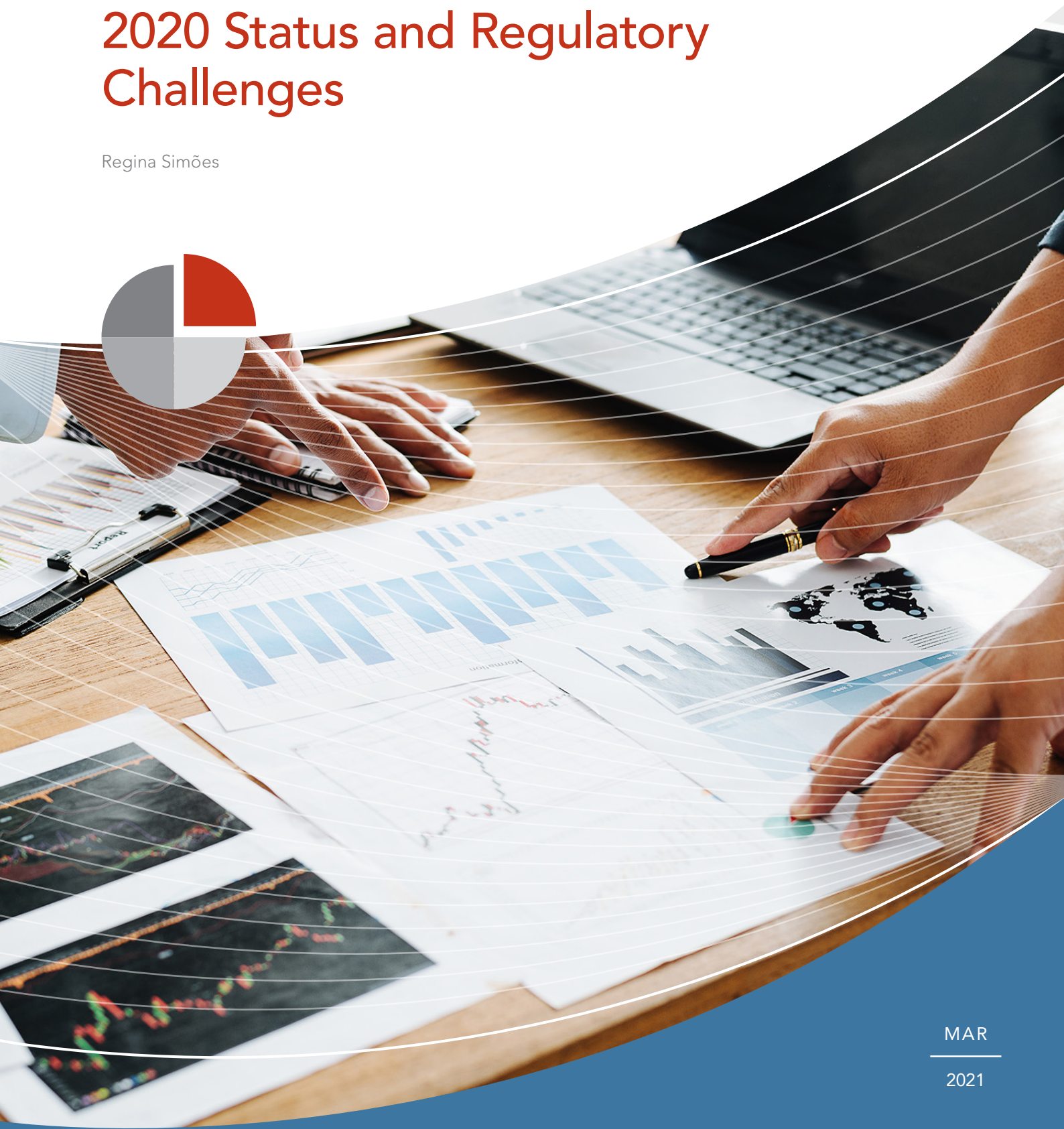


# Index Insurance: 2020 Status and Regulatory Challenges

Regina Simões



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Regina Simões

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## Contents

<b>ACKNOWLEDGEMENTS</b> .....	1
<b>TABLE OF ACRONYMS</b> .....	4
<b>1. INTRODUCTION</b> .....	5
<b>2. INDEX-BASED RISK TRANSFER CONTRACTS - INSURANCE OR DERIVATIVE?</b> .....	6
2.1 Weather index-based insurance and weather derivatives – a brief comparison. ....	6
2.2 Differences between index-based insurance and weather derivatives. ....	7
<b>3. RESULTS AND FINDINGS OF THE INDEX-BASED INSURANCE SURVEY</b> .....	8
3.1 Regulatory approaches .....	9
3.2 Other regulatory and supervisory concerns .....	12
3.3 Products – characteristics and scope. ....	14
3.3.1 Supervisors. ....	14
3.3.2 Industry. ....	15
3.4 Facilitators and barriers for the provision of index-based insurance .....	18
3.5 Support from technical and development agencies .....	19
3.6 Supervisory capacity .....	22
<b>4. CONCLUSIONS</b> .....	23
<b>MAIN REFERENCES</b> .....	25

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## Figure, boxes and tables

Figure 1 Supervisors who participate in the survey by region (%) .....	8
Figure 2 Countries participating in the survey/allowing index-based insurance products by region .....	9
Figure 3 Regulatory and supervisory concerns on index-based insurance products .....	13
Figure 4 Index-based insurance products and insurers that market them/by jurisdiction ...	14
Box 1 Parametric Agricultural Microinsurance in Paraguay .....	17
Box 2 The Mongolian Case .....	21
Table 1 Main differences between index-based insurance and weather derivatives. ....	7
Table 2 Examples of the main regulatory approaches .....	11
Table 3 Examples of successfully established agency-supported programmes .....	19



## Table of acronyms

<b>ACA</b>	Asuransi Central Asia
<b>ACAPS</b>	L'Autorité de Contrôle des Assurances et de la Prévoyance Sociale (Morocco)
<b>APS</b>	Autoridad de Fiscalización y Control de Pensiones y Seguros (Bolivia)
<b>AusAID</b>	Australian Agency for International Development/Agencia Australiana para el Desarrollo Internacional
<b>BMU</b>	German Ministry for the Environment, Nature Conservation, Nuclear Safety-
<b>CMF</b>	Comisión para el Mercado Financiero (Chile)
<b>DINAC</b>	Dirección Nacional de Aeronáutica Civil de la República del Paraguay
<b>EMDE</b>	Emerging Market and Developing Economies
<b>FRC</b>	Financial Regulatory Commission of Mongolia
<b>FSCA</b>	Financial Sector Conduct Authority (South Africa)
<b>FSPA</b>	Financial Sector Prudential Authority (South Africa)
<b>FSRA</b>	Financial Services Regulatory Authority (Eswatini)
<b>FSRC</b>	Financial Services Regulatory Commission (Saint Kitts & Nevis)
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Agency for International Cooperation)
<b>IBLI</b>	Index Based Livestock Insurance
<b>IC</b>	Insurance Commission (Philippines)
<b>IDB/BID</b>	Inter-American Development Bank/Banco Interamericano de Desarrollo
<b>IFAD</b>	International Fund for Agricultural Development
<b>IFC</b>	International Finance Corporation
<b>IIF</b>	Impact Insurance Facility
<b>IIP</b>	Index-based Insurance Product
<b>IRA</b>	Insurance Regulatory Authority (Kenya)
<b>IRAU</b>	Insurance Regulatory Authority of Uganda
<b>ISA</b>	Insurance Supervision Agency (Macedonia)
<b>ISSM</b>	Instituto de Supervisão de Seguros de Mozambique
<b>KfW</b>	Kreditanstalt für Wiederaufbau/German Development Bank
<b>MIF/FOMIN</b>	Multilateral Investment Fund/Fondo Multilateral de Inversiones
<b>MFI</b>	Microfinance Institution
<b>MiCRO</b>	Microinsurance Catastrophe Risk Organisation
<b>MPMEs</b>	Micro, pequenas e médias empresas
<b>NIC</b>	National Insurance Commission (Ghana)
<b>PMEs</b>	Pequenas e Médias Empresas
<b>RBV</b>	Reserve Bank of Vanuatu
<b>SACCO</b>	Savings and Credit Co-operatives Societies
<b>SBS</b>	Superintendencia de Banca, Seguros y AFP (Peru)
<b>SDC</b>	Swiss Agency for Development and Cooperation
<b>SFC</b>	Superintendencia Financiera de Colombia
<b>SIB</b>	Superintendencia de Bancos de Guatemala
<b>SSN</b>	Superintendencia de Seguros de la Nación (Argentina)
<b>SUGESE</b>	Superintendencia General de Seguros de Costa Rica
<b>SUSEP</b>	Superintendência de Seguros Privados (Brazil)
<b>TCIFSC</b>	Turks and Caicos Islands Financial Services Commission
<b>WB</b>	World Bank
<b>WWB</b>	Women's World Banking



## 1. INTRODUCTION

Although the first index-based insurance programmes were developed in the second half of the 20th century<sup>1</sup>, interest in the use of these products has grown in recent years, with a number of projects being piloted in low-income countries. In fact, just over a decade ago, index-based insurance was viewed with some scepticism and, for many supervisors, considered unacceptable as insurance. However, this innovative approach has gradually been firming up as a viable tool for providing insurance services to certain excluded or underserved segments that would otherwise be unable to obtain protection against the risks they face. It is worth recalling that the same thing happened during the early days of microinsurance in the first decade of this century. Viewed as utopian by many, this is today a reality, and a potential business opportunity for insurance providers closely attuned to new trends, especially in jurisdictions where suitable and proportionate incentive policies and regulations have been implemented.

While the process has been slow, index-based insurance – also known as parametric insurance – is evolving steadily, and today it reaches a wide range of customers, at the micro, meso and macro levels. This ranges from the most vulnerable segments of the population to the most sophisticated (like civil construction and transportation) and includes complex sectors (such as hydro-power plants and government).

Given that social distancing is now a fact of life due to the Covid-19 pandemic, it seems appropriate to point out that index-based insurance provides for remote assessment of losses. Furthermore, with increasing digitisation and the use of technology across the entire insurance value chain, supported by enabling regulation, index-based insurance is able to thrive beyond coverage against weather and catastrophic risks. This opens a new range of possibilities and opportunities for the insurance market, becoming a key tool for supervisors, regulators and policymakers, interested in closing the protection gap. It could also become a major ally for governments committed to reaching the United Nations Sustainable Development Goals (SDG)<sup>2</sup> and is a key component for addressing climate change (SDG 13) and achieving food security (SDG 2). Index-based insurance has also demonstrated that it can build resilience by enabling customers to access finance, increase productivity and income (SDG 9) thereby reducing poverty (SDG 1) and vulnerability.

Based on the findings of the survey conducted by A2ii during the second half of 2020, this paper presents an update of the stocktaking exercise in 2018<sup>3</sup>. It provides an overview of how the interviewed supervisors have handled the challenges related to index-based insurance, starting with issues related to its inclusion as “insurance” within the legal and regulatory insurance framework, in addition to addressing other supervisory concerns, such as market conduct and prudential risks, arising from its specific characteristics. On the other hand, this paper also presents some of the challenges faced by the industry, as well as insights from its representatives on potential facilitators to encourage more participants to enter the market.

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<sup>1</sup> Area-yield index-based insurance was first developed in Sweden in the early 1950s (Government Support to Agricultural Insurance, Challenges and Options for Developing Countries, Olivier Mahul & Charles J. Stutley, 2010, The International Bank for Reconstruction and Development / The World Bank).

<sup>2</sup> The 17 Sustainable Development Goals (SDG) were adopted in 2015, after a Meeting of Heads of State and Government at the Headquarters of the United Nations Organisation in New York. This was a historic decision taken by UN member countries to work together towards a Global Sustainable Development Agenda, which should be complied with by 2030.

<sup>3</sup> Index Insurance: Status and Regulatory Challenges, Access to Insurance Initiative, January 2018.



While this paper is not intended to provide solutions or define best practices, it highlights new approaches that might be significant for opening up market development opportunities and fostering access to insurance. The paper is based on the responses to the survey and does not strive to go beyond the information provided.

## 2. INDEX-BASED RISK TRANSFER CONTRACTS: INSURANCE OR DERIVATIVE?

### 2.1 Weather index-based insurance and weather derivatives – a brief comparison

Weather risks are important for almost all economic and commercial activities, such as agri-business and other businesses, including the energy, construction, travel, and transportation sectors. They may also affect families, as they have the potential to impact their lifestyles at different levels. Weather risks could be defined as the probability of adverse impacts on cash flows, earnings, gains, properties, and other assets, caused by weather-related events such as drought, excessive rainfall, flood, snowstorm, hail, hurricane, etc.

Weather-related risks can be mitigated through different risk management strategies, among which are the purchase of an insurance based on meteorological indexes, or a weather derivative. Both these financial tools are based on an underlying weather variable index, such as temperature, humidity, stream flows, rainfall intensity, wind speed, etc. This weather index serves as a trigger, linked to a contract that establishes when and how payments will be made within its duration, with premiums calculated accordingly.

- Weather index-based insurance is an insurance product designed to offer protection against losses caused by extreme or catastrophic weather-related events, such as droughts, floods, typhoons, hurricanes, snowstorms etc., which “payments to the policyholder are triggered by a pre-agreed index (which should be objective and independent)”<sup>4</sup>. This insurance has been used mainly to mitigate risks in the agriculture and livestock sectors, taken out against extreme weather events, but also used to protect properties and companies against catastrophic events. Like indemnity-based products, insurance products based on meteorological indexes are not traded on financial markets.
- Weather derivatives, in contrast to conventional financial derivatives with prices derived from the market price of an asset or some other financial instrument, are a specific segment of the derivatives market, related to products that are strongly weather-

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<sup>4</sup> Index Insurance: Status and Regulatory Challenges, Access to Insurance Initiative, January 2018.





influenced. Although the basic idea is a contract based on a meteorological index, these derivatives may take the form of futures, options and swaps and may be traded on financial markets. Due to their characteristics, they may also be used for financial speculation, at the same time as they allow companies and farmers to deploy them as protection against weather variations that may adversely affect their profits or economic activities.

### 2.2. Differences between index-based insurance and weather derivatives

Despite the initial focus on mitigating agricultural risk deriving from extreme weather events, new types of index-based insurance have been appearing over time. They extend beyond weather risks to include other natural disasters whose magnitude is measured on specific scales (like earthquakes, for example), or losses that can be tied to an index, such as transporting perishable goods, measured by using temperature sensors. Theoretically, any risk that can be linked to an index could be covered by index-based insurance.

The following **Table 1** presents some of the main differences between index-based insurance and weather derivatives:

	Index-based insurance	Weather derivative
Purpose	Protection against extreme weather-related risks or any risk that might be linked to an index	<ul style="list-style-type: none"><li>• Risk protection</li><li>• Exploring financial opportunities</li><li>• Speculation</li></ul>
Product type	<ul style="list-style-type: none"><li>• Tailor-made contracts</li><li>• Costs occur regardless of weather conditions</li><li>• The probability of damage or loss must be related directly to the weather conditions or other conditions against which the insured seeks protection</li></ul>	<ul style="list-style-type: none"><li>• Standardised contracts that can be publicly traded</li><li>• The contract values are volatile, according to market conditions</li><li>• May be purchased without real exposure to market variables that impose risk, meaning speculation</li></ul>



For the IAIS, “index based insurances that are developed with the intention of advancing access to insurance especially for lower income and underserved clients should be part of the formal insurance sector”<sup>5</sup>, ensuring that consumer protection mechanisms are in place within the current insurance supervision framework, and that the wider insurance market is not undermined by a product perceived as ‘insurance’ but that is not, in fact, legally or practically regulated as insurance in a formal manner in practice.

### 3. RESULTS AND FINDINGS OF THE INDEX-BASED INSURANCE SURVEY

The survey addressed insurance supervisors and insurance industry representatives, the latter involved in the provision, design, and distribution of index-based insurance.

In all, 28 supervisory authorities<sup>6</sup> were interviewed in 27 countries<sup>7</sup>, 25 from emerging markets and developing economies (EMDE) (figure 1).

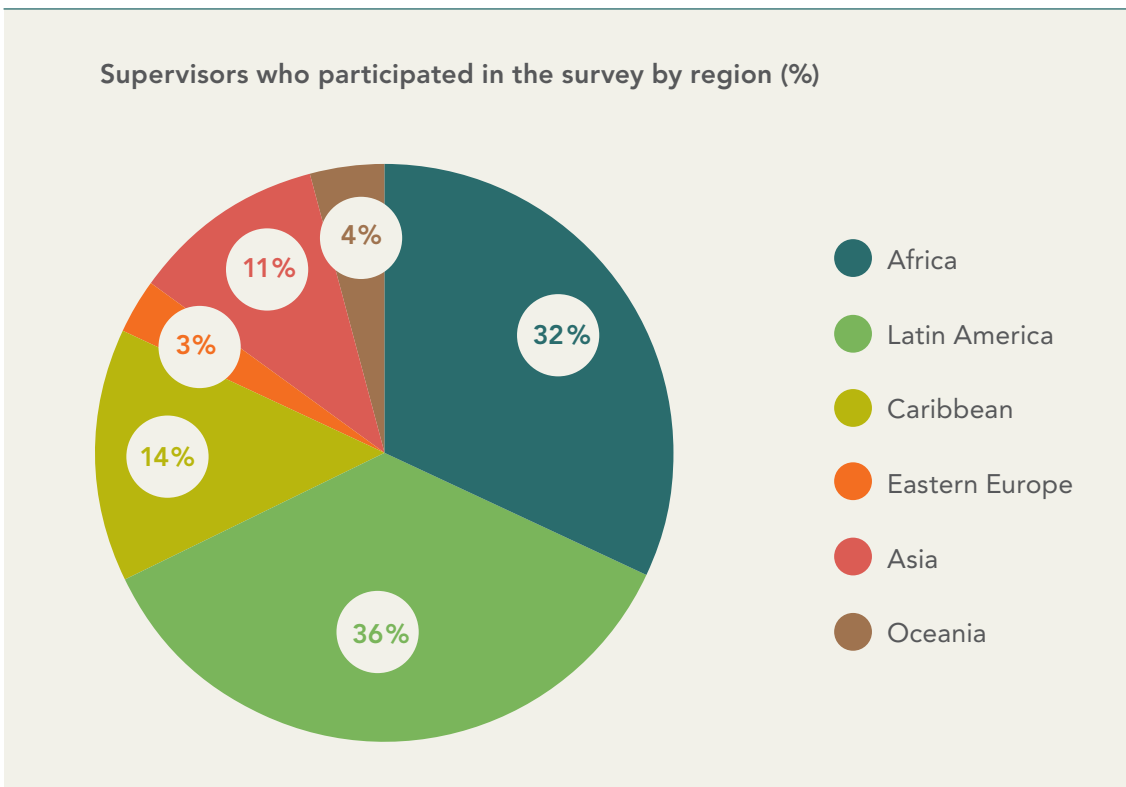


Figure 1: Supervisors who participate in the survey by region (%)

<sup>5</sup> Issues Paper on Index Based Insurances, particularly in Inclusive Insurance Markets, IAIS, June 2018 (3;1, par. 42–43).

<sup>6</sup> Information provided by the Financial Regulatory Commission of Mongolia (FRC) was forwarded to A2ii in response to a direct request to the supervisory authority.

<sup>7</sup> The FSCA and FSPA oversee the same jurisdiction: South Africa.



The eleven industry respondents include insurers and reinsurers – from both emerging and developing economies as well as developed countries, in addition to consultants and a non-profit organisation that offers support to financial service providers working with low-income segments, particularly women.

As a whole, these entities operate on all continents except Oceania, providing products and technical assistance along the entire insurance value chain.

### 3.1. Regulatory approaches

Among the 27 jurisdictions represented in the survey addressed to supervisors, sixteen stated that the legislation in force allows or raises no barriers to index-based insurance contracts (figure 2); in some cases, regulatory arrangements were made to allow index-based risk transfer contracts to be traded as insurance contracts.

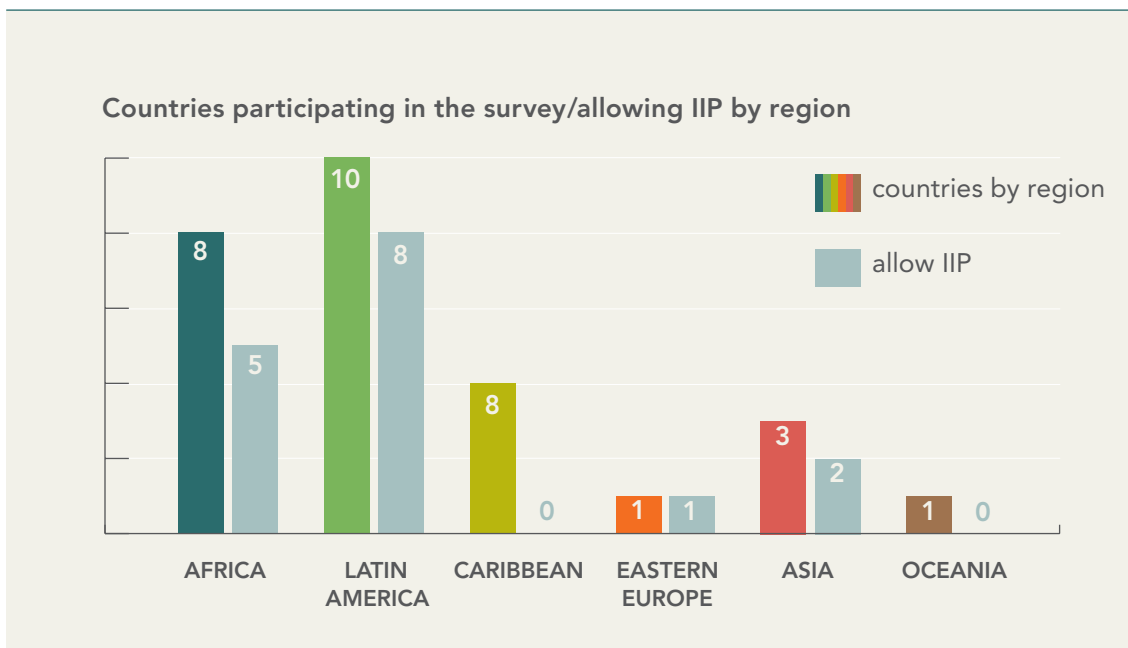


Figure 2: Countries participating in the survey/allowing index-based insurance products (IIP) by region

The African and Asian supervisors reported the longest experiences with index-based insurance, with Mongolia launching its programme in 2006 and Kenya in 2009. Latin America seems to follow this trend, as a number of countries have made index-based insurance products viable in the past five years, either under the current regulatory framework or by issuing new regulations<sup>8</sup>. For example, Puerto Rico approved index-based microinsurance regulation in July 2020, while Uruguay has first driven the development of this type of insurance three years ago, generally used as an additional coverage for crop-hail insurance.

<sup>8</sup> Argentina, Brazil, Colombia, Costa Rica, Guatemala, Puerto Rico, and Uruguay.



There are two main regulatory hurdles for index-based insurance: as already explained in section 4, the first is the similarity between these products and weather derivatives; the second is the compensatory nature of the insurance. In fact, in jurisdictions where the definition of an insurance policy by the governing law is strongly linked to the concept of indemnification of actual loss or damage, index-based risk transfer contracts are not recognised as insurance.

In order to address these issues, supervisors have adopted different approaches, depending on whether or not their governing laws provided for flexibilities to allow for favourable interpretations. The main regulatory approaches adopted by the jurisdictions taking part in the survey are:

- **The approval of laws and/or regulations that regulate index-based insurance.**

This approach has the advantage of providing transactions with greater legal security through the use of index-based insurance. Argentina, Puerto Rico and Uganda are examples of jurisdictions that opted to regulate index-based insurance, within the past five years.

- **Issue of a legal opinion in favour of including these products in the governing law on insurance, based on the “insurable interest” at the date of contracting.**

As a rule, a legal condition for a product to be an insurance contract is that an “insurable interest” exists. In fact, the insurable interest is generally considered to be an ongoing requirement before and during the term of the contract and, especially, at the time of the claim. This is a key point for most supervisors and overcoming it is the biggest challenge when it comes to including index products under the insurance regulatory framework.

According to the *IAIS Issues Paper on Index Based Insurance, Particularly in Inclusive Insurance Markets*, the “key difference between index-based insurance and indemnity insurance is that the insurable interest requirement is not checked at the point of claim. This is not to say there is no insurable interest – just that it is not validated at the point of claim”<sup>9</sup>. However, legal definitions vary across jurisdictions and can be less (or more) clear and restrictive. In some cases, the definitions establish the legal requirement for “insurable interest”, but the continuity requirement is unclear. These gaps allow for more flexible legal interpretations and, consequently, the issuance of legal opinions in favour of including index-based insurance in the governing law on insurance, based on the insurable interest on the contract date. Costa Rica and Brazil are examples of countries that adopted the approach through legal opinions.

- **The adoption of a pilot project, generally in the context of a regulatory sandbox, as an exception to the governing law.**

Theoretically, this would allow product efficacy to be tested in a controlled environment, before introducing any alterations to the governing law or approving specific regulations. Mozambique and Kenya are among the countries that adopted this approach.

**Table 2** presents examples of the main regulatory approaches adopted by jurisdictions:

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<sup>9</sup> Issues Paper on Index Based Insurances, particularly in Inclusive Insurance Markets, IAIS, June 2018 (3.2, par. 53)





Some jurisdictions have plans to regulate index-based insurance in the near future. This is the case in Bolivia, which is updating its financial market legislation, which encompasses the Insurance Act; this opportunity will allow certain aspects to be included, such as index-based insurance. The CMF<sup>16</sup> states that a draft bill is being presented on this topic, as index-based insurance is not allowed in Chile due to constraints imposed by the Commercial Code, based on the compensatory principle.

In South Africa, index-based insurance is not encompassed by the Insurance Act<sup>17</sup>, but rather falls within the derivatives framework. This is why the FSPA<sup>18</sup> is currently considering index-based insurance registration in the regulatory sandbox set up by the South African Reserve Bank. This will allow supervisors to become more familiar with the risks and transactions, learning from experience and then regulating it. The pilot project includes the Ministry of Finance, the Ministry of Agriculture, the South African Reserve Bank, the FSPA and the FSCA<sup>19</sup>.

In other jurisdictions where index-based insurance is being marketed regularly, supervisors are planning to adopt steps that will allow regulatory adjustments, or regulate them more appropriately. The SFC<sup>20</sup> is planning a comparative study of parametric insurance between 2021 and 2022, in order to draw up recommendations and proposals for regulatory adjustments in Colombia. In Ghana, where the current insurance act is silent on index-based insurance, this will be covered by the new Insurance Act that is currently awaiting parliamentary approval. The ACAPS<sup>21</sup> has also started the amendment of Book I of the Insurance Code (addressing insurance contracts); projects underway include setting up an index-based insurance framework in Morocco.

## 3.2 Other regulatory and supervisory concerns

While a regulatory approach for making risk transfer contracts viable under the aegis of insurance legislation is important, supervisors must also deal with other related concerns that may affect the delivery and servicing of index-based insurance products.

The survey findings indicate that the main concern among supervisors, in terms of the regulation and supervision of index-based insurance, is inadequate or insufficient data. In fact, nineteen of the 28 supervisors interviewed mentioned this issue as one of the most significant aspects (figure 3). The second cause of concern for supervisors is the limited actuarial and technical capacity of many insurers to design and implement these products.

Another important concern is the adverse basis risk<sup>22</sup>, which can expose consumers to unexpected uninsured losses, which harms consumers and might impose operating and reputation

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<sup>16</sup> *Comisión para el Mercado Financiero (CMF)*, the Chilean insurance authority.

<sup>17</sup> Insurance Act of 2017.

<sup>18</sup> Financial Sector Prudential Authority, in South Africa.

<sup>19</sup> Financial Sector Conduct Authority, in South Africa.

<sup>20</sup> *Superintendencia Financiera de Colombia*, the Colombian insurance authority.

<sup>21</sup> *L'Autorité de Contrôle des Assurances et de la Prévoyance Sociale*, the Moroccan insurance authority.

<sup>22</sup> Basis risk is the risk that the payment made to the policyholder might be different from the actual loss, and adverse basis risk occurs when the policyholder does not receive any payment.



risks on the insurers, leading to a lack of confidence in insurance in general among consumers. Both were mentioned as a matter of concern by fifteen supervisors. In this regard, it is important to note that, with the dramatic advancements both in access to better, more timely and granular data, and in the ability to analyse it, basis risk can and is being reduced.

Next – mentioned by fourteen of them – comes the lack of technical ability or experience of the supervisors themselves, for ensuring that this type of product offers real value to consumers.

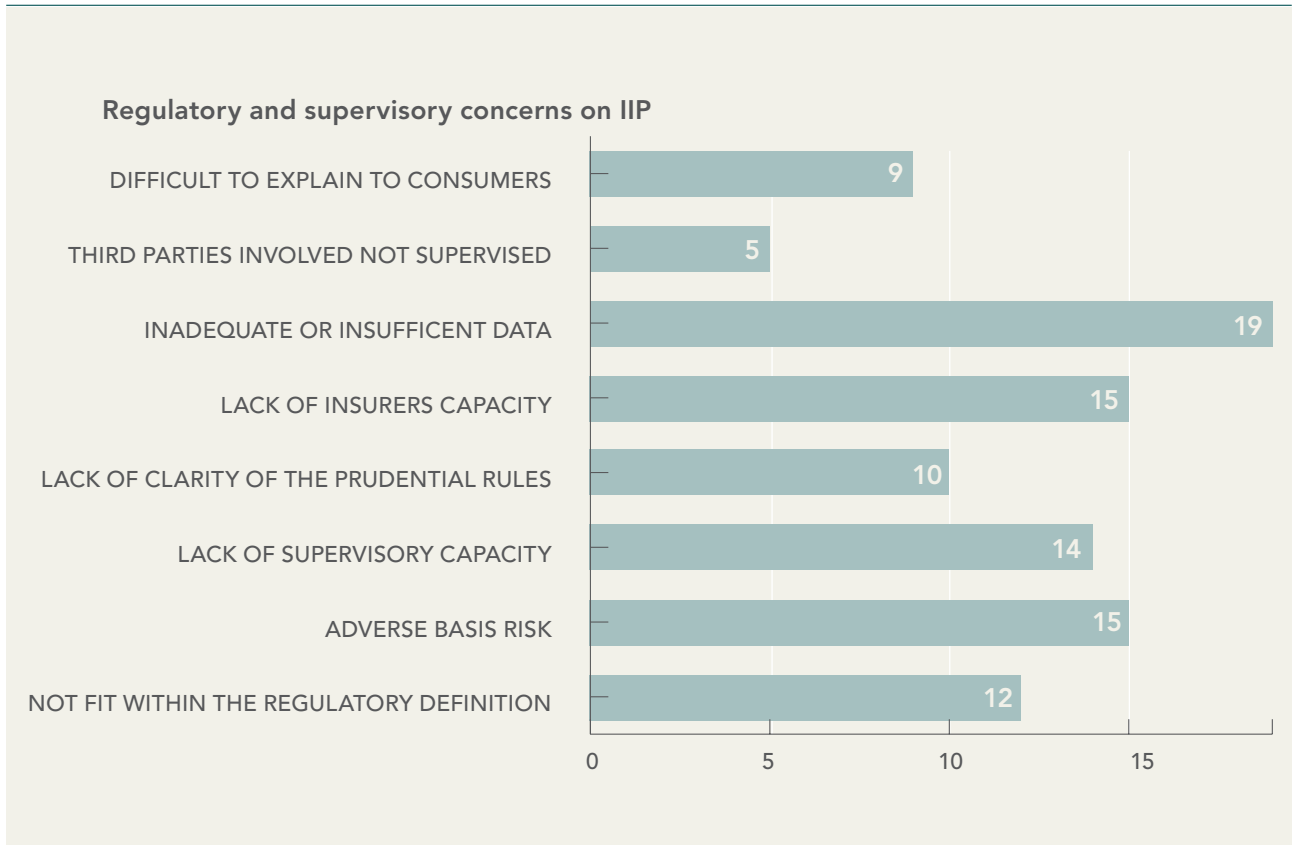


Figure 3: Regulatory and supervisory concerns on index-based insurance products (IIP)

The fact that index-based risk transfer contracts do not fit within the definition of insurance in legislation in force is a significant concern for twelve supervisors. As discussed in section 3.1, this is a key issue for these supervisors, who rely on enabling regulatory arrangements to allow, encourage and implement index-based insurance programmes in their jurisdictions.

For ten supervisors, the lack of clarity in the prudential rules applicable to insurers offering these products is a matter of concern. And nine supervisors give significant importance to the fact that complex products are hard to explain to consumers.

Finally, and just as important, it is the last topic on the list of supervisory concerns, mentioned by five supervisors: third parties involved in designing and implementing index-based insurance products, which are most often unsupervised.



### 3.3. Products – characteristics and scope

#### 3.3.1 Supervisors

According to the supervisors taking part in the survey, there are some 53 products being marketed in the sixteen jurisdictions where index-based insurance is either permitted or not forbidden, with four of them up for approval<sup>23</sup>. These products are offered by 74 insurers (figure 4).

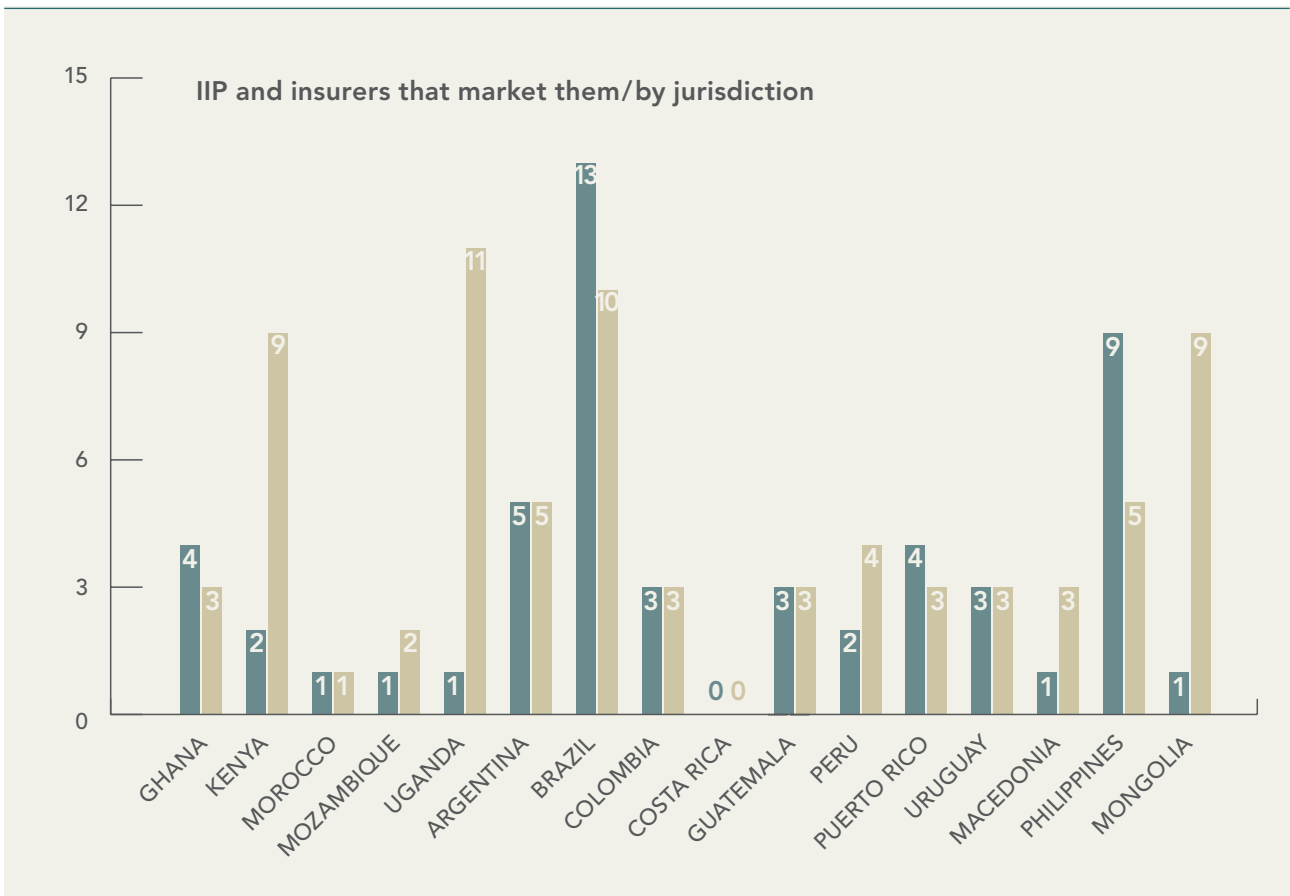


Figure 4: Index-based insurance products and insurers that market them/by jurisdiction

As some of the index-based insurance programmes implemented in these jurisdictions are structured in the form of consortia, with a single standard product for all the insurers, there are more insurers than products. This situation is found in Ghana<sup>24</sup>, Kenya, Mongolia and Mozambique.

<sup>23</sup> Puerto Rico enacted the index microinsurance regulation in July 2020, and, by December 2020, there were four products under review by the Commissioner. In Costa Rica, although the offering of index-based insurance has already been authorized through a legal opinion, no product had been submitted to SUGESE until the date of this survey. 15129630

<sup>24</sup> In Ghana, index-based insurance is provided by a pool of insurance companies – the *Ghana Agricultural Insurance Pool* (GAIP). As such, all the insurers wishing to underwrite agricultural insurance are directed to the pool.





Most index-based products available in respondent jurisdictions provide coverage for weather risks at the micro level, which mainly affects the agriculture and livestock sectors, particularly those faced by small farmers, such as drought, excessive rainfall and floods. When compared with the results of the survey conducted by the A2ii in 2018, a much broader range of products may be identified, with new and/or more complex and/or more specific indexes, such as variation in solar radiation, variation in remote sensing, and variation of agrometeorological indexes<sup>25</sup>. An increase is also observed in the number of products covering asset risks arising from weather and non-weather events<sup>26</sup> (such as earthquakes), or even designed for more sophisticated customers, such as net losses to a hydro-power plant caused by drought<sup>27</sup> (Colombia). It is interesting to note that, until quite recently, protection against this type of risk was found only in derivatives markets. Also noteworthy is biological coverage<sup>28</sup> focused on agriculture (in Ghana and Macedonia), and fire (in Brazil and Ghana) aimed at both agriculture and property. In the 2020 survey, it is also possible to observe more “aggregate loss” or “area-yield”<sup>29</sup> index-based insurance products, as reported by at least six supervisors.

Almost all these products are re-insured. Indeed, eleven supervisors reported that the index products sold in their jurisdictions are reinsured on the international reinsurance market<sup>30</sup>. Mongolia has its own state reinsurer: the Mongolian National Reinsurance Company.

While traditional distribution channels prevail in these jurisdictions, other alternative channels are also being used. Aggregators (like cotton buyers and farmer associations) offer insurance to their clients in Mozambique. Index-based insurance is taken out jointly with bank loans to farmers, underpinning these financial transactions in Uganda. In addition to traditional channels, products may be acquired through retail stores and internet platforms in the Philippines.

#### 3.3.2 Industry

Replies from industry representatives operating in emerging economies and developing countries are aligned with information provided by supervisors in these regions. However, they provide some interesting information on product innovations.

In Asia, for example, Asuransi Central Asia (ACA) offers two types of index-based microinsurance coverages at the micro level for smallholders farmers in Indonesia: i) health microinsurance, which uses the number of platelets (blood cells) as an index, is marketed either directly or through e-commerce, currently covering around 10,000 people; ii) agricultural microinsurance, which uses the volume of rainfall for agriculture as an index, is linked to loans and has been marketed by rural banks, covering around 100 farmers.

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<sup>25</sup> These products were reported by SUSEP, the Brazilian supervisor authority.

<sup>26</sup> Reported by the supervisory authorities of Brazil, Colombia, Puerto Rico and the Philippines.

<sup>27</sup> Reported by SFC, Colombia.

<sup>28</sup> Such as pests and diseases.

<sup>29</sup> According to the *IAIS Issues Paper on Index Based Insurances, Particularly in Inclusive Insurance Markets*, aggregate loss or area-yield or area-based is a type of agricultural index-based insurance where “the index is calculated as a statistic from the actual experience in the area, for example crop yield or livestock mortality, for a particular “area” or “aggregate”. The term “area yield” may be applied when crops are the insured commodity. The products provide coverage for those within the “area” and reflect an average loss experience across the area. The loss that might be incurred by an individual would usually be different to the overall “average”. Payments can then be made based on the losses that would have occurred in the “area” rather than at the “farm by farm” level.”

<sup>30</sup> Three supervisors reported that they did not have this information available.



In Africa, although most of the products sold at the micro level by the respondents are focused mainly on farmers, products are also reported that target SMEs; at the meso level they target the agribusiness sector, banks and MFIs. The main risk covered by products marketed in the region is drought, but many products also offer coverage against excessive rainfall and/or flooding as well as area-yield type products. Women's World Banking (WWB) is implementing a project in Tanzania for smallholder farmers, whose product offers coverage for input costs for germination and the full crop cycle. Sales of this insurance are linked to seed purchases, distributed by aggregators such as the One Acre Fund and SeedCo. This programme provided coverage for around 30,000 people by the end of 2018.

Other respondents (like Risk Shield) also reported business models where products are marketed on an embedded basis, tied to inputs and distributed by agribusiness traders, or through tied sales involving other financial services rendered by banks and MFIs, covering more than a million people in Zambia, and tens of thousands in other countries. In Mozambique, the distribution channel used for the *Hollard Seguros'* product is the *Empresa de Fomento Agrícola*, a national agricultural development agency set up three years ago with backing from the *Projecto Sustentá*, a project run by the Ministry of Agriculture, with the ISSM playing an active role. In Ethiopia and Madagascar<sup>31</sup>, an example of voluntary insurance is sold through a collective policy, whose distribution channels are farmer associations and cooperatives, as well as savings and credit cooperative societies (SACCOs).<sup>32</sup>

In Latin America, the Microinsurance Catastrophe Risk Organisation (MiCRO) is involved in index-based insurance supply programmes to farmers at the micro level, as well as MSMEs, low-income families, and other vulnerable and underserved segments of the population, offering coverage against earthquakes, droughts and excess of rainfall. The distribution channels used are banks, MFIs and cooperatives. The insurance products are generally bundled and/or tied to some other financial service. By the end of 2019, there were some 8,000 people covered in Guatemala, 10,000 in El Salvador, and 2,000 in Colombia<sup>33</sup>. In Paraguay, the *Aseguradora Tajy* is engaged in building up an agricultural microinsurance for smallholders. The model designed and implemented is an index-based insurance that uses the Drought Severity Index (ISSE)<sup>34</sup>, a meteorological index for sesame plantations (**Box 1**).

Contrasting with the previous information, respondents in the more developed economies reported products for a more sophisticated clientele, indicating new potential segments for index-based insurance. For example, products providing coverage against damage risks for temperature-sensitive cargoes, targeting shippers and consignees, and/or transportation and logistics companies. Others include insurance offering coverage against wind and flood, whose target markets are SMEs and large corporations, sold through traditional brokers.

An eye-catching product – that was previously protection taken out by major corporations through financial tools like weather derivatives – provides coverage against construction risks arising from delays due to rainfall. Offering this product as insurance might indicate a major shift in direction for the insurance sector.

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<sup>31</sup> Reported by Clémence Tatin-Jalerin, independent inclusive insurance consultant.

<sup>32</sup> SACCOs - Savings and Credit Co-operative Societies.

<sup>33</sup> In Colombia, the product launch took place in October 2019.

<sup>34</sup> In Spanish, *Índice de Severidad de Sequía*.



#### BOX 1

Aseguradora Tajy Propiedad Cooperativa S.A. is the first insurer owned by a cooperative in Paraguay and aims to provide insurance protection to cooperatives. Founded in 1997, to date it provides insurance services to more than 500,000 policyholders.

In the last three years, together with the IDB/MIF and USAID, Tajy has been involved in a project for the design, development and implementation of a financial tool to mitigate climate risks available to small sesame farmers: Parametric Agricultural Microinsurance (Micro Seguro Agrícola Parametrico).

This insurance provides coverage against drought, based on the Drought Severity Index (ISSE), which is established from the use of agroclimatic data (from agrometeorological stations, satellite images, and soil data) and that represents the resilience of sesame plantations to a predetermined climatic event.

The product is offered nationwide, initially at the micro level with its target markets being farmers and SMEs. The distribution channels used are grower organizations and cooperatives, which participate in education and training campaigns, so that farmers understand how parametric insurance works. Over the medium term, there is an intention to also sell this insurance through the State Bank (Banco Estatal), which serves small and medium-sized agricultural properties.

Currently, this parametric insurance is marketed independently, but the idea is to link it to credit lines as a guarantee of return on investment.

Although no governmental institution was involved in its design and implementation, meetings were held with the Ministry of Agriculture and Livestock, the Agricultural Habilitation Credit (CAH), the National Development Bank and the National Civil Aeronautics Directorate (DINAC), to promote and explain the product. The Insurance Superintendence was involved in the product approval stage. In particular, those in charge of the programme did not encounter any regulatory obstacles to the development and implementation of the parametric insurance, except for some doubts and observations about its scope, which were clarified during the meetings.

Results of Implementation in 2020: 25 weather stations installed; cooperation agreements with public and private institutions; 2,042 growers, from 80 organizations, were trained; and insurance policies issued to 208 farmers, from eleven organizations.



### 3.4. Facilitators and barriers for the provision of index-based insurance

Most respondents in the industry reported that supervisors are willing to cooperate with providers through solutions for providing index-based insurance. This is particularly notable in emerging markets and in the developing countries, where supervisors are very open to innovation and product fostering financial inclusion, such as those designed for low-income segments or related to agriculture, natural disasters and weather-related risks, as well as public health, especially after the advent of the COVID-19 pandemic. They stressed the importance of prior discussions with the supervisory authorities in order to ensure adequate explanations about the compensatory nature of the product based on the “insurable interest” at the time of contracting.

Among the facilitators for providing index-based insurance, many of the respondents underscored the importance of setting up regulatory sandboxes or innovation hubs. These have already been adopted in some jurisdictions, allowing the launch of products in a controlled environment. Successful examples mentioned include the IRA, which introduced an innovation hub to encourage the development of InsurTechs in Kenya. The IRA acknowledged the need for weather-resilient solutions, as farming accounts for around 26% of Kenya’s Gross Domestic Product (GDP). In addition to its innovation hub, the IRA offers capacity-building courses (technical expertise through training and development of techniques) to stakeholders, regulatory clarity through policy documents, and ample support through partnerships.

Similar to the innovation hubs, insurers in the more developed countries suggested that a structure be set up to assess the potential benefits and expected outcomes of innovative products. This would allow collaboration between supervisors and the industry, identifying potential undesired results or adverse effects. Furthermore, a limited window of opportunity would allow corrective actions by the insurers both before and after product implementation, provided that the corrective action is related to unintended adverse results, rather than an aspect of the product that goes against the principles of the existing regulatory scheme.

Industry respondents also feel it is important for the regulation to be sufficiently flexible to stimulate development and the launch of new products. This would include licensing requirements or even special tax legislation. Some of them also suggested the approval of distribution channels with limited training requirements, or even without formal requirements.

The regulatory or supervisory barriers mentioned include the absence of index-based insurance regulation, or even a ban on these products, often due to outdated legislation in place in many jurisdictions. In this context, some respondents also reported lack of understanding of index-based insurance products and their different nuances by regulators and supervisors, stressing the importance of their playing more active roles as facilitators. To do so, they suggest that ample discussions be arranged among the various stakeholders, in order to establish an early commitment ensuring that the current regulations are construed favourably, taking technological developments into account that are vital for leveraging this type of initiative. The shortage of data is another challenge faced by the providers, with a suggestion that an agricultural census be conducted, which could streamline with the new product development process.



For insurers operating in the USA, one of the main barriers for products that require rate and form filing control is related to the need to comply with different requirements in each of the fifty US states. They also suggested that regulatory weighting of the claims-handling efficiencies be introduced. This could lead to faster settlement for insureds, and lower insurance costs, due to the positive impacts on insurance company reserves (ALAE)<sup>35</sup>.

## 3.5 Support from technical and development agencies

The participation of technical and development agencies has been a key factor for the development of index-based insurance in many jurisdictions. In addition to technical support, development agencies have managed to forge ahead with programmes and initiatives, bringing together the many stakeholders in discussions and projects.

Interviewed supervisors and industry representatives provided several examples of successfully established agency-supported programmes (Table 3):

Mongolia	Mongolia's Index Based Livestock Insurance Programme (IBLIP), which began in 2006, was implemented through the Agreement between the Mongolian Government and the World Bank. (Box 2)
Kenya	The Kenya Livestock Insurance Project and the Kenya Crop Insurance Project <sup>36</sup> were implemented with the assistance of the World Bank and the International Livestock Research Institute (ILRI). These insurance products are based on pilot indicators, where the government subsidises premiums for farmers and the agencies provide technical support.
Madagascar & Ethiopia	Index-based insurance supply programmes have been supported by GIZ <sup>37</sup> , IFAD <sup>38</sup> , IIF <sup>39</sup> and KfW <sup>40</sup> . The supervisors were engaged in these projects even before the pilot project was drawn up. In Madagascar, the Ministry of Agriculture was involved.
South Africa	One of the pilot projects lined up for implementation is partially financed by the KfW Development Bank.
Ghana	GIZ supports the set-up of GAIP with its Innovative Insurance Products for the Adaptation to Climate Change (IIPACC) project funded by the German Ministry for the Environment, Nature Conservation, Nuclear Safety (BMU) <sup>41</sup>

<sup>35</sup> ALAE is the English acronym for Allocated Loss Adjustment Expenses, which are attributed to the processing of a specific claim. The ALAE are part of the expenditures reserves of an insurer.

<sup>36</sup> Kenya Livestock Insurance Project and Kenya Crop Insurance Project.

<sup>37</sup> Deutsche Gesellschaft für Internationale Zusammenarbeit (German Agency for International Cooperation)

<sup>38</sup> International Fund for Agricultural Development

<sup>39</sup> Impact Insurance Facility

<sup>40</sup> Kreditanstalt für Wiederaufbau/German Development Bank

<sup>41</sup> German Ministry for the Environment, Nature Conservation, Nuclear Safety



Guatemala, El Salvador & Colombia	The MiCRO entry costs into Latin American markets was significantly supported by international entities and organisations interested in strengthening resilience of the target population, including the IDB <sup>42</sup> , SDC <sup>43</sup> , MercyCorps and InsuResilience. The involvement of government institutions in the implementation projects for these products varies by country, with weak engagement among local government institutions. However, the supervisory authorities are involved from the beginning of the process.
Peru	Both the products currently in place were developed with the support of GIZ.
Paraguay	The product of Aseguradora Taja is supported by the IDB through the Multilateral Investment Fund, and AUSTRALIAN AID (AusAID) <sup>44</sup> .
Macedonia & Serbia	To address the problem of low catastrophe and weather insurance penetration in the South Eastern Europe, the World Bank, initiated a catastrophe and weather risk reinsurance programme called South-eastern Europe Catastrophe Risk Insurance Facility (SEEC CRIF). The main rationale of this initiative is to promote the development of local catastrophe and weather risk insurance markets that will enable local businesses and populations to buy affordable catastrophe and weather risk insurance products that could not be found on local commercial markets. This programme is developed under this project for Macedonia and for Serbia.

**Table 3:** Examples of successfully established agency-supported programmes

However, it is important to be aware of the consequences of eventual failures and/or interruptions in these programmes, such as suspension or delay in granting subsidies, which can generate setbacks, often with serious repercussions for their beneficiaries and the market. For example, one of the interviewees reported a situation involving the untimely payment of subsidised premiums by the donor agency, which led to non-payment of claims to beneficiaries of an insurance programme in Tanzania.

<sup>42</sup> Inter-American Development Bank

<sup>43</sup> Swiss Agency for Development and Cooperation

<sup>44</sup> Australian Agency for International Development



## BOX 2

### THE MONGOLIAN CASE

Mongolia has a long tradition of raising cattle in its vast territory. Statistics show that in 2019, 233,317 families owned livestock, while herders make up 18% of the country's total labour force. A total of 71 million livestock were reported, out of which: 472,379 were camels; 4,214,818 were horses; 4,753,192 were cattle; 32,267,265 were sheep; and 29,261,661 were goats.

The Index-based Livestock Insurance Program (IBLIP) began in 2006 and was implemented in three provinces (*aimags*) according to the Agreement between the Government of Mongolia and the World Bank. In 2012, this programme had expanded and currently can reach herders in all 21 *aimags* in Mongolia. The Index-based insurance for livestock mortality has helped herders to build up their resilience against weather-related risks, such as extreme weather conditions known as the "dzuds" and the risk of massive livestock losses due to extreme snowstorms. Index-based insurance programmes aim to make pay-outs on the index of aggregated criteria, such as livestock losses over a geographical area rather than material losses.

In 2014, the Government of Mongolia approved the Law on Index-based Livestock Insurance, according to which the *Mongolian National Reinsurance Company* was established to develop the agricultural reinsurance system, fully owned by public sector.

In 2015, the *Mongolian National Reinsurance Company* implemented initial sales of Index-based Livestock Insurance policies in 21 *aimags*, through 1,805 insurance agents from the six insurance companies cooperated at that time, namely: "Mongol Daatgal" LC., "Tenger Daatgal" LLC., "Bodi Daatgal" LC., "Practical Daatgal" LLC., "Monre Daatgal" LLC. and "Mig Daatgal" LLC. Moreover, two commercial banks - the "Khaan Bank" and the "State Bank of Mongolia", granted the discounted credits of USD 355,722 to the insured herding families in 2015.

In 2019, the *Mongolian National Reinsurance Company* has been cooperating with nine insurance companies, namely "Mongol Daatgal" LC., "Tenger Daatgal" LLC., "Bodi Daatgal" LC., "Practical Daatgal" LLC., "Monre Daatgal" LLC, "Mig Daatgal" LLC, "Ard Daatgal" LC, "Nomin Daatgal" LLC and "Khaan Daatgal" LLC. In total, MNT<sup>45</sup> 1.6 billion insurance premiums were collected by these insurers, equivalent to US \$ 1,359,804.

<sup>45</sup> Mongolian tugrik



### 3.6. Supervisory Capacity

Among the interviewed supervisors, twelve stated that they do not have the necessary resources and training to supervise index-based insurance properly; while eleven supervisors stated that they are qualified to do so, and five did not answer. However, even among those who felt that they had the technical resources to supervise index-based insurance, there is a strong demand for capacity-building on this issue.

Index-based insurance supervision varies in each jurisdiction. In some of them, like Peru, index-based insurance products are supervised under the same prudential procedures and rules as other non-index insurance products. In Ghana, the insurance law requires all insurers to request supervisory approval before starting to sell the product; however, the NIC<sup>46</sup> frequently analyses registration applications in detail, in order to ensure that there is value for the client and also to at least ensure that the products are simple and straightforward. Annual and statutory analyses and oversight are also implemented in order to monitor their performance and profitability. In Morocco, ACAPS considers that it has the resources, with significant experience in insurance product control and both legal and technical expertise, particularly in actuarial.

Despite having built up enough experience to make them reasonably well qualified to supervise these types of products, some supervisors - like the ISSM in Mozambique - feel that ongoing training is needed. Although the IRAU<sup>47</sup> has certainly built up a lengthy track-record in Uganda with regulations that are fairly broad-ranging on this matter, it remains open to training and a better understanding of the use of index-based insurance.

Due to the innovative nature of index-based insurance, the Commissioner of Insurance of Puerto Rico turned to external resources to obtain the expertise needed to assist with the technical aspects of product regulation and assessment. Over the long term, the supervisor feels that resources must be identified in order to train its employees in this matter, thus ensuring continuous and appropriate supervision for this type of insurance.

In some jurisdictions, index-based insurance supervision is delegated to other entities, generally linked to the Minister of Agriculture, as occurs in Argentina and Uruguay<sup>48</sup>.

In markets where there is an industry demand for the recognition of index-based risk transfer contracts within the insurance regulatory framework, many supervisors acknowledge the need to be gear up for new challenges. In Bolivia, APS<sup>49</sup> is expecting to foster development and strength the technical skills of its staff. In Costa Rica, SUGESE feels that training is needed for those in charge of reviewing product registration, as its design and operation differ from traditional insurance, both for reviewing contract documentation as well as the product design. Moreover, training may be needed for those in charge of supervising market conduct aspects, as the settlement process differs from traditional insurance; and for product supervision, a better understanding of modelling is needed, defining whether payments and amounts are well-founded or not, based on presumed activation of the agreed index.

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<sup>46</sup> National Insurance Commission, in Ghana.

<sup>47</sup> Insurance Regulatory Authority of Uganda.

<sup>48</sup> Supervision is delegated to the *Oficina de Riesgo Agropecuario y Seguro (ORA)/Ministerio De Agricultura Ganadería y Pesca*

<sup>49</sup> *Autoridad de Fiscalización y Control de Pensiones y Seguros*, the Bolivian Supervisory Authority.





In South Africa, the FSCA expects supervisors to become more familiar with the risks inherent in index-based insurance and what to look out for, after the implementation of index-based insurance programmes under the regulatory sandbox. For the FSPA, supervisory staff need far more training in how these products work, as they could be far more complex: for example, the basis risk is a new type of risk introduced by these products which was not historically included in supervision risk assessments. It will thus be necessary to build up experience over time.

In Vanuatu, the RBV<sup>50</sup> believes strongly in the demand for this type of product in the country. In order for the market to develop, technical support will be needed, including demand research, regulatory changes (to include index-based insurance products), product design, supervisory training and database development, among other aspects that are insufficient today. According to the supervisor, all they need is to begin somewhere.

In several of the Caribbean jurisdictions – where rising interest in this matter is noted due to constant weather risks faced by this region – the supervisors stressed the need for capacity-building and, in some cases, the development of specific enabling policies for index-based insurance products.

## 4. CONCLUSIONS

The A2ii survey conducted during the second half of 2020, aimed at supervisors and representatives of the industry, reflects significant development in index-based insurance that currently goes beyond its initial focus - on the risks of agriculture and livestock for smallholder farmers. If in the previous survey it was still necessary to prove its ability to provide insurance coverage, the success of countless programmes and products in place – with innovative and more accurate indexes and business models using distribution channels better adapted to the realities of each jurisdiction, and even for more sophisticated publics – shows that this type of insurance can produce good results, especially when under an adequate insurance supervision framework.

Interest in index-based insurance in emerging markets and the developing economies is on the rise among supervisors, with many specific regulations approved during the past five years. In many jurisdictions, technical and development agencies have played decisive roles in the development of index-based insurance. However, attention and care are required to avoid frustrating expectations, leading to backsliding due to a lack of timely support.

The main regulatory barriers for index-based insurance are caused by their similarity to weather derivatives and the compensatory nature of insurance. Depending on the regulatory framework in each jurisdiction, supervisors have adopted three core regulatory approach lines for addressing these issues: i) specific legislation/regulation; ii) legal opinions based on the 'insurable interest' at the date of contracting; and iii) pilot/regulatory sandbox.

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<sup>50</sup> Reserve Bank of Vanuatu.



In addition to an appropriate regulatory approach to make index products viable under the insurance regulatory framework, supervisory and regulatory concerns are focused on: i) inadequate or insufficient data on this type of product; ii) lack of actuarial and technical capacity available to insurers to design and implement index-based insurance; iii) adverse basis risk; and iv) lack of experience or technical ability of the supervisors themselves. In this area, many of the supervisors state that they lack the resources and capacity-building needed to supervise index-based insurance properly; even among those who feel they are adequately endowed with them, there is a strong demand for capacity-building on this topic, which must be taken into account by all the stakeholders eager to support the development of index-based insurance.

As already noted above, although this document is not intended to issue specific recommendations, it is expected that the points raised here will support supervisors and other stakeholders pursuing solutions for the provision of index-based insurance in their own jurisdictions.

The speed with which index-based insurance is evolving, largely thanks to technology and digitalisation, reaching new segments and customers, raises the need to continuously monitor products, as well as their value and impact for consumers. And the new products to come, with increasingly varied and innovative indexes, will certainly continue to pose new challenges for supervisors.



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