IAIS
INTERNATIONAL ASSOCIATION OF INSURANCE SUPERVISORS

aii
access to insurance initiative

Report of the 26th A2ii – IAIS Consultation Call

# Index Insurance
# Status and Regulatory Challenges

JAN
2018

*The Consultation Calls are organised as a partnership between the Access to Insurance Initiative (A2ii) and the International Association of Insurance Supervisors (IAIS) to provide supervisors with a platform to exchange experiences and lessons learnt in expanding access to insurance.*

## Introduction

The use of index insurance (also known as parametric insurance) as an alternative to traditional indemnity-based insurance has increased over the last twenty years, particularly as a mechanism for insuring against extreme weather risks.

In response to expressions of interest from many supervisors, both the IAIS and the A2ii have undertaken stocktaking exercises. On this consultation call, two experts presented on papers that are currently under development:

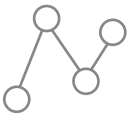
1. Craig Thorburn, Lead Financial Sector Specialist of the World Bank Group, gave us an overview of the main themes in the **IAIS (draft) Issues Paper on Index Based Insurances.** The IAIS is finalizing this issue paper, and it was out for public consultation at the time of this writing.
2. Richard Carpenter, international legal and regulatory affairs consultant for financial services, presented the findings of the recently released **A2ii report** titled **"Index Insurance: Status and Regulatory Challenges"**, which can be found on the A2ii website here.

In addition to these presentations, the following supervisory authorities gave presentations about their institutions' experience with index-based insurance: **Joseph Owuor,** Senior Supervision Officer for the Insurance Regulatory Authority of Kenya, and **Enrique Rafael Lucas Estrada**, of the Superintendencia de Bancos de Guatemala.

A special thanks for this call goes to Mr Peter Wrede, Senior Financial Sector Specialist of the World Bank Group, who delivered the content of the expert presentations on both the French and Spanish-language calls.

In order to avoid duplicating the material of the two reports on which this call was based, we would encourage readers to read the reports directly:

- "Index Insurance: Status and Regulatory Challenges", by the A2ii : link
- IAIS Issues Paper on Index Based Insurances: link[1]



**INDEX INSURANCE**

has particularly increased as a mechanism for insuring against extreme weather risks.

1 This links to the IAIS website section where all issues papers are posted. This is where the issues paper will be posted when it is officially published.

## Case Study: Kenya

The Kenyan case study was presented by Joseph Owuor, Senior Supervision Officer for the Insurance Regulatory Authority (IRA) of Kenya.

The IRA has discussed and agreed on a set of draft index-based insurance regulations, and at the time of writing is awaiting their enactment into law. These should allow for a faster product approval process for index products, and give a framework for ongoing monitoring of product performance. The IRA is also doing or planning a number of supporting activities to complement this, including consumer education, facilitating public-private partnerships, and advising the government on how to improve subsidized schemes.

The IRA has also been facilitating the development of pilot projects in index-based insurance. These projects enjoy some regulatory exemptions, which should help encourage market development for these products. This experience serves as a learning tool to understand which types of products work and which do not.

From its experience so far, the IRA has identified the following challenges:

- It is not clear when or how the insurer should determine whether the customers have an insurable interest that the insurance product can cover. This has an impact on whether the product is effectively an insurance product or a derivative, and which regulation should apply.
- Regulation needs to allow for a separate method of calculating technical reserves for index insurance products, and this must have a place in the relevant capital requirements.
- There is a delay in enacting regulations to provide a legal basis on these issues.
- There is a lack of data on pilot schemes, with limited or no statistics on volumes covered, premiums collected and claims paid.
- There is a lack of formal distribution channels for index-based insurance.

The IRA has the following requirements pertaining to index-based insurance:

- Conduct of business features:
  - There can be no waiting period or cancellation on index-based insurance products. It is important not to allow cancellation, as customers may cancel if a risk looks unlikely, for instance if signs point towards a good harvest for crop insurance.
  - The insurer must specify a complaints resolution process prior to product launch.
  - Marketing material should explain the product and its risks:
    - It should explain that pay-out depends on the value of the index and not the actual loss.
    - It should explain which risks are covered and which are not; what index is used to calculate the pay-out, and expected frequency of payouts.
    - It should state eligibility criteria, including that the customer must have an insurable interest.

- Policyholders do not need to lodge a claim; it is the insurer's responsibility to notify customers that the index has been triggered.
- Payouts must be verified, communicated and paid within 30 days.

› Minimum requirements for the contract:

- Index-based insurance products are not indemnity insurance but rather "fixed sum" or "agreed value" insurance.
- The maximum size of the possible total pay-out should be specified in the contract.
- The contract must clearly specify the sales and cover windows, any exclusions, the index to be used to calculate the payout, and the expected frequency of payout. It must also specify the data sources for the index, and any back-up sources or methods used to approximate the index if data is lost or inaccurate.
- The client must have an insurable interest in the product, so there must be the prospect of adverse impact on the insured should the insured risk occur, and this risk must be stated in the contract.

› Requirements on the insurer

- The insurer must produce an actuarial report that explains how the insurer minimized basis risk in the product design.
- If an independent data validator is to be engaged, a service level agreement is needed with the independent body indicating;
  - how to resolve conflicts over the data, index values and benefits, and
  - the penalties the independent body is liable for if it makes mistakes

The index used to determine the pay-out should have the following features:

› The index must be easily observable and measurable, and it must be clear how the index' values impact the resulting benefits.
› The index must be transparent, objective and independently verifiable.
› The index must be a good predictor of the risk covered – the index should not trigger a payout unless the insured risk occurs.
› Interested third parties or policyholders must be access the data and calculate the pay-out themselves.

==========

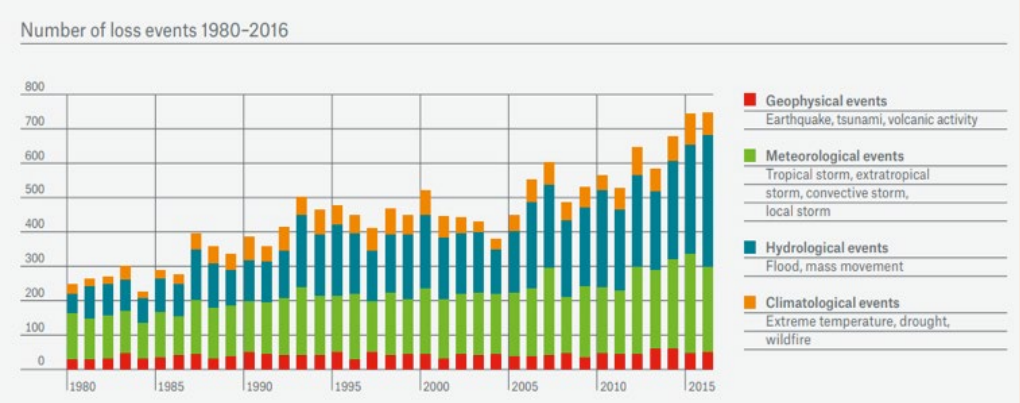
The IRA's guidelines for index-based insurance can be found on their website here.
More information about the Kenya National Agricultural Insurance Program can be found here.
More information about the Kenya Livestock Insurance Program can be found here.
Any questions about the IRA's guidelines can be posed to Mr Joseph Owuor at jowuor@ira.go.ke.

==========

# Case Study: Guatemala

The Guatemalan case study was presented by Enrique Rafael Lucas Estrada of the Superintendencia de Bancos de Guatemala.

In Guatemala, like in most Latin American countries, the agricultural sector is one of the main economic pillars. This sector is dramatically affected by catastrophic events caused by climate change. Especially vulnerable groups of the population are increasingly exposed to climatic, hydrological, biological, and market threats.




Source: Munich Re NatCatSERVICE

In this context, several countries are in the process of implementing national financial inclusion strategies and it can be observed that insurance - as an important mechanism to reduce risk poverty - is included in these strategies.

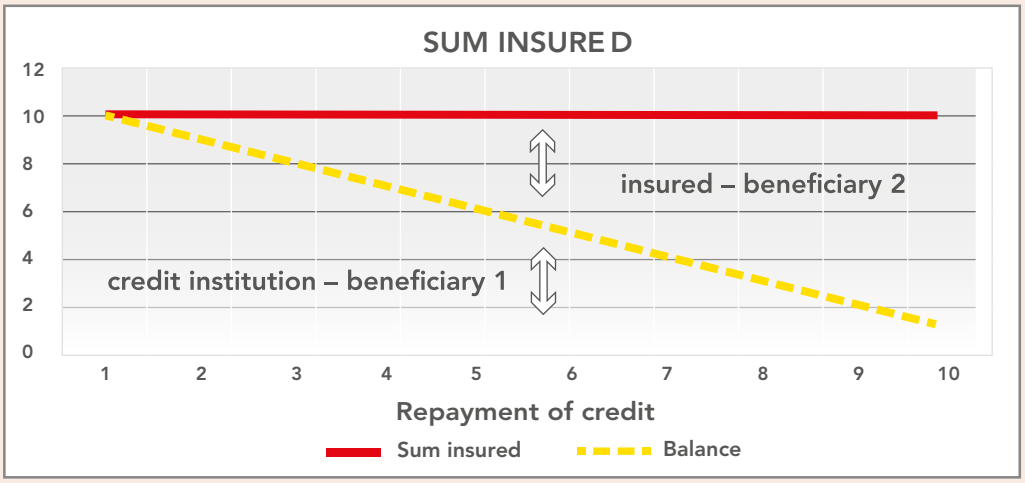
Index-based insurance is an important product as it makes insurance viable for vulnerable producers affected by events like droughts or earthquakes. This type of product is a contract (insurance policy) whose indemnity payment is based on the variation of an index that has a high correlation with the risk to be covered. The clear definition of the index in the insurance contract as well as the establishment of adequate claims payments procedures are an agile and expedited form of protecting producers against meteorological catastrophes.

## Index insurance in Guatemala

An index-based microinsurance product against catastrophic risks is available in Guatemala since 2016.It started as a pilot project and covers the interruption of economic activities due to earthquakes, drought and excess rain.

The insurance product is linked to microcredit. Something important and different to other insurance schemes is the fact that the sum insured remains the same along the term of the contract. The beneficiary of the claims pay-out is not only the microfinance institution that offers the microcredit but also the borrower. As the insurance product is linked to the agricultural productivity, the borrower receives what exceeds the microcredit sum.

The main characteristic of this type of product is that it considers the consequential losses, not the direct loss. This means that it is related to the indirect loss of a catastrophic event. Once the responsible agency confirms a catastrophic event happened, and one of the local agencies confirms the damage in the insured areas, the claims pay-out is automatically activated based on what was agreed in the insurance contract.




Data from January to September 2017

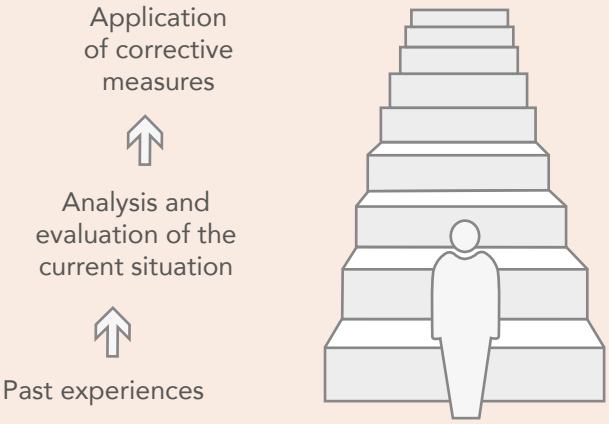
The sum insured is 6.900 dollars; the commercial premium is around 5% (including taxes up to 5.6%), coverage earthquake 100%, etc. (see table below).

| SUM INSURED | Up to Q 50,000.00 (equivalent to US$ 6,900.00) |
|---|---|
| Premium | 5.6% on the sum insured |
| Amount to be covered by: Earthquake | 100% |
| Drought | 50% |
| Excess rain | 100% |
| Evolution/credits insured | 1,513 Microcredits 53 % Women - 47% Men |
| Sums insured | Q 9.5 Million equivalent to US$ 1.3 million |
| Premiums written | Q 474 thousand equivalent to US$ 65.4 thousand |

## Lessons learned

Supervisor should primarily focus on:

- Awareness of the need to seek alternatives for the most vulnerable segments.
- The indemnity principle prevails.
- Constant financial education programs (as this product is different from traditional insurance products)
- Reliable coverage (the understanding of the product by policyholders).
- Transparency in the claims payment procedures.
- Consumer protection.




## Policyholder protection

There is a strong focus on ensuring that the consumers have a good understanding of this product. This is especially important as this product is more complex than most microinsurance products, and there is a regulation in most Latin American countries that policies must be easy for the customer to understand. From a supervisory point of view, there is value in focusing on the transparency of claims payments procedures, which increases the trust and understanding of how this product works. Several countries are in the process of strengthening their regulations in this regard to make sure consumers are adequately protected.

==========

Any questions about the SIB's experiences can be posed to
Mr Enrique Rafael Lucas Estrada at elucas@sib.gob.gt.

==========

## Questions from the audience

- **Is there a high cost when consultants must be engaged to assess losses in the Kenyan index-based insurance programs?**
  Generally this cost is not so high due to the clearly prescribed relationship between the index and the payout. For instance, for the Kenyan crop program, the payout is triggered if the historical average yield goes below 80%. For the livestock program, the program relies on satellite imagery to determine the state of the grazing pasture that serves as food for the animals. This is an automated system, so the costs in verifying the data are not high.

- **If an index-insurance product is subsidized, how is this subsidy passed on to policyholders?**
  There is usually a consultation process with the stakeholders. This can be a simple threshold, such as in the case of agricultural insurance, where farmers with less than 2 hectares of production, or those who produce a particular crop, receive the subsidy. This reflects their comparative vulnerability.

  In Senegal, the government opted for a simpler approach, subsidizing 50% of any agricultural premium (parametric or not). In the Dominican Republic, the subsidy goes to specific crops determined by the Ministry of Agriculture. When subsidies are paid by donors, it depends on the objectives they hope to achieve, such as the percentage of women benefiting, for example, or the poverty of the beneficiaries.

  As subsidies have many implications, there is a World Bank publication on the subject: *When and how should agricultural insurance be subsidized? Issues and good practices.* *(link)*

- **How closely should the supervisor pay attention to basis risk (both adverse and perverse)?**
  The supervisor should understand what the possible cases are, how the product would have behaved if it had been in force in the past, and what conclusions that implies for the likelihood of the underlying risk manifesting itself. Here is an example considering the last 15 years:

| | | Prediction of the model bad year | good year | |
|---|---|---|---|---|
| observed reality | bad year | 3 | 1 | 4 |
| | good year | 3 | 8 | 11 |
| | | 6 | 9 | 15 |

  - Probability of the model being successful: (3+8) / 15 = 73% (risk of error: 27%)
  - Probability that the model identifies bad years: 3 / 4 = 75%.
  - Probability that the model identifies good years: 8 / 11 = 73%.

  Follow such an analysis it is necessary to discuss with the product designers about the possibility of reducing the probability of error if the supervisor considers it too high.

  The World Bank's *How to measure whether index insurance provides reliable protection* *(link)* *and Risk Modeling for Appraising Named Peril Index Insurance Products* *(link)* provide further details.

› **How has the development of parametric insurance been allowed in legal systems where the principle of indemnification is directly linked to damage insurance (which requires proof of damage to the insured property)?**
In Guatemala, in these cases compensation is based on consequential damage and not direct damage. The established coverage is oriented towards the interruption of the productive activity by earthquake, drought and excess of rain; these events will always affect the insured's activities, so there is damage. The policy defines the compensation parameters of the aforementioned risks. With the support of the technology, it is possible to establish the coordinates of the geographical areas that have been affected, as well as the parameters that activate the compensation, which is already agreed in the insurance contract.

From a global perspective, this issue is more likely to be a problem in jurisdictions with a civil law legal system than in jurisdictions with a common law legal system. In a small number of countries, this has even been considered to be an unsurmountable obstacle to the introduction of index insurance. The best solution, of course, is for the concept of index insurance to be recognized in the law. For example, in Mongolia, the Insurance Law expressly permits payment against an index as a form of insurance. The Law requires (in effect) that the index must be a proxy for the loss of the insured but that the payment is not dependent on the insured's actual loss. Of course, it takes time to amend legislation and sometimes the process can be very lengthy. In jurisdictions with a hierarchical legislative structure, the legislation containing the requirement may be in legislation with a higher status, such as the Civil Code or equivalent. In that case, amending the insurance supervisory law may not, in any case, be sufficient to address the problem.

All countries allow non-indemnity insurance (such as life insurance). One argument that has been used is to position index insurance as a form of non-indemnity (or contingency) insurance. This may be possible if the payment under an index insurance contract is considered as covering more than just direct losses (such as the loss to crops) but to also cover more intangible losses - like a form of business interruption insurance.

In countries where this is a problem, it is often dealt with by permitting an index insurance product (whether a pilot or not) on an exception basis with the intention that the legislation will be amended at some point in the future. This carries a degree of legal risk but, in practice, that may not be very significant.

The IAIS issues paper also touches on this issue of formality. From the IAIS point of view formality is strongly desirable (e.g. by defining index-based insurance explicitly as insurance), or by specifying what is insurable interest (e.g. including intangibles like business interruption cost). No matter how it is achieved, there will be a range of options and they are sometimes determined by political considerations.

› **What does it mean that the principle of compensation prevails?**
The indemnity principle is followed in the sense that an insurer will compensate the policyholder following the triggering of a certain parameter as set out in the contract, as long as the policyholder has an insurable interest (e.g. a farmer insuring his harvest). In this case the principle refers to both direct and indirect losses. The product must be designed in a way that the compensation amounts appropriately reflect the damages caused by the risk.

- **Has there been a significant reduction in basis risk when implementing the use of hybrid products?**
  Basis risk will always exist, but is reduced with the Guatemalan product as presented. The scheme works by granting a loan to promote agricultural activity. Credit analysis is based on the costs necessary to produce such activity. The insured sum is equal to the value of the loan, so the credit analysis is based on the value of the damage and therefore significantly reduces the basis risk.

  To reduce basis risk in Zambia, if the community thought there should be a payment that the index did not indicate, they could ask for an evaluation by an expert, but such an assessment has an extra cost.

- **In the case of Guatemala, is compensation shared between the debtor (who takes the credit) and the creditor (the microfinance institution)?**
  This insurance scheme is associated with a development loan for agricultural activity, which in the credit analysis is based on the costs of harvesting in its entirety, so compensation is shared and will depend on the progress of the harvest and therefore both parties have incurred the costs. The credit balance insurance in Guatemala generally only covers the loan portfolio.

- **Considering that parametric insurances are based on statistics, what is the recommended historical basis to be used for their construction?**
  The historical data issue is really the same as it is for any other kind of insurance. Insurers and others often say there is never enough data, especially regarding new markets and when reaching out to underserved groups. At the same time, they happily get involved in new markets without a lot of historic data such as cyber insurance. There is nothing particularly special about data limitations between index based insurances and other insurances. In fact, there are useful sources of data for index based insurances that have been added to the understanding of climate and risk that would not exist in other areas of insurance, even mortality.

  Data is not always the same from an actuarial point of view. Five year old data and one year old data can be of a different relevance. More data in an historic sense adds value but is not totally conclusive as to decide whether to go ahead or not. Ultimately, there is no "right amount" of data, and actuarial decisions will be made with degrees of confidence.

  To construct an index, insurers should use all historic data that is available, making particular note of the relevance, credibility, and statistical features of the data. The reliability of this index is then a matter of useful profession judgement. The use of new data as it arises is, of course, a different issue and worthy of consideration in the maintenance of the index.


| **To pose more questions to our experts, please contact:** |
| --- |
| Richard Carpenter: r.carpenter@btinternet.com |
| Craig Thorburn: cthorburn@worldbank.org |
| Peter Wrede: pwrede@worldbank.org |
| Joseph Owuor: jowuor@ira.go.ke |
| Enrique Rafael Lucas Estrada: elucas@sib.gob.gt |

## NOTES

The Initiative is a partnership between:

Hosted by:

Access to Insurance Initiative
Hosted by GIZ Sector Project
Financial Systems Approaches to Insurance
Deutsche Gesellschaft für Internationale
Zusammenarbeit (GIZ) GmbH
Dag-Hammarskjöld-Weg 1-5
65760 Eschborn, Germany

Telephone: +49 61 96 79-1362
Fax: +49 61 96 79-80 1362
E-mail: secretariat@a2iiorg
Internet: www.a2ii.org

a2ii_org

Promoting access to responsible, inclusive insurance for all.