



International Actuarial Association
Association Actuarielle Internationale



Parametric Insurance

Innovating Risk Protection for a
Changing Climate

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Welcome to the Webinar

We will begin shortly

A few housekeeping items before we begin:

1. Questions & Comments – Verbal capabilities have been turned off however questions or comments can be submitted by clicking on the Q&A icon at the bottom of your screen. All questions will be answered during the Q&A session at the end of the presentations.
2. Recording and presentation – A YouTube recording along with the presentation will be made available on the IAA website within the next day or so. For these and other past events, visit the IAA website at www.actuaries.org and click on the drop-down title **News&Events/Past Events Library**.



Welcome and thank you for joining today's webinar.

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Climate Risk

Climate Risk Across the Globe: Facts for Smallholder Farmers



Who's at Risk?

3.6 billion people live in climate-vulnerable zones.

80% of sub-Saharan Africa's farmland is worked by smallholders relying on rain-fed agriculture.

1.5 billion people affected by droughts (2007–2017).



Devastating Yield & Income Losses

Global cereal yields down 9–12%

Gendered Impacts - Female lose: 8% more income in heatwaves (\$37B/yr globally)
3% more income in floods (\$16B/yr).

\$165–210B/year lost to climate disasters.

2°C warming by 2050 = 189 million more hungry.



Discussion Overview

- As climate risks intensify, parametric insurance offers pre-agreed payouts based on triggers rather than measured losses.
- This ensures:
 - Rapid claim settlements
 - Greater transparency
 - Suitability for underserved markets
- Focus: Fundamentals, design, data quality, and real-world implications for policymakers, regulators, and providers.

Parametric Insurance

Introduction text



What is Parametric Insurance?

Provides payouts based on occurrence of a triggering event (e.g., drought, flood).

Differs from traditional indemnity-based models:

- No loss assessment required
- Faster payouts
- Transparent and predictable



Key Design Elements

1. Triggers: Climate indices, rainfall thresholds, seismic activity.

2. Thresholds: Defined levels that activate payouts.

3. Payout Structures: Pre-agreed amounts linked to event severity.

4. Pricing Mechanisms: Based on probability and exposure.

5. Data Quality: Critical for accuracy and trust.



Opportunities & Limitations

Opportunities:

- Agriculture: Protect farmers from climate shocks
- Health: Cover epidemic triggers
- Disaster Risk Financing: Enable rapid government response

• Limitations:

- Basis risk
- Data availability and quality
- Regulatory and affordability challenges



Why It Matters

- Strengthens resilience for vulnerable populations.
- Unlocks innovative financing for climate adaptation.
- Bridges the protection gap in underserved markets.



Key work-streams for parametric insurance

- A) **Actuarial valuation** and assessment of premium rates;
- B) **Microinsurance product design, pricing** and policy wording development;
- C) **Capacity building of insurers' staff**: Specialist actuarial trainings on pricing, product design, reserving for standard products as well as microinsurance products;
- D) **Product development and Pricing** of standard and niche products;
- E) **Training on regulatory best practices**, based on global standards;
- F) **Support on regulatory submission** process, including actuarial report for regulatory approvals;
- G) **Support on reinsurance placement**, including actuarial discussions and negotiations with international reinsurance companies;
- H) **Marketing material design** and developing training manuals for head-office and field staff;
- I) **Training of operational** and field staff on new and existing insurance products;
- J) **Supporting insurers with marketing and explaining products** to potential clients and conducting trainings for distribution channels/aggregators and end-beneficiaries;
- K) **Advice on operational modalities** e.g. Using Digital Financial Services for delivering products;
- L) **Developing publicity materials** e.g. Videos, radio-adverts, maintaining Facebook page etc.

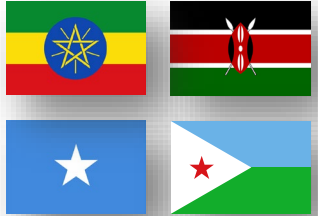
RELATIVELY SUCCESSFUL CASE STUDIES

COUNTRY	PRODUCT/SCHEME	EVIDENCE OF SUCCESS
1. Bangladesh	Green Delta Insurance Company	<ul style="list-style-type: none"> - Operational since 2015; - Variety of products launched- WII, AYII, Indemnity-based, Hybrid etc. - Premium rates of 2%-5% without premium subsidies; - Insuring approximately 1 million farmers annually; - Insurer's agriculture team of approx. 6 people, including specialists
2. Kenya, Malawi, Rwanda, Tanzania, Zambia	MFIs financing smallholder farming	<ul style="list-style-type: none"> - Cumulative premium of approximately USD 4 million in last 5 years (\$800K annually); - Resulting in better financial access to low-interest seasonal crop loans for approx. 2 million farmers annually; - Average claims ratio of approx. 63% over last 5 years; - Continuity e.g. renewed for last 10 seasons in Rwanda
3. Kenya	Flood index insurance	<ul style="list-style-type: none"> - Innovative index of combining satellite and river gauge data; - Example of insurance being used as disaster relief by NGO e.g. Oxfam; - Resulted in significant payouts in line with actual experience in 23/24 season
4. Malawi	Drought index insurance linked to Social-Cash Transfer program	<ul style="list-style-type: none"> - Example of index insurance being linked to social cash transfers to benefit most vulnerable communities; - Premium volumes of approx. USD 5 million annually, impacting 116K HH currently; - Responsive to major drought of 23/24 season
5. Zambia	Index insurance linked to Farming Input Subsidies	<ul style="list-style-type: none"> - Long running scheme of integrating index insurance with farm-input subsidies; - Reaching approx. 1 million smallholder farmers since 2017, over last 7 seasons; - Premium volumes of approx. USD 8 million annually and involves about 5 insurers currently
6. Zambia	Bundled index insurance with MFIs and contract farming operations	<ul style="list-style-type: none"> - Enables MFI to provide seasonal crop loans to smallholder farmers. Enabled some MFIs to rapidly expand; - Enabled growth in contract farming schemes, reduced side-selling, better relationship with farmers; - Continuity of private sector aggregators over last 12 seasons

Project DRIVE – De-Risking, Inclusion & Value Chain Enhancement for pastoralist communities in the Horn of Africa – A USD 360.5 million regional project (including financing & GRIF), implemented in Kenya, Ethiopia, Somalia & Djibouti



Current DRIVE Countries:



Project Objective

To enhance pastoralists' access to **financial services** for drought risk mitigation, include them in the **value chains**, and facilitate the **livestock trade** in the Horn of Africa

Component Structure

1



Package of financial services for climate resilience

Support the provision of an integrated package of financial services to build climate resilience through parametric drought insurance, savings incentives, digital accounts & platform, financial literacy.

2



Livestock Value Chains and Trade Facilitation

Improve inclusion of pastoralists in the livestock value chain and facilitate trade in the Horn of Africa.



Global Shield against Climate Risks

implemented by:



Implemented by: national agencies



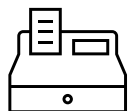
DRIVE project in Horn of Africa

IMPACT TO DATE FOR COMPONENT I



+3 MILLION

pastoralists & dependents
(56% women) received access to
financial services



+412K

Digital Accounts Opened
85% of the pastoralist have
opened a digital bank
account



\$51.7M

Total Premium collected
(9M pastoralists/ 42.7M
Gvts)
illustrate market demand
& paths to sustainability



\$254M

Private capital employed
(value derisked /sum
insured) highlight
confidence &
sustainability



+30

Private sector partners for
innovation & efficiency
in product distribution



Q&A Session

Should you have any questions or comments,
please add them to the Q&A icon at the bottom of your screen.



Thank you for joining today's webinar!

Should you have any further questions or comments,
please send them directly to Technical Activities of the IAA
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