not directly related to the financial loss of the insured event. Rather the claims payment is triggered by a statistical parameter, such as rainfall or average area crop yields, and based on historical data. Designing a good index therefore depends on the quality of available data to set the parameter.

In addition, index insurance gives rise to “basis risk” where the farmer experiences losses, but the insurance does not cover any or all of the loss or vice-versa, where the farmer does not experience losses, but receives a payout. Poorly designed index insurance policies will suffer from considerable basis risk and hence result in a considerable number of unhappy farmers, but even the best designed index insurance policy will have some degree of basis risk. It is not easy to distinguish between well designed and poorly designed index insurance, even when there have been claims payments.

Regulatory and supervisory challenges related to index based agricultural insurance

Regulating index insurance is new for most supervisors and currently very few countries have explicit legislation or regulations in place. There are no IAIS standards or guidance for index insurance yet, and International Financial Reporting Standards (IFRS) remain ambiguous. Because claims payments are not made against actual losses, index risk transfer products may not be considered indemnity insurance under the legal and regulatory frameworks of some countries, leaving insurance supervisors unclear whether they can even be permitted and supervised as insurance. Even where an insurance supervisor takes the view that an index risk transfer product can be considered an insurance product, for example as business interruption insurance, the regulatory frameworks of most countries do not provide for their different features and characteristics. In some cases index products can even be designed to pay in advance of the expected loss events, for example when payout is triggered by a fluctuation in the surface temperature of the Pacific Ocean known to precede an El Niño event; this makes a lot of sense but conflicts with another tenet of insurance: that loss precede payment. To date, many index insurance schemes, including the Indian scheme which covers 12 million farmers annually, have been launched as pilots with regulatory dispensation. While pilots provide an opportunity for the supervisor and the insurer to test and learn, they do not necessarily provide the market with the “rules of the game” and do not create the certainty that would crowd other players into the market. In addition, most of the primary target market,

farmers in developing countries, have no experience with any insurance and concepts such as basis risk and the index parameters leave the consumer vulnerable to misunderstandings and even abuse.

Appropriate regulation can provide an environment that encourages more players to learn from each other and enter the market to increase competition and offer better value to the consumer. When regulating index insurance, supervisors need to view it within the context of the country's agricultural policies. Unlike with life insurance or car insurance, the benefits of agricultural insurance will depend on many aspects beyond the reach of the insurance industry and supervisors. In many countries agricultural development is also a political priority and supervisors need to understand the different stakeholders involved and facilitate a dialogue amongst them. For example, as noted above index insurance schemes require the availability of historical data which is usually housed or owned within a government entity such as meteorological departments or agricultural ministries.

The different use of statistics in index insurance can challenge supervisors' technical capacity. Supervisors need to become more familiar with the agricultural sector and build partnerships with other stakeholders such as the agricultural ministry and the players in the value chain. Main supervisory concerns related to the technical and financial capabilities of the insurer in agriculture are that products are not fair and not actuarially sound and solvency not guaranteed due to inadequate provisioning and insufficient capital. Data underlying the indices can also be a concern if integrity, reliability, and sustainability over time of the data are inadequate. In many cases, insurers are entering an unfamiliar market, as well as a product line that has the potential to place pressure on financial solvency if the geographic concentration of risk is not managed appropriately.

Key considerations for regulating index insurance

Supervisors thus need to start by confirming that index based risk transfer products can be considered insurance at all and highlight how that matters, given

that potentially the securities sector regulator could regulate the product as a derivative. The fundamental question of whether the product can be considered insurance is more complex.

As indexes are not designed to cover specific losses, but to correlate more generally with losses, it is difficult, if not impossible, to position index insurance as a type of indemnity insurance. However, jurisdictions generally recognize other types of insurance that are not indemnity insurance such as life insurance and some types of personal accident cover which pay a fixed sum for specific types of injury. Where the legislation of their jurisdiction differentiates between indemnity and non-indemnity insurance, regulators may be able to consider index risk transfer products as a form of non-indemnity insurance.

Furthermore, it may be misleading to focus too closely on specific types of loss. Extreme weather events usually cause farmers losses that extend well beyond direct crop losses. For example, disruptions to the value chain and to distribution channels are likely to increase costs and cause income losses to the farmer. Therefore, even if the correlation between a specific crop loss and the index value is not high, insured farmers may well have suffered other consequential losses. If these additional consequential or "business interruption" costs are taken into account, the index value might capture the farmer's overall income loss quite well. Just as fixed sum personal accident insurance is intended to provide a level of compensation for losses that would be extremely difficult to quantify, it may be useful to consider index risk transfer products as insurance that covers a wider range of difficult to quantify losses arising out of extreme weather events.

Where index insurance is considered as non-indemnity insurance, the focus shifts to insurable interest. In the absence of a requirement for proof of actual loss, it is important to ensure that only persons who have an insurable interest are able to purchase the product. If persons who do not have risk exposure to the insured event are able to purchase the product, it could be open to speculation and lose the key requirement for insurance that it is intended to compensate for losses incurred as a result of the occurrence of an insured risk event. However, it is important to consider insurable interest

from a relatively wide perspective. For example, if ownership in land were a necessary indicator for an insurable interest in agricultural insurance, landless laborers, whose livelihoods equally depend on good or bad harvests, would be unable to obtain insurance. Likewise traders and other agricultural buyers also have an insurable interest, therefore the regulator needs to carefully choose the most relevant and meaningful indicators of insurable interest.

There are certain market conduct challenges supervisors must be aware of and deal with. On the consumer protection side, supervisors need to be aware of and manage issues arising from the basis risk inherent in index insurance contracts. Supervisors need to consider whether the contracts are fair, which means that the insured party needs to be aware of the basis risk and that the index design reduces basis risk to acceptable levels.

Regulators also need to ensure insurers provision appropriately, so that their solvency is not adversely impacted by highly volatile agricultural insurance claims ratios and payouts can be made in a timely manner. Supervisors need to be aware that index products are often difficult to price and that the usual provisioning rules may not be fully appropriate for agricultural insurance. Catastrophic risk is an important consideration for index insurance. Finally farmers often demand insurance products that pay out frequently. However insurance is more effective for low frequency, high impact events. In fact, insurance products designed to cover high frequency low impact events are an expensive and inefficient risk coping mechanism. Such products may provide poor value to consumers.

Country experience in agricultural insurance from Brazil and Colombia

In Brazil, the Ministry of the Agriculture supports agricultural insurance development through the Subsidy Program for Rural Insurance Premium (PSP), which incentivizes insurers to operate in rural areas by subsidizing the premium. The government set up the Interministerial Management Committee for Crop Insurance (CGSR) to collaborate to develop guidelines and support insurers operating under this program.

The insurance supervisor, Superintendência de Seguros Privados (SUSEP), is a member of the CGSR steering committee, along with the Ministry of Agriculture, Livestock and Food Supply, the Ministry of Finance, the Ministry of Planning, Budget and Management and the Ministry of Agricultural development.

Maria Augusta de Queiroz Alves from SUSEP explained that the CGSR developed guidelines for approving and disclosing the percentage of the premiums that is subsidized by the government, operating conditions, crops and beneficiaries covered, regions to be supported by the program and technical conditions that need to be met. She explained that products need to be approved by SUSEP. SUSEP is constantly monitoring the market to understand how agricultural insurance is evolving. The insurers provide feedback into the process through the agricultural business insurance board, which provides a platform for discussion on rural insurance between the public and private sector. Recently, the discussions have included index insurance, which is still unregulated in Brazil.

In Colombia, the government has undertaken many initiatives over the past four years to promote the design and sale of agricultural insurance. The scope of the support has not only been limited to inclusive insurance, but covered general insurance as well. The government has established a special regulatory dispensation for companies offering agricultural insurance directly. However, not a single company has yet registered under the special dispensation and the government has since introduced a program offering to subsidize up to 60% of the premium for insurers offering agricultural insurance.

Natalia Escobar from the Superintendencia Financiera of Colombia (SFC) explained that they require the insurance company to submit the policy and technical actuarial note before the insurer can sell the product. However the SFC reviews the product in detail both when the company is being incorporated and when the company requires a new authorization. Currently, the government is developing an index insurance product for particular crops, specifically targeting the very large coffee plantations that are subject to flooding and natural disasters. However, there are legal challenges as index insurance falls outside of the current insurance law.

The examples of Colombia and Brazil highlight the challenges supervisors face with index insurance. In many countries index insurance will fall outside of the current insurance regulation and supervisors need to understand how it fits into existing product categories, such as business interruption, contingency or even

“agricultural insurance”, as an asset class on its own. Agricultural insurance needs to be viewed within the agricultural sector as a whole and its complex value chains. As is the case with Brazil, supervisors should seek to establish dialogue with other key stakeholders who are more familiar with the sector and its players.

Annex 1: Country Case Peru - Results Obtained by Catastrophic Agricultural Insurance

(information provided by Superintendencia de Banca, Seguros y AFP (SBS) Peru)

The catastrophic agricultural insurance covers risks such as drought, low winter temperature, hail, high temperature, excess moisture, sickness, fire, flood, frost, landslide, heavy wind, pest and predatory. The product is totally subsidized by the Government through the FOGASA (Guarantee Fund for Agricultural Field and Insurance) and is sold

by insurance companies. These companies are elected as a result of an annual bidding process.

As shown in the table below, the insurance premium average is around USD 13 million and has covered more than 300 thousands hectares per year during the five years of its existence. Both claims and beneficiary had an increasing trend and it is expected to continue to rise.

In addition, it is important to mention the 19% of area sown which is covered by the catastrophic insurance; it means that there are several uninsured producers and hectares in Peru and there is a lot of work ahead.

Insurance Results of Catastrophic Agricultural Insurance (USD)

Period	Premiums	Insured Amount	Hectares	Claims	Beneficiary
2009-2010	13,973,678	78,283,847	490,069	3,421,457	31,200
2010-2011	14,598,495	87,066,151	442,210	8,758,716	99,300
2011-2012	15,208,387	92,020,812	450,108	3,718,151	37,555
2012-2013	14,179,713	85,796,313	414,149	4,211,138	55,945
2013-2014	10,729,614	64,804,613	329,443	0	0

Exchange rate: 2.823 (July 2010), 2.738 (July 2011), 2.629 (July 2012), 2.792 (July 2013), 2.796 (July 2014).

Source: MINAG - OOEE y Secretaría Técnica FOGASA

Coverage Results of Catastrophic Agricultural Insurance

Country	Aggregate Area Sown (ha)	Insured Area	% of Insured Area	Number of producers
Peru	2,227,391	414,149	18.59%	172,562

Source: MINAG - OOEE y Secretaría Técnica FOGASA

Problems identified in the insurance scheme

- Inadequate timelines: approval of the co-financing schedule, submission of proposals and selection of insurance.
- There is a sense of limited transparency due to the lack of appropriate regulation for the selection and recruitment of insurance companies.
- The resource distribution amongst regions needs more technical criteria.
- There is a lack of transparency and mechanisms to identify, target and compensate beneficiaries.
- Crop selection is made in an elementary basis.
- There is no system to monitor and organize the communication of claims.
- There is an absence of protocols, and the field adjustment process is substandard.
- The process of determining premiums has a sense of arbitrariness.
- There are some weak government institutions at central and subnational level.
- Low-quality information.
- Adverse selection and moral hazard problems.

Challenges faced by the Central Government

- Develop and implement an Aggregate System of Agricultural Risk Transfer with secured long-term funding.
- Implement integrated risk management strategy (government, reinsurers, insurers and farmers) to reduce vulnerability and mitigate risks.
- Motivate international reinsurers to invest.
- Overcoming the lack of actuarial expertise and professional experience in the design and monitoring of agricultural insurance products.

- Invest in creating favorable market conditions for the industry development (database maintenance, training and pilots).
- Provide education and training to reduce production risks through best management practices and diversification strategies.
- Change attitude and reluctance of low-income farmers about paying actuarially-based premiums.

Studies to improve SAC

The project “Critical Evaluation of the Catastrophic Insurance in Peru” is in charge of experts from the University of California, Davis and has three main objectives:

- Make an actuarial analysis to assess premiums based on the pure risk rate and establish the current price of the catastrophic agricultural insurance.
- Evaluate the methodology of average performance estimation.
- Assess the feasibility of developing an agricultural index insurance relating to climatic variables.

Lessons learned

- The public funding should be invested in the generation of public goods and the maintenance of positive conditions and not necessarily in subsidized insurance. Insurance should be paid with public funding when it is targeted to low-scale and extremely low-income producers.
- Risk management strengthens the institutional structures from an economic perspective.
- Government should promote studies of probabilistic risk (probable maximum loss and annual expected loss) to assess the state responsibility and fiscal capacity that contribute to design appropriate financial risk transfer instruments.
- Minimize the adverse selection, moral hazard and administrative expenses.



- Government must provide the necessary information to measure, assess, and monitor risks. Also it must maintain a sound regulatory and supervisory framework.
- Companies should provide efficient and sustainable agricultural insurance products.

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