



# CROP PARAMETRIC INSURANCE SOLUTION

AI-Powered Technology to Protect Crop Yield in Real Time

# INTRODUCTION

Agriculture is prone to disasters and risks that are beyond our control and so it becomes necessary to take precautionary measures to control damage faced by farmers. A crop insurance plan assists in the stabilization of crop production and reduces the harmful impact it has on the lives of the farmers. Considering the current scenario of uncertainties in the agricultural industry, crop insurance has become a necessity for agricultural-related issues.



## Effect of Natural Disasters on Agriculture & Farmers

- Loss of perennial crops such as garlic, banana, and rhubarb
- Inability to use the land until the water recedes in the case of floods
- Permanent increase in salinity making the land unsuitable for production
- Decreased production leads to lower farmers' income
- Increase in unemployment threatening the rural livelihood

Each year, there are new technologies invented in the form of machinery that help farmers to get more produce from their investments. Some of these technological advances are high-priced which makes farmers a bit hesitant & makes them take a step back from investing. They consider these investments to be risky. This is where insurance packages help the farmers to try new technologies. Farmers who take crop insurance protect their crops from unforeseen setbacks. Considering that the majority of the farmers' livelihood is dependent on the quality and quantity of the yield they produce, crop insurance aids in fighting poverty.

**Around 0.34 million hectares crop area has been damaged due to natural calamities, mostly floods and landslides in just the first four months of 2022-23, according to data shared in Parliament July 26, 2022.**

**Source: Down to Earth**

**Hydro-meteorological calamities, including heavy rainfall and floods, have damaged 33.9 million hectares of India's cropped area between 2015-16 and 2021-22.**

**Source: The Ministry of Agriculture**



# WHAT IS CROP PARAMETRIC INSURANCE?

Crop Parametric insurance is a type of insurance that offers farmers insurance plan based on predefined parameters and triggers, rather than actual losses. These parameters and triggers are typically based on objective, measurable data such as weather patterns, crop yields, or other environmental factors.

This type of insurance plan can be beneficial for farmers because it provides a more predictable and faster payout, as well as reduced administrative costs for both farmers and insurers. It also allows for better risk management, as farmers can plan for potential weather-related losses in advance.

## NEC's AI-Enabled Crop Parametric Insurance Solution

By leveraging local data and information that is familiar to the farmer, NEC's AI-enabled Crop Parametric Insurance Solution offers weather coverage triggered by real-world climate events to deliver a transparent and scalable insurance plan to the farmers. The solution will also provide farmers and insurers with real-time updates on the soil moisture, weather, yield, and insurance payout situation.

The solution has the potential to provide farmers with additional peace of mind as they do not need to take loans from private lenders at higher interest rates to cover potential crop damage & increases farmers' resilience to climate change by enabling transparent, timely, and fair insurance plan payouts in extreme weather events.

This, in turn, can help encourage farmers to adopt modern and innovative agriculture practices that further increase their income. In the end, the crop parametric insurance plan becomes a tool that can not only help protect farmers from the consequences of a changing climate but also drive economic growth and innovation in our food systems.

Crop parametric insurance solutions can also help insurers overcome some of the commercial barriers when entering new and developing markets. It is commercially viable for an insurer to offer crop cover to largescale industrial farms where premiums are large enough to cover underwriting and claims management costs.







## NEC's AI-Enabled Crop Parametric Insurance Solution - Best Suited For



### Insurance Companies

AI-enabled crop parametric insurance solutions can help insurance companies reduce administrative costs and better manage their risks. This can improve the efficiency of the insurance process and increase the industry's profitability.



### Governments

Governments can help stabilise agricultural production and reduce the impact of weather-related losses on rural livelihoods by providing farmers with more reliable insurance. This can help to promote rural food security and economic growth.



### Financial Institutions

AI-enabled crop parametric insurance solutions can provide financial institutions that offer insurance products with a new source of revenue. This can aid in portfolio diversification and risk reduction.



# BENEFITS OF PARAMETRIC INSURANCE FOR FARMERS AND INSURERS

Parametric insurance offers several benefits for both farmers and insurers.



## Faster payouts

With parametric insurance, payouts are triggered by predefined parameters and do not require an assessment of actual losses, which means that farmers can receive compensation more quickly.



## Reduced Administrative Costs

The process of enrolling in and making claims for parametric insurance is typically simpler and less time-consuming than traditional crop insurance, which can save on administrative costs for both farmers and insurers.



## Increased Accessibility

Parametric insurance can be more affordable for farmers, as it typically requires lower premiums than traditional crop insurance. Additionally, because it is not dependent on the farmer's financial history or credit score, it can be more accessible to those who may not qualify for traditional crop insurance.



## Better Risk Management

By providing a more predictable and faster payout process, parametric insurance can help farmers plan for and mitigate potential weather-related losses.



## Helps Insurers Enter New Market Segments

Parametric insurance can be more profitable for insurers as it eliminates the need for complex assessments of actual losses and reduces claims processing costs. Additionally, it allows insurers to enter new market segments, such as developing countries where traditional crop insurance is not yet available.

# HOW DOES THE CROP PARAMETRIC INSURANCE SOLUTION WORK?



## Enrollment

Farmers can enroll in crop parametric insurance by purchasing a policy from a private insurance company. During the enrollment process, they will need to provide information such as the type of crop, the location of their farm, and the parameters and triggers of the policy.



## Data Collection and Monitoring

Insurance companies collect and monitor data related to the parameters and triggers of the policy, such as weather patterns, crop yields, and other environmental factors. This data is used to determine if a payout is triggered.



## Claims Process

If a payout is triggered, the farmer can claim compensation. This process is typically simpler and less time-consuming than traditional crop insurance, as it does not require an assessment of actual losses.



## Payment

Once the claim is approved, the farmer will receive the payout as determined by the policy. This payout is typically based on a pre-agreed amount and is not affected by the actual losses suffered by the farmer.



## Ongoing Monitoring

Insurance companies need to continuously monitor the data and adjust the policy, to ensure that the parametric insurance is still relevant and accurate.





# PARAMETERS AND TRIGGERS USED TO DETERMINE PAYOUTS

In crop parametric insurance, payouts are determined by predefined parameters and triggers, which are typically based on objective, measurable data such as weather patterns, crop yields, or other environmental factors. Examples of such parameters and triggers include:



## Rainfall

A policy may pay out if a certain amount of rainfall is not reached during a specific period, indicating a potential drought.



## Temperature

A policy may pay out if temperatures reach a certain level below freezing, indicating potential freeze damage.



## Wind Speed

A policy may pay out if wind speeds reach a certain level, indicating potential wind damage.



## Humidity

A policy may pay out if humidity levels reach a certain level, indicating a potential disease outbreak.



## Yield

A policy may pay out if the crop yield falls below a certain level, indicating a potential crop failure.

These parameters and triggers may differ depending on the crop, region, and insurance provider. Before enrolling, farmers should understand the parameters and triggers of their policy, as well as ensure that the data used to determine payouts is accurate and up to date.

# Why NEC?

NEC is a leader in the integration of IT and network technologies and brings more than 120 years of expertise in technological innovation to provide solutions for empowering people, businesses, and society. We possess deep expertise in the design and implementation of Crop Parametric Insurance Solutions for Farmers that leverage the most innovative AI and Big Data techniques to complement standard insurance and ensure speedy & hassle-free settlements during unforeseen circumstances.

Utilizing advanced AI, our Crop Parametric Insurance Solution provides a more predictable and faster payout, as well as reduced administrative costs for both farmers and insurers. It also allows for better risk management, as farmers can plan for potential weather-related losses in advance.

## Capabilities on Technology Stack

Core business experience combined with domain and technical expertise with evolving tools and technologies.

### Skilled Workforce

In-house business & domain experts



### Domain Expertise

Solving Complex Data Challenges  
Myriad of Successful Analytics Projects

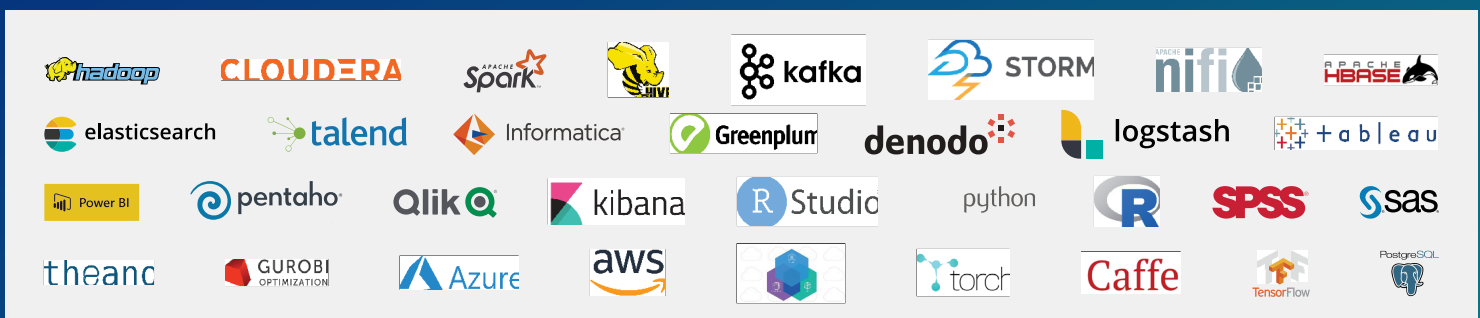
Dedicated Analytics Research Labs  
Work for Solutions for Societies

### Robust Partner Ecosystem



Strong Partnership & Alliance  
Across Data Platforms & Analytics Solutions

## Technology Partners



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