Climate Risk
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Sustainable insurance opportunities and trends

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Climate Change

Effects of Climate Change

Hotter temperatures
As greenhouse gas concentrations rise, so does the global surface temperature. India has experienced stark temperature increases, with **2023** being the second warmest year since **1901**.

More severe storms
Acc. to IMD, there has been a **52%** increase in the number of cyclones in the Arabian Sea, while 'very severe cyclones' have increased by **150%.**

Increased Drought
Global warming exacerbates water shortages and is leading to an increased risk of agricultural droughts.

The Need for Index Insurance

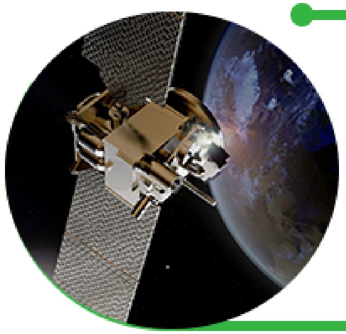
2024 was one of the hottest summer in last 50 years for many states

Climate change is predicted to cause more than $7 billion in agricultural losses by 2030.

In December 2023, many parts of Chennai received record-breaking rains for two days leaving hundreds stranded.

Innovative solutions with parametric Insurance are essential to mitigate the impacts of climate change, providing financial protection to vulnerable sectors.

Parametric Insurance



A type of coverage that provides predefined payouts based on specific triggers or events rather than on assessed losses. These triggers are usually based on data such as weather indices or other quantifiable metrics, often tracked using satellite data to monitor weather parameters.

Advantages of Parametric Insurance

Accurate Risk Assessment

Satellite technology enables precise measurement of multiple weather parameters, which helps in better product design that can over actual losses .

Affordability

Index-based insurance is usually more affordable than conventional. By using predefined indices, insurers can provide coverage to more customers at lower rates.

Customization and Flexibility

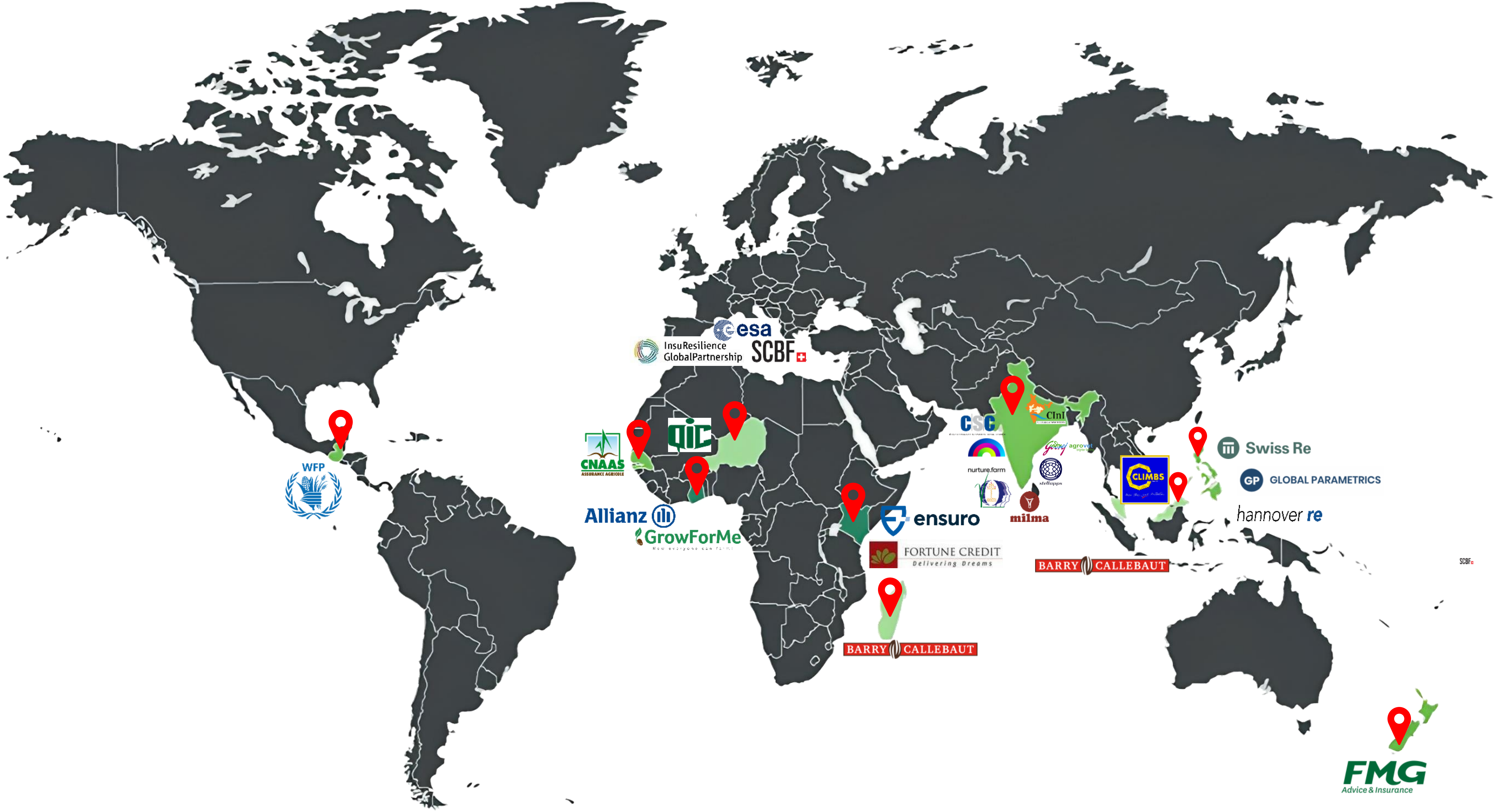
Satellite-based index insurance can be customized to regional climatic variations and specific sector requirements, offering flexible coverage levels and premium rates to suit different needs.

Prompt Payouts

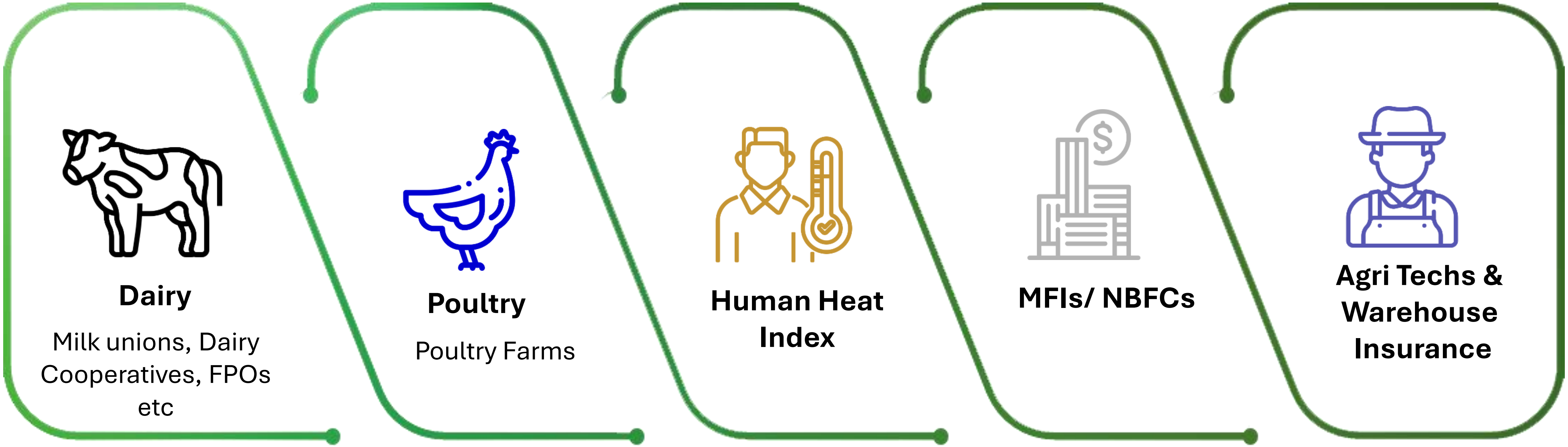
Claims submitted under conventional insurance coverage may require onsite checks and evaluations, adding delays, while index-based claim processing may be almost immediate.

IBISA is an global **Insurtech** focused on providing **end-to-end solutions** to protect businesses and communities against **Climate Change**

Area of Operation



Various sectors we have served in India



Excess rainfall/ flood

It can affect the economy by causing physical damage, disrupting operations, and leading to significant economic losses from repair costs, supply chain interruptions, and reduced revenue.

Drought product / Deficit rainfall

It can affect farmers by jeopardizing crop yields during the critical germination phase, leading to reduced agricultural productivity and income. The economic repercussions also extend beyond the agricultural sector, impacting local economies and livelihoods dependent on farming activities.

Cyclone cover: Excess rainfall + wind speed

The impact of typhoons can be substantial, with ripple effects felt across various sectors of the economy. It can exert significant financial strain on affected regions, stretching resources to cover the costs of emergency response, infrastructure repair, etc.

Heat Index Insurance

Key Features

- Heat Index Thresholds
- Consecutive Days Metric
- Loss Assessment
- Risk Assessment Tools
- Technical Support

Heat Index Insurance Product for Cattle Production Loss

Cattle, being sensitive to high temperatures, suffer from reduced productivity and even mortality during periods of extreme heat.

Heat Index Insurance Product for Humans against excessive heat

Heat Index Insurance for Poultry

Heat stress in poultry results in various physiological and behavioural changes, including increased mortality rates, disease outbreaks, and reduced egg quality.

Overview of the Parametric Insurance for Agriculture

Triggering event occurs

Weather data reanalysis **captures the anomaly**

Automatic loss assessment is performed

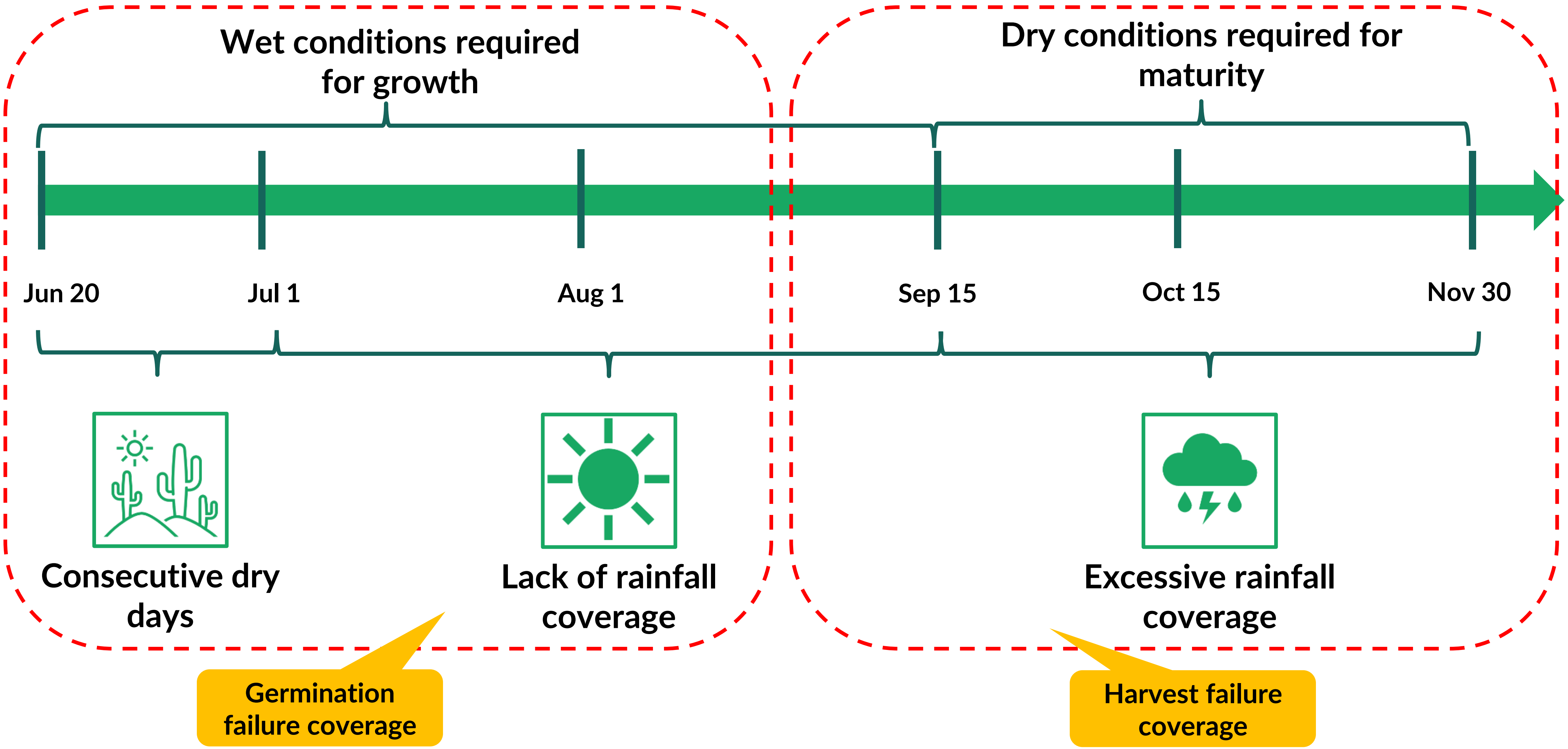
Claims are paid out

Crops covered: **All**

Possible Risks covered: **Unseasonal/heavy rainfall, Consecutive dry days, etc.**

Premium per Farmer: **Affordable (5-10%)**

Example of coverage as per crop cycle



Loan Portfolio with Parametric Insurance

MFIs serve clients who often lack collateral and are among the most susceptible to climate shocks, they face elevated default risks when climate events such as floods, droughts, and cyclones disrupt borrowers' livelihoods. In this context, parametric insurance emerges as a crucial tool for MFIs/NBFCs to mitigate these risks effectively.

Climate Data Analysis for Informed Decision-Making

! MFIs often lack robust climate data analysis tools, leading to suboptimal loan portfolio expansion decisions.

IBISA's climate data analysis solution empowers MFIs to make informed, data-driven decisions by using historical climate data and predictive modeling to identify low-risk geographical areas.

Data-Driven Loan Pricing

Sector Exposure Optimization

Geographical expansion

Affordable Insurance Cover

! Traditional insurance is often too expensive for MFIs, limiting their ability to protect borrowers, especially women, who are the majority of MFI clients.

IBISA offers affordable and tailored index-based insurance products exclusively designed for MFIs and their women borrower groups.

Low Premiums

Flexibility

EMI Protection Coverage

Extended Coverage

Parametric Insurance for Warehouses

Parametric Insurance for warehouses helps mitigate risk by providing protection against events like excess rainfall leading to non-utilization of warehouses or damage to stored goods.

Arya Collateral– Case Study

Coverage: 3 days of excessive rainfall

Trigger: Rainfall exceeding predefined threshold

700+ warehouses insured

Benefits:

- Risk Mitigation
- Financial Stability
- Immediate Payout

Impact:

Enhanced Warehouse Resilience:

- Continuity of operations
- Minimizes financial disruptions

Client Confidence:

- Builds trust through robust risk management

New Avenues

Delivery Chain

Food delivery companies are crucial for urban food distribution, but excessive rainfall can cause delays, cancellations, and financial losses.

Construction Segment

The construction industry is vulnerable to weather delays, causing financial losses from missed deadlines, higher labor costs, and penalties.

Shopping Mall

Shopping Malls footfall can be significantly impacted by adverse weather conditions, affecting retailers' revenue and overall mall profitability

Renewable Energy

Variability in weather patterns can significantly impact energy production, leading to opportunity losses and financial instability.

Parametric Insurance - Wind Energy

Challenges in Wind Energy Output:

- **Intermittency** - Wind power generation can be highly variable, making it challenging to predict and plan for energy output.
- **Weather Dependence -** Adverse weather conditions, such as low wind speeds or extreme weather events, can significantly reduce energy output.
- **Revenue Fluctuations -** Unpredictable wind patterns can lead to uneven revenue streams for wind energy providers.

How Parametric Insurance Works for Wind Energy

Setting Parameters

Choose a reliable index correlating with wind energy output – WIND FARM ENERGY INDEX (WFEI) – with this an annual energy production can be estimated (AEP)

Data Collection and Verification

HEI: Hourly Energy Index for each turbine calculated by converting the Wind Speed at the Insured Location (in m/s) for the hub height to energy (in MWh)

Policy Design

Define coverage terms, including insurance period and payout amounts. Calculate premiums based on historical data and risk assessment. This creates a tailored insurance solution.

Trigger and Payout

Claims to trigger if the actual AEP is less than threshold MWh/year

Parametric Insurance - State level Disaster Management

- **Natural Disaster :**
  - Lack of sufficient protection against the financial impact of natural disasters.
  - One way to build protection is to transfer the financial risk of natural catastrophes with Insurance
- **Private Public Partnership**
  - The public sector has the breadth of distribution and ability to create a conducive operating environment, whilst the private sector brings products, technology and expertise.
- **Protection Gap in India**
  - Chennai floods (2015,2023), Kerala Floods (2018,2019), Cyclone Amphan (2020)

Nagaland – First State to Implement Statewide cover

Excess Rainfall Cover

The insurance solution provides NSDMA with parametric cover for excess rainfall events that can lead to severe flooding

Data Collection and Verification

Satellite observations and rain gauges are used to assess rain. Pay outs are allocated in proportion to the amount of recorded rainfall, which mirrors the anticipated levels of loss.

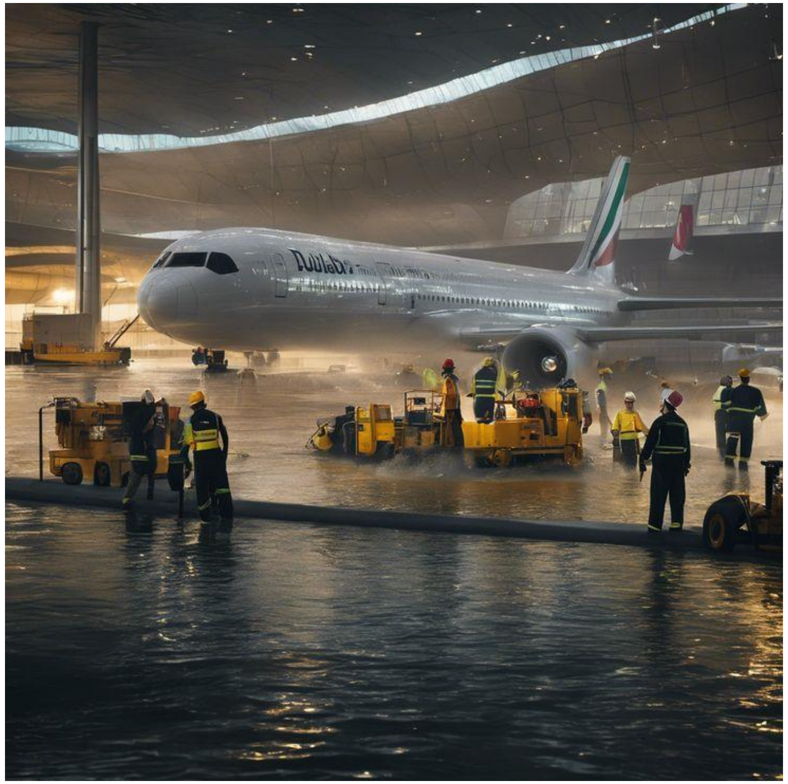
Policy Design

Implemented jointly by Govt of Nagaland, Swiss Re, Tata AIG, ISF

Take Away

Disaster is no longer "IF" but "WHEN"
Investment in risk transfer is a prudent investment, cardinal to sustainable development

Parametric Insurance for Aviation



Challenges Faced by Airlines Due to Excess Rainfall:

Flight Redirection - Increased operational costs due to rerouting flights to alternative destinations.

Additional Fuel Expenses - Extra fuel costs incurred from aircraft circling in the air while waiting for clearance to land.

Diversion Losses- Expenses and logistical challenges from landing at alternative airports.

Flight Cancellations – Loss of revenue and increased operational costs from cancelled flights.

Passenger Inconvenience cost– Costs related to compensating passengers for delays, including accommodation and meals.

Other operational losses - Increased maintenance and staffing costs to manage disruptions caused by excessive rainfall.

How Parametric Insurance Works for Aviation

Coverage Specifics

Applied to specific airports (e.g., Bangalore airport).
Rainfall threshold measured at the airport's lat-long coordinates.

Trigger Event

Parametric insurance triggers upon exceeding a predefined rainfall threshold within a specific period, necessitating landing delays, flight diversions or cancellations.

Quick and Transparent Payout

The predetermined payout ensures a prompt financial response without the requirement to assess actual damages.

Benefits

Quick payout and predictable cash flows.
Reduced admin burden
enhanced operational resilience for airlines.

With a solid track record launching innovative products in India

Heat Index Insurance for Dairy

stellapps · milma · DeHaat® Seeds to Market · Godrej agrovet brighter farming · PAHAL A NEW BEGINNING

Business Interruption

arya

Sachet rain index insurance

nurture.farm

Climate insurance for FPOs/Federations

CInI An Initiative of TATA TRUSTS · BASF We create chemistry

Our Partners

Leading (re)Insurers across the world trust our solutions

Commercial Insurers

ICICI Lombard GENERAL INSURANCE · HDFC ERGO GENERAL INSURANCE · aic कृषक यत्न रक्षणम् · FUTURE GENERALI TOTAL INSURANCE SOLUTIONS · CNAAS ASSURANCE AGRICOLE

Reinsurers

GP GLOBAL PARAMETRICS · Allianz · Swiss Re

Mutuals

FMG Advice & Insurance · CLIMBS

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Dairy Heat Index Pilot

Summer 2023

Primary partners: MILMA, Stellapps, Godrej Agrovet, multiple FPO

States Covered: Kerala, Karnataka, TN, AP, UP, Rajasthan, Maharashtra

Total Animals Insured: **23,000 +**

Total claims: **Rs 31,00,000/- +**

2024 Progress

Total livestock insured : **4,20,000+**

States Covered: Kerala, Karnataka, AP, UP, Rajasthan, Maharashtra, Gujarat

No of farmers that may get benefitted: **20,000+**

Total claims to be settled : **Rs 3,00,00,000/- +**

Thank You

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