



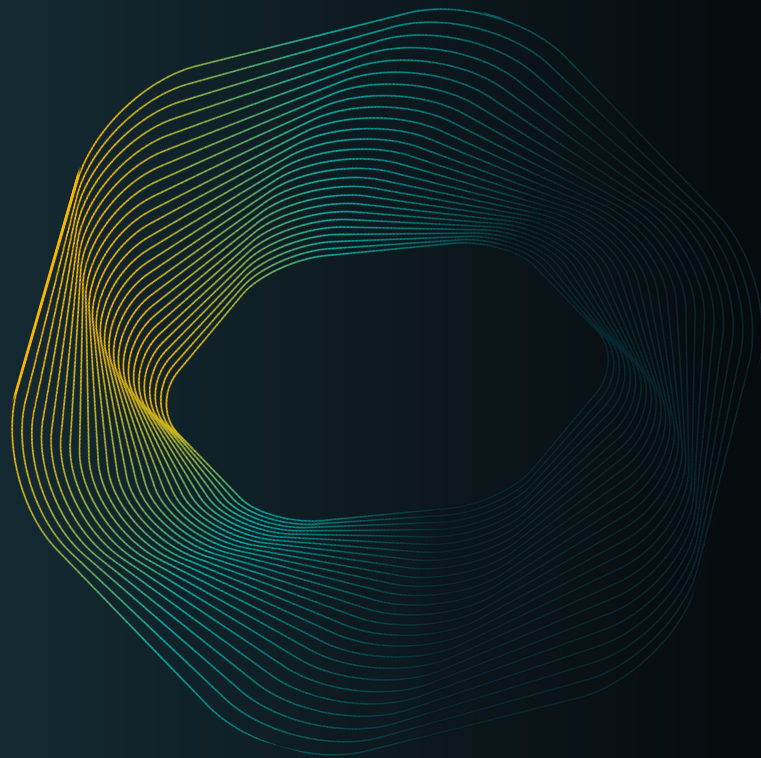
Climate Resilience Insurance: Learnings, Gaps, Opportunities

The Climate Landscape Series

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BFA GLOBAL



The Climate Landscape Series Decks

Welcome to our Climate Landscape Series, now available as a public good for all interested parties. Produced by BFA Global, this collection of decks spans essential topics in climate action and finance, including climate justice, the dynamics of digital and climate finance, and the impact of climate change on gender, among others. Aimed at demystifying the complexities of climate action, this series is particularly beneficial for those at the forefront of environmental and financial inclusion efforts, including microfinance institutions, fintechs, and a broad spectrum of stakeholders such as policymakers, financial service providers, NGOs, and academic researchers.

This series, **Climate Resilience Insurance**, for the current landscape, is designed to inform agricultural policymakers, insurance industry professionals, financial inclusion experts, agribusiness leaders, technology innovators in the agri-finance sector, and government officials overseeing agricultural development. Additionally, it would benefit development agencies, non-governmental organizations advocating for smallholder support, and investors interested in sustainable agricultural advancements and financial tools for climate adaptation. By making this content widely available, we aim to empower a diverse audience to develop, benchmark, and implement inclusive and effective strategies and policies for a more resilient and sustainable future.

Our objective is to ensure that this comprehensive resource contributes to the global discourse on climate action, serving as a foundational tool for enhancing climate resilience and fostering inclusive, sustainable development.

01

The role of agriculture insurance in building smallholder resilience

While acknowledging the existence of varied insurance models, this presentation zeroes in on agricultural insurance because:

1. It's closely tied to smallholders' livelihoods through crop yields, safeguarding their main income against climate-induced crop failures.
2. It stands out as the predominant risk management tool in the sector, providing rich opportunities for insights into product and business model innovations.
3. Agricultural insurance has the most extensive track record of integration with other financial services tailored to smallholder farmers.

Climate risk vulnerability in smallholder agriculture

- Climate change significantly increases the frequency and impact of extreme weather and natural hazards. Livelihoods that heavily depend on natural resources and predictable weather patterns – small-scale agriculture, fisheries, and forestry – **are particularly vulnerable to these risks.**
- Smallholders have to invest in modernizing their farming and fishery practices, but the high prevalence of occasional but **highly disruptive shocks presents a serious risk of those same investments going to waste.**
- Over generations, farmers have developed traditional strategies to manage risks independently, but **they fail completely for catastrophic risks** such as major droughts or hurricanes that impact entire communities and the wider economy at the same time.
- In the absence of additional and climate-specific risk management solutions, **the financial burden of the related losses falls heavily on these individuals and their communities**, hindering their ability to recover and rebuild after shocks, and inhibiting their economic advancement over time.
- Climate shocks strain smallholders as **local credit services and communities struggle to provide simultaneous assistance**, forcing them to liquidate assets, deplete savings, cut consumption, and resort to additional loans, perpetuating their poverty.
- These unmitigated risks also severely limit their income potential. Exposure to weather and **climate-related risk discourages farmers from profitable but risky cash crops like cotton**, choosing instead to cultivate beans, maize and other crops that may be safer but much less profitable.

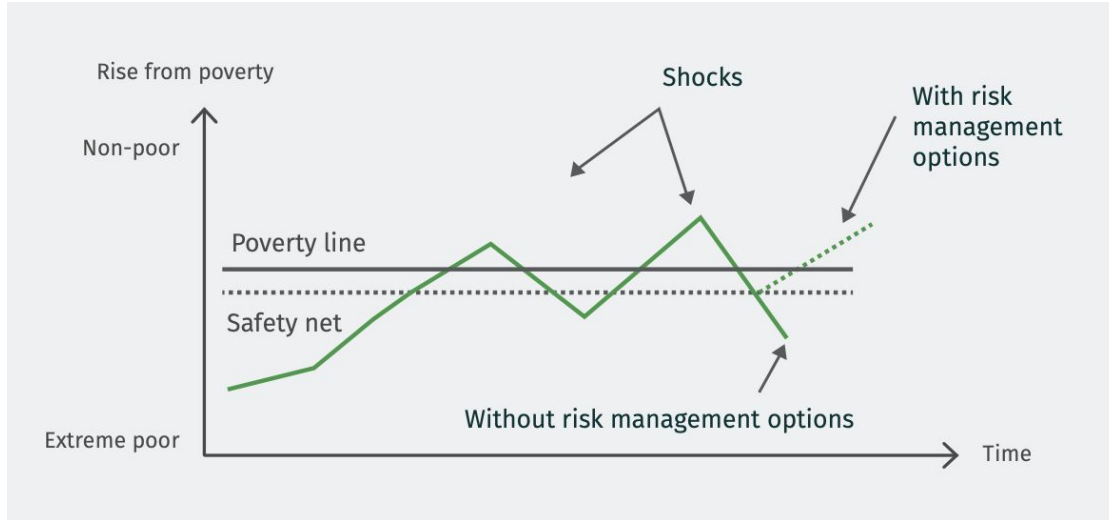


Unmitigated climate risks in small scale agriculture pose a serious threat to financial inclusion

-  **Increased default risk** – Uninsured climate risks can lead to increased defaults on loans and financial obligations, as smallholder farmers may struggle to repay debts in the aftermath of climate-related disasters.
-  **Reduced access to credit** – As financial institutions face higher default risks, they may become more cautious in extending credit to smallholders, limiting access to financial services for farmers who need support for recovery and growth.
-  **Financial instability risk** – Climate-induced disruptions can create financial instability across the agricultural sector, affecting the overall economic landscape. Financial institutions with significant exposure to agriculture may face challenges in maintaining stability.
-  **Weakened agri value chains** – Uninsured climate risks can disrupt the entire agricultural value chain, affecting various stakeholders such as input suppliers, processors, and traders. This, in turn, impacts the financial health of institutions involved in these interconnected activities, and can threaten food security efforts.
-  **Undermined financial inclusion progress** – Climate-related shocks can hinder progress toward financial inclusion objectives by creating barriers for smallholders to engage with formal financial services. Lack of insurance options exacerbates vulnerability, hindering efforts to build resilient financial ecosystems.



Unmitigated climate risks in small scale agriculture pose a serious threat to financial inclusion



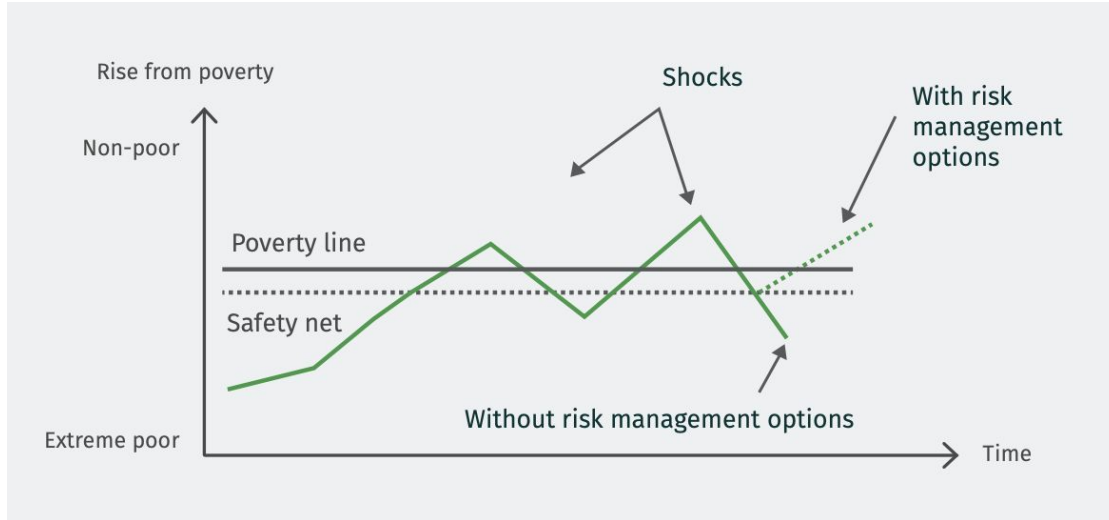
This next slide example, adapted from MCII, depicts how risk management solutions such as insurance can **help smallholders lead a trajectory out of poverty**.

Inclines depicted in green **reflect times of asset building and income growth**, while declines are the result of **shocks and economic stresses** that can push expenditures beyond income, and force the sale of assets and reduction of consumption.

(contd...)



Unmitigated climate risks in small scale agriculture pose a serious threat to financial inclusion



Insurance acts as a financial safety net for smallholders, mitigating the impact of climate shocks by providing timely payouts. This helps prevent the forced sale of assets and consumption reduction, allowing them to recover swiftly and maintain a positive trajectory towards poverty alleviation – depicted in the dotted green line.



Agriculture insurance can reduce the national burden of climate shock response. A mere 1% rise in insurance adoption can **alleviate the disaster recovery burden on developing nations by 22%**

Insurance offers dual benefits to smallholders – In addition to protecting farmers when a shock happens, access to insurance encourages smallholders to **increase farm investments by up to 30%**



The role of agricultural insurance in climate resilience for smallholder farmers

2. Insurance mechanisms **enable the spreading of risk across a larger pool of policyholders**, preventing a single individual or community from shouldering the entire economic impact of a climate-related disaster.

4. Agricultural insurance serves as a vital safety net. For smallholders involved in crop agriculture and small-scale fishing insurance has one significant advantage: when the contract issues full payment, the **payouts will fully cover the farmer's investment, allowing her to continue farming the next year.**

1. At its core, insurance provides farmers with financial support by **bridging the gap between periods of financial stability and times of need during shocks**. While savings also serve this purpose, insurance payouts are contingent on covered shocks, independent of the amount a farmer has previously contributed.

3. Access to insurance also **promotes climate resilient agriculture**. With risk coverage, smallholders are more willing to make investments into stress tolerant seeds and other climate smart agriculture practices.



The role of agricultural insurance in climate resilience for smallholder farmers

6. Governments and local institutions often lack the resources and capacities to fully invest in comprehensive risk mitigation measures in the face of climate change. **Insurance acts as a complementary tool, filling gaps and enhancing overall resilience.**





5. Agricultural insurance extends its impact beyond individual farmers, **playing a crucial role in building community resilience.** By stabilizing local economies and preventing widespread economic setbacks resulting from climate-related disasters, it contributes to the overall well-being and sustainability of communities reliant on agriculture.

7. Agricultural insurance facilitates the adoption of climate-resilient practices by providing a financial safety net for smallholders. This **enables them to explore more diverse and potentially profitable crops,** promoting resilient agriculture that adapts to changing climate conditions.



Multiple insurance products cater to the specific requirements of small-scale agriculture

Different types of insurance that play a crucial role in providing financial security to farmers and agricultural businesses by mitigating the impact of unforeseen events. Each type is tailored to address specific risks associated with different aspects of agricultural activities. **Over 80% of global agricultural insurance at the moment is allocated to crops.** As such, crop insurance is the focus of this presentation.

| | Type | Description |
|--|-------------------------------------|--|
|  | Crop insurance | Provides financial protection to farmers against losses incurred due to factors such as adverse weather conditions, pests, and diseases. It typically covers the costs of inputs and potential income losses resulting from crop failure. |
|  | Livestock insurance | Offers coverage for losses in the value of livestock due to events like disease outbreaks, accidents, or natural disasters. It helps farmers mitigate the financial impact of losing their animals, which are valuable assets. |
|  | Farm and equipment insurance | This type of insurance protects farmers' assets, including machinery, equipment, and infrastructure, from risks like theft, fire, or damage. It ensures that the financial burden of repairing or replacing essential farming tools is alleviated. |
|  | Fishery insurance | Covers risks related to aquaculture and fisheries. It may include coverage for losses caused by events such as disease outbreaks in fish populations, damage to fish farms, or disruptions in the supply chains |



02

The state of the agriculture
insurance sector



The state of the agriculture insurance sector

In the present market, the driving force behind insurance demand stems predominantly from institutional and organized stakeholders within the agricultural value chain, particularly aggregators, rather than individual farmers. This includes input **providers, coops, NGOs, governments**

Significant strides have been made in developing new insurance products, yet a substantial gap in coverage persists, particularly for smallholder farmers. The gap stems from:

- 1) Low demand due to smallholder farmers' low understanding and trust in complex financial products with high costs and convoluted payout mechanisms
- 2) Low supply as developing, distributing, and servicing insurance policies is complex and expensive for service providers.

Over **80%** of global agricultural insurance is allocated to crops, with a recent growth in insurance for livestock, horticulture (including greenhouses), aquaculture/fisheries, and forestry.

The state of the agriculture insurance sector

Private insurers dominate the agricultural insurance landscape, leading approximately **60%** of programs globally, with this figure rising to **71%** in Africa.

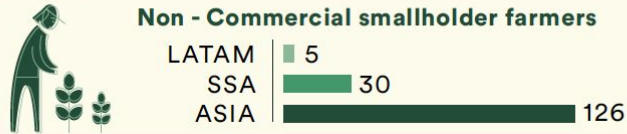
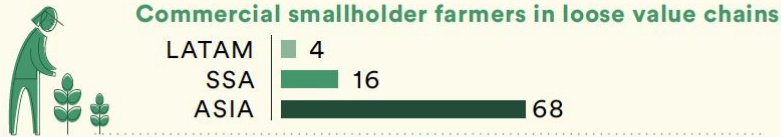
Over 100 micro-level insurance schemes exist, with a significant concentration in a few countries. China and India together constitute 80% of the coverage in low and middle income markets.

Over half (56%) of agricultural insurance programs are reinsured internationally, driven by extensive private sector participation and the widespread use of index-based insurance

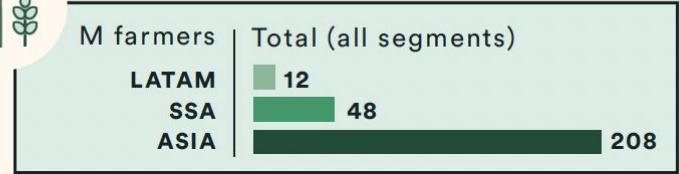


Globally over 270 Million smallholders need insurance services

Breakup of farmer by type (M)



Regional breakup of focus farmers



FOCUS

Note: China excluded from projections.



The landscape of agriculture insurance solutions

| AGRI-INSURANCE PRODUCT MAP FOR SMALLHOLDER FARMERS | | | | | | | |
|---|--|---|--|---------------------|-----------------------|--|---|
| RISKS COVERED | | | | | | | |
| | | DROUGHT/ TEMP | EXTREME PRECIPITATION | TYPHOON/ CYCLONE | PESTS AND DISEASES | PRICE VOLATILITY | OTHER... |
| TYPES OF COVER COVER VALUE, COST AND COMPLEXITY ↓ HIGHER | INPUT COVER (Cost of seed/ fertilizer) | Seedco/ACRE; Kenya (P: Rainfall) | | | | N/A | |
| | | Pula input subsidy scheme; Nigeria (P: Area Yield) | | | | N/A | |
| | PRODUCTION EVENT COVER (Cost of alternatives, e.g. animal fodder) | Pula IBLI Kenya (P: NDVI) | MiCRO catastrophic event protection; Latin America (P: weather) | | | N/A | |
| | LABOR COVER (Cost of labor) | | PepsiCo India (P: humidity and temperature) | | | Risk Shield trial (P: area yield index + price) | <i>Many other events may be covered in addition to the major categories depicted here</i> |
| | REVENUE PROTECTION (Revenue below expected threshold) | OKO revenue protection; Mali (P: Rainfall) | Vision Fund (P: Portfolio default rate; Yield index) | | | Value chain contract alternatives (e.g. floor prices) | |
| | ASSET PROTECTION (Livestock death) | | IBLI Mongolia (P: Regional livestock mortality rates) | | | N/A | |
| | | MANY EXAMPLES | SOME EXAMPLES | FEW EXAMPLES | P: KEY PARAMETER | | |

Recent advances in index design present an opportune time for the sector to shift from defining insurance solely by the selected index to a more informed understanding of the product, **aligning with farmer realities in terms of covered risks and insured amounts.**

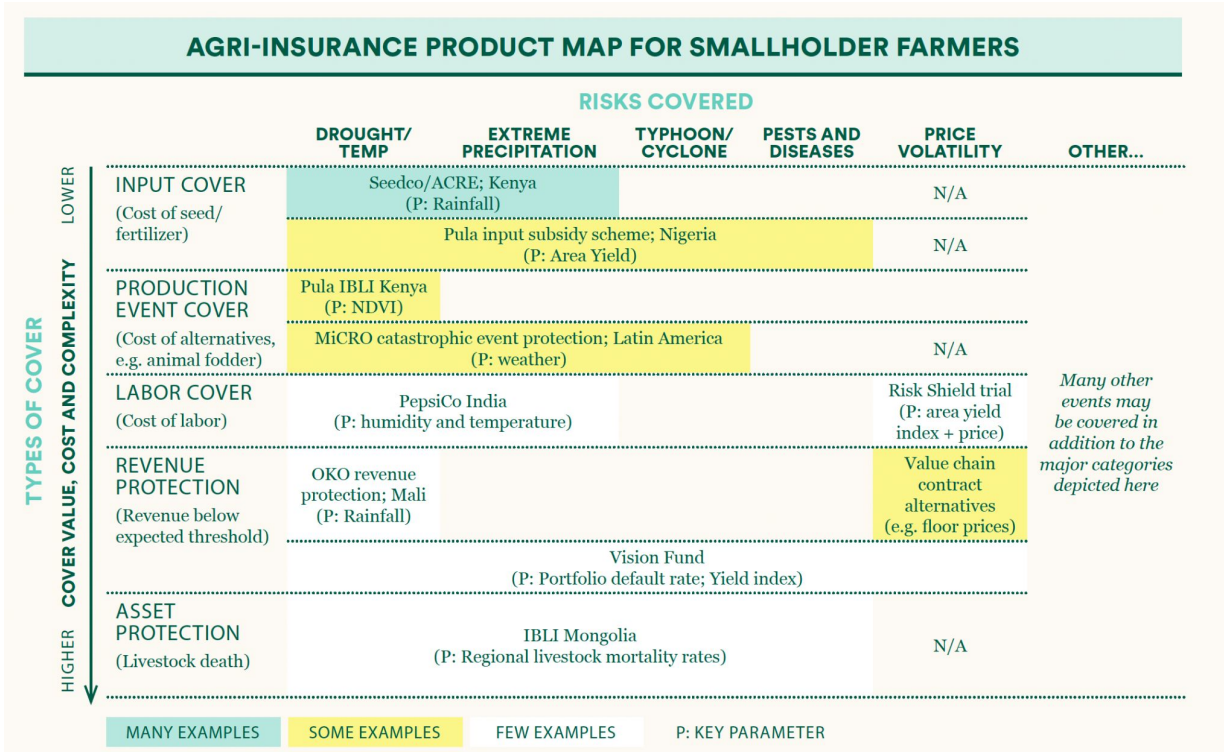
Agri-insurance products have **gradually become more sophisticated** in the last decade, particularly in terms of quality, range of risks and events covered, as well as affordability.

(contd...)

Source: [State of the Sector: Agri-Insurance for Smallholder Farmers – A Global Stocktake of an Evolving Industry](#), March 2022; Insurresilience Solutions Fund and Micro Insurance Network



The landscape of agriculture insurance solutions



Agriculture insurance has **shifted from indemnity to parametric products**, particularly in markets lacking robust public welfare systems, with prevalent use of weather index, area yield index, and normalized difference vegetation index (NDVI).

Source: [State of the Sector: Agri-Insurance for Smallholder Farmers – A Global Stocktake of an Evolving Industry](#), March 2022; Insurresilience Solutions Fund and Micro Insurance Network



Evolution of the agriculture insurance ecosystem

The emerging agricultural insurance ecosystem reflects a collaborative model **involving insurers, reinsurers, aggregators, and innovating intermediaries such as insurtechs, data analytics firms, and consultants**. This dynamic landscape relies on intermediaries to craft tailored insurance products delivered through various aggregators, emphasizing the **critical role of value chain players in driving demand**.

-  In agri-insurance, the market dynamics are characterized by collaboration between insurers, re-insurers and **"innovating intermediaries"** – insurtechs, back-end solution providers, data analytics firms, and specialized consultants.
-  Intermediaries are instrumental in creating tailored insurance products that are **delivered through various "aggregators"**, including governments, development agencies, agri value chain companies, and financial service providers.
-  **Insurtech companies are driving most of the recent innovation** in the agriculture insurance sector, improving index products, developing new distribution models, providing farmer-facing tools, and providing a platform for aggregating partners.

(contd...)



Evolution of the agriculture insurance ecosystem

- **Local insurers** primarily underwrite these insurance solutions but do not take a leading role in product development or market introduction.
- **Donors** play a crucial role in catalyzing market development by actively funding innovation and scaling up solutions, but their role has shifted towards ecosystem support as provider models mature and attract more commercial capital.
- **Governments** are also increasingly adopting strategies to support adaptation of smallholder farmers, playing a mix of three roles: regulator, enabler, and or distributor.

Transformative dynamics of the emergent ecosystem of agriculture insurance models

VALUE CHAIN PLAYERS



RE-INSURER

ACTIVELY ENABLING

- Highly engaged re-insurers taking a long-term view and variety of positions including: i) investing in insurtechs (e.g Blue Marble); ii) directly investing; iii) CSR involvement



INSURERS

LARGELY FOLLOWING

- Largely passive participants investing little, retaining little risk and relying on intermediaries to support distribution
- A few global exceptions include Royal Nigeria Exchange, Hollard, SANASA



INTERMEDIARIES

LARGELY DRIVING

- Highly engaged actors supporting the development and roll out of solutions with emerging business:
 - End to end insurtechs: ACRE, PULA, OKO, MiCRO, Risk Shield
 - Back-end-solution providers: Global Parametrics, Agritask, eLeaf
 - Consultants: Guy Carpenter, AB Consult, Inclusive Guarantee



AGGREGATORS

GROWING DEMAND

- Growing demand for insurance options, particularly from input providers, Governments, FSPs, development agencies and value chain aggregators



FARMERS

HIGHLY DISENGAGED

- High need with significant and growing concern about climate related risks including pests and diseases
- However, still low awareness, understanding and demand for insurance

ECOSYSTEM ENABLERS



DONORS

ACTIVELY SUPPORTING AND SHAPING INVESTMENTS

- InsuResilience established as the largest scale funder for agri-insurance
- Grant-based funders continuing to support product and tech innovation (e.g., USAID, GAN, GIIF, SCD, Gates Foundation)



INITIATIVES

- USAID funded BASIC program, WB GIIF, MCI, MIN, ILO and others focus on distilling high level learnings, policy advocacy
- WFP R4 and Syngenta Foundation programs focused on catalyzing markets



REGULATOR

LARGELY REACTING

- Some engaged regulators proactively seeking to develop the agri-insurance market, most often through regulation only but sometimes as a direct distributor (e.g., India, Nigeria, Peru)



DATA AND TECH

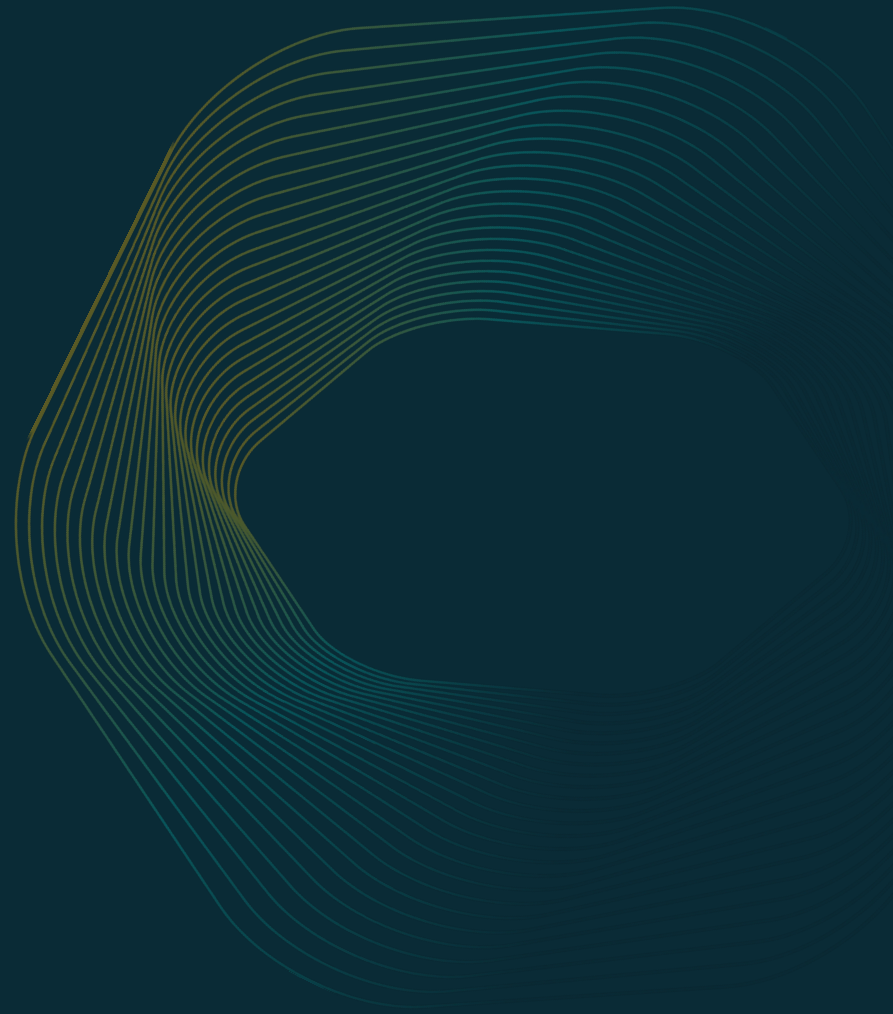
OPPORTUNISTICALLY ENGAGING

- Public data sources maturing
- A number of private data-companies (e.g., aWhere, Earth Networks, ClimaCell) providing more advanced analytics and data sets that are being used by agri-insurance providers

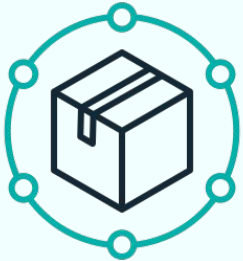


03

Lessons in the development
of the agriculture insurance
ecosystem

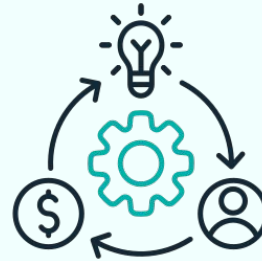


Recent lessons and trends in the evolution of the agriculture insurance sector



Product

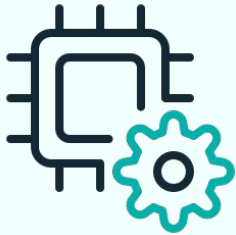
- Shifting from single weather-based indices to more reliable, tailored indices addressing multiple perils.
- Integration of agriculture insurance as a tool within climate adaptation and resilience strategies.
- Bundling insurance solutions with other services, such as input insurance with credit or farm input subsidy programs.



Business Model

- Dominance of intermediaries and aggregators in distributing over 90% of solutions.
- Inclusion of major agri-food companies engaging with smallholder farmers to support tailored agri-insurance initiatives.
- Emergence of effective business models driven by a mix of players, including financial institutions, agri value chain operators, governments, and insurtechs.

Recent lessons and trends in the evolution of the agriculture insurance sector



Technology

- Integration of satellite imagery, remote sensing, and IoT devices for accurate monitoring and prediction.
- Digitization and widespread smartphone use to enhance accessibility, data collection, and policy processing.
- Utilization of data analytics tools, big data techniques, machine learning, and artificial intelligence for risk modeling and predictions.






Ecosystem

- Increased donor coordination and collaboration contributing to a more integrated approach.
- Global emphasis on climate adaptation is influencing a holistic understanding of small scale agriculture, food systems, food security, and associated risks.
- Growing collaboration and supportive partnerships within the agri-insurance market, reflecting evolving dynamics and increasing engagement of various stakeholders.

Trends reshaping the agri-insurance industry landscape

The agriculture insurance sector is emerging from a siloed piloting phase of the industry toward a more transparent, coordinated, and integrated approach driven by global and regional infrastructure, and increased donor coordination and collaboration. Multiple trends are impacting this transition:

The growing **frequency and intensity of extreme climate events pose a significant challenge to the validity of historical weather models**, which serve as the foundation for many weather index insurance products. As climate patterns become more unpredictable, the reliance on past data may undermine the accuracy and reliability of these models.

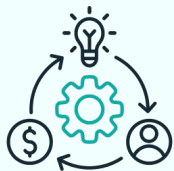
-  The market is experiencing a **shift from a single weather-based index approach to more reliable, tailored indices addressing multiple perils and improving overall accuracy**. Agriculture insurance is witnessing a trend of experimenting with and integrating new technologies, diverse data sources, and indices to enhance modeling and monitoring.
-  Agri-insurance is undergoing a shift in perspective, where **it's viewed not as a standalone solution but as a tool integrated with other approaches**, and increasingly aligning it with emerging climate adaptation and resilience strategies at national and international levels.
-  **Bundling has become the norm.** Over 90% of solutions are distributed through pre-aggregated farmer networks, bundled with other services and products. For example, in Zambia, the government bundles input insurance with its farm input subsidy programme. Under the scheme the insurance premium is pre-financed by the programme, but paid by the farmer as part of a mandatory cash contribution to access a package of essential inputs.



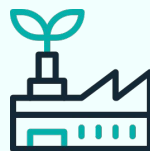
Climate-driven shifts: New partnerships and dynamics in the agri-insurance ecosystem

Changing climate risk headwinds are bringing more players to the agri-insurance ecosystem, and unlocking new partnership opportunities.

The **shifting global emphasis on climate adaptation**, coupled with a holistic approach to understanding food systems and associated risks, is giving rise to a novel interconnected context for agri-insurance tailored to smallholder households.



The **most effective business models for agri-insurance in emerging markets are often driven by a mix of intermediaries or aggregators**, from financial institutions to agri value chain operators to governments and insuretechs – all players in the global economy with existing business models already impacted by climate change.



Additionally, **major agri-food companies are also deepening their engagement with smallholder farmers**, with many now exploring avenues to support agri-insurance initiatives tailored for the producers supplying inputs for their products. This marks a noteworthy evolution, reflecting a growing trend towards collaborative and supportive partnerships within the agri-insurance market.

Agri-insurance technology trends and innovations

Technological advancements in agricultural insurance, from satellite imagery to AI-driven analytics, are encouraging and hold promise for exciting product and business model innovations as the global tech ecosystem accelerates. Examples that are already integrated, at some level, in agriculture solutions for smallholders in Asia and sub-Saharan Africa include:



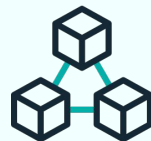
Satellite imagery and remote sensing are used for accurate crop monitoring and yield prediction.



Digital platforms and mobile connectivity are essential for data collection, policy issuance, and claims processing, enhancing accessibility for farmers.



IoT devices are often used to monitor environmental conditions, soil health, and crop status in real-time.



While still experimental in agri insurance, **blockchain** holds the potential to offer transparent and tamper-proof record-keeping, enhancing trust in insurance transactions.

Agri-insurance technology trends and innovations



Data analytics tools and big data techniques are used for in-depth analysis of historical patterns and trends, aiding in risk modeling.



In some markets, **drones** can be used for efficient and detailed crop monitoring, enabling quicker and more precise assessment of damages.



Machine learning algorithms can be used to refine risk models and enhance predictive analytics, and **artificial intelligence** can support predictive capabilities crucial for accurate event modeling, and can enhance accuracy in farmer profiling and customer support.

03

Persistent gaps and
emerging opportunities



While extremely promising as a solution to build resilience and unlock productivity, access to agricultural insurance remains very low.

Globally, **4 out of 5 farmers** do not have access to insurance. Coverage in sub-Saharan Africa is **less than 3% of the total farmer population**.

[Insurresilience Solutions Fund](#), 2019



Over **270 million smallholder farmers** require USD 80 billion in agricultural insurance, representing an annual premium of **USD 8-15 billion**.

[Insurresilience Solutions Fund](#), 2019



Despite recent progress significant gaps remain

Technology integration gaps: The integration of recent advancements, such as satellite imagery, remote sensing, AI and machine learning, into agricultural insurance practices is not yet widespread globally.

Limited product diversity: Insurance coverage often focuses on basic protection, such as input cost recovery, leaving farmers with limited options for comprehensive risk management.

Limited coverage and regional disparity:

Globally, the majority of farmers lack access to agricultural insurance, with coverage in sub-Saharan Africa remaining extremely low. Uptake of agricultural insurance is hindered by high premiums, necessitating innovative solutions and smart subsidy design for affordability.

Digitization challenges: Despite the potential benefits of digital technologies, a notable gap exists in the digitization of data for processing contracts and claims globally, hindering the efficiency and scalability of insurance.



Despite recent progress significant gaps remain

Continued challenges in risk modeling: Globally, there are challenges in developing effective risk models that cater to the diverse agricultural contexts and crops found across different regions, impacting the relevance and accuracy of insurance products.

Gender disparities persist: Inadequate attention to gender-specific needs in agriculture insurance worldwide may contribute to reinforcing inequalities, emphasizing the importance of gender-inclusive approaches.

Financial services integration gap: The integration of agricultural insurance with other financial services, particularly by traditional banks or microfinance institutions, is not consistently observed globally. More efforts are needed to promote collaboration between financial service providers and insurance entities to offer bundled solutions for smallholders.



Boosting adoption: scalable, affordable channels

Uptake of agricultural insurance remains low, particularly in sub-Saharan Africa. While recent innovation funding has led to some product improvements in the last decade, there is a need to now shift the focus to supporting innovations that can **achieve low-cost channels for reaching farmers at scale**.

1

Recent experience bundling insurance with other products, and sharing costs with stakeholders such as the government or agri-value chain players, is slowly making insurance more affordable for farmers facing challenges with high premiums. These **efforts to strategically bundle or align insurance with essential products and services should continue to be supported**.

2

New and unconventional distribution partnerships are needed, such as with shared agent networks, PAYGo companies, and other aggregators, who offer both a channel for reaching farmers as well as other products that could be bundled with insurance.

3

With the recent surge in fintech infrastructure and product penetration, there's also an **opportunity to explore various payment methods and innovative contracting technologies** beyond traditional mobile money integration.



Boosting adoption: scalable, affordable channels

4

Insurance coverage is still limited, often just enough to cover the cost of inputs or repay a loan. The next level of product innovations should also **focus on approaches that can increase the value and level of coverage**

5

It's essential to **continue innovating to incorporate formal insurance into informal networks and existing structures**, fostering practices like embedding insurance savings within regular savings group activities.

6

Additionally, **exploring alternative sales approaches**, such as allowing family members with greater liquidity to purchase insurance for their households post-leaving, similar to remittance practices, is crucial for evolving insurance accessibility and effectiveness.



Promising tech advancements can impact uptake

Technology-driven innovations have fallen short of broad expectations, remaining as aspirational possibilities beyond the capabilities of many developing countries. However, multiple opportunities exist that could be transformational in the coming years.



Leverage advanced remote sensing: The majority of index-based programs continue to rely on ground data sourced from crop-cutting experiments or local weather stations. Opportunities exist to further integrate advanced remote sensing technologies and crop modeling, reducing reliance on traditional ground data sources.

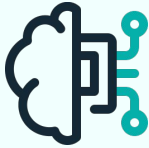


Maximizing smartphone accessibility: Despite the ubiquity of smartphones and the potential of digital technologies, numerous insurance programs lack even the basic capability to digitize data for processing contracts and claims. Enhancing basic digitization capabilities for processing contracts and claims could significantly improve efficiency and accessibility.

Promising tech advancements can impact uptake



Internet of Things (IoT) integrations: IoT devices can monitor environmental conditions, soil health, and crop status in real-time. Integrating IoT this data into insurance models can provide more accurate assessments of risks and facilitate timely interventions.



Machine learning and AI: Machine learning algorithms and artificial intelligence are being used to refine risk models, enhance predictive analytics, and support accurate event modeling. This can contribute to continuously improving the effectiveness of insurance products by learning from evolving data sets.



Accelerate digital adoption: At present, approximately half of index-based insurance providers still depend on non-digital channels for service delivery. There is an opportunity to leverage the proliferation of user-friendly, cost-effective software into existing systems, potentially transforming and streamlining various aspects of insurance operations, from data processing to program administration.

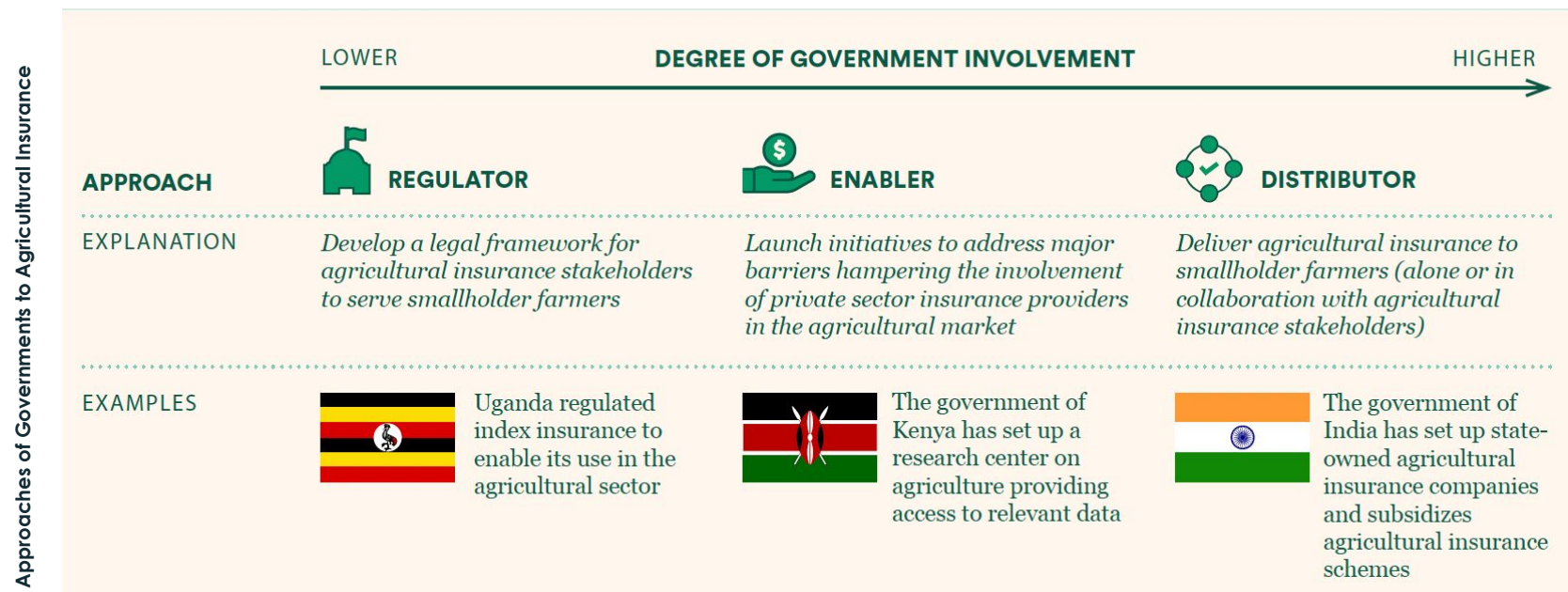
Promising tech advancements can impact uptake



Climate information services: Meteorological services and climate information providers could deliver real-time weather advisories and forecasts directly to farmers through digital platforms, integrated with insurance offerings.

Governments are adopting more holistic approaches to supporting smallholder farmers

There is a need for governments to be much more involved in agri insurance markets in order to achieve long-term scale through a range of efforts. Their involvement is vital for establishing favorable regulatory environments, fostering innovation, and facilitating strategic connections across risk management levels.



Continued donor and government commitment will be critical in the coming years





Success hinges on committed governments and donors, smart subsidy design and deployment, and active public-private engagement

-  **Enabling environment:** Government involvement is vital for establishing favorable regulatory environments, fostering innovation, and facilitating strategic connections across risk management levels.
-  **Financial support for innovation:** Donors and governments can provide financial support to encourage innovation in agriculture insurance products and business models, fostering a dynamic ecosystem that meets the evolving needs of smallholders.
-  **Smart subsidy models:** Donors and governments can play a pivotal role in piloting and evaluating new smart subsidy models, providing evidence of their effectiveness in increasing insurance uptake among smallholders and mitigating risk in the agriculture sector.
-  **Regulatory capacity building and public good research:** Supporting capacity building initiatives, including training programs and knowledge sharing, enables the development of a skilled workforce capable of navigating the complexities of the agriculture insurance sector.
-  **More evidence is required** on the impact(s) of insurance, both in terms of outcomes and impacts on smallholder farmers, as well as to demonstrate the business case for insurance providers, intermediaries, and other entities involved in agri-insurance models.



Unlocking inclusivity in agriculture insurance

Shocks disproportionately affect the poor and women, leading to the liquidation of women's assets during disasters. Innovative solutions are crucial to customize insurance products and strategies specifically for smallholder women in agriculture, enhancing their participation and resilience within the insurance framework.

-  **Innovative product design:** Investment is needed in tailored insurance products that address the specific needs and preferences of women and underserved communities, ensuring coverage aligns with their agricultural practices and household dynamics. For example: The MRR Innovation Lab's work with Takaful Insurance in northern Kenya demonstrates that by reformulating livestock insurance contracts into 'family units', as opposed to units of livestock, which can [make such insurance gender-inclusive and can grow demand among women.](#)
-  **Strategic marketing techniques:** Develop targeted marketing strategies that raise awareness and accessibility, emphasizing the benefits of insurance in language and channels that resonate with women and marginalized populations. For example, framing insurance benefits around household expenses, rather than livestock, [increases women's insurance demand.](#)
-  **Partnerships for outreach:** New partnerships are required with local organizations, NGOs, and community leaders to enhance outreach efforts, leveraging existing networks to communicate the value and advantages of agriculture insurance to women and underserved groups.
-  **Capacity building and education:** Invest in initiatives that provide financial literacy, training, and capacity-building programs tailored to women and underserved communities, fostering understanding and confidence in utilizing agricultural insurance for improved resilience.



Key Takeaways

2. Unmitigated and uninsured climate risks **pose a serious threat to financial institutions and to the goals of global financial inclusion.**

4. Agriculture insurance is undergoing a shift in perspective, where it's viewed **not as a standalone solution but as a tool integrated (and often bundled) with climate adaptation and resilience** strategies at national and international levels.

1. Climate change intensifies extreme weather and natural hazards, posing a significant threat to small-scale agriculture. **Traditional risk management strategies of farmers prove insufficient against catastrophic events.**

3. Insurance offers dual benefits: **safeguarding** farmers during shocks **and stimulating up to a 30% increase in normal farm investments.**

5. Currently, insurance **demand is primarily led by institutional stakeholders** in the agricultural value chain, particularly aggregators, rather than individual farmers.



Key Takeaways

7. Recent innovation funding improved products, but the **focus must now shift to supporting low-cost channels for widespread farmer outreach** through unique cost-sharing models and unconventional partnerships.

9. Without dedicated **attention to gender and social equity**, index insurance interventions may inadvertently reinforce inequalities and hinder their effectiveness as inclusive disaster risk management tools.

6. Despite its potential to enhance resilience and productivity, agricultural insurance remains highly inaccessible. **Globally, 4 out of 5 farmers lack insurance**, with sub-Saharan Africa experiencing less than 3% coverage.

8. Success in agricultural insurance **requires engaged governments, strategic subsidy deployment, ongoing innovation, and continued donor support** to address regulatory capacity building and evidence generation for the evolving ecosystem.





The Climate Landscape Series Decks

- **Conceptual Frameworks for Climate Action:** Climate Justice, Digital Finance and Climate Finance Flows
- **Climate Finance Taxonomies:** Frameworks for the current landscape
- **Climate Change and Gender**
- **Climate Innovation:** Climate Smart Essential Services & The Opportunity for Philanthropy
- **Climate Resilience Insurance:** Learnings, Gaps, Opportunities
- **Inclusive Climate Finance:** G2P Programs
- **Building an Inclusive Voluntary Carbon Market for Resilient Communities**
- **Climate Finance:** Data and Data Platforms

Thank you!

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