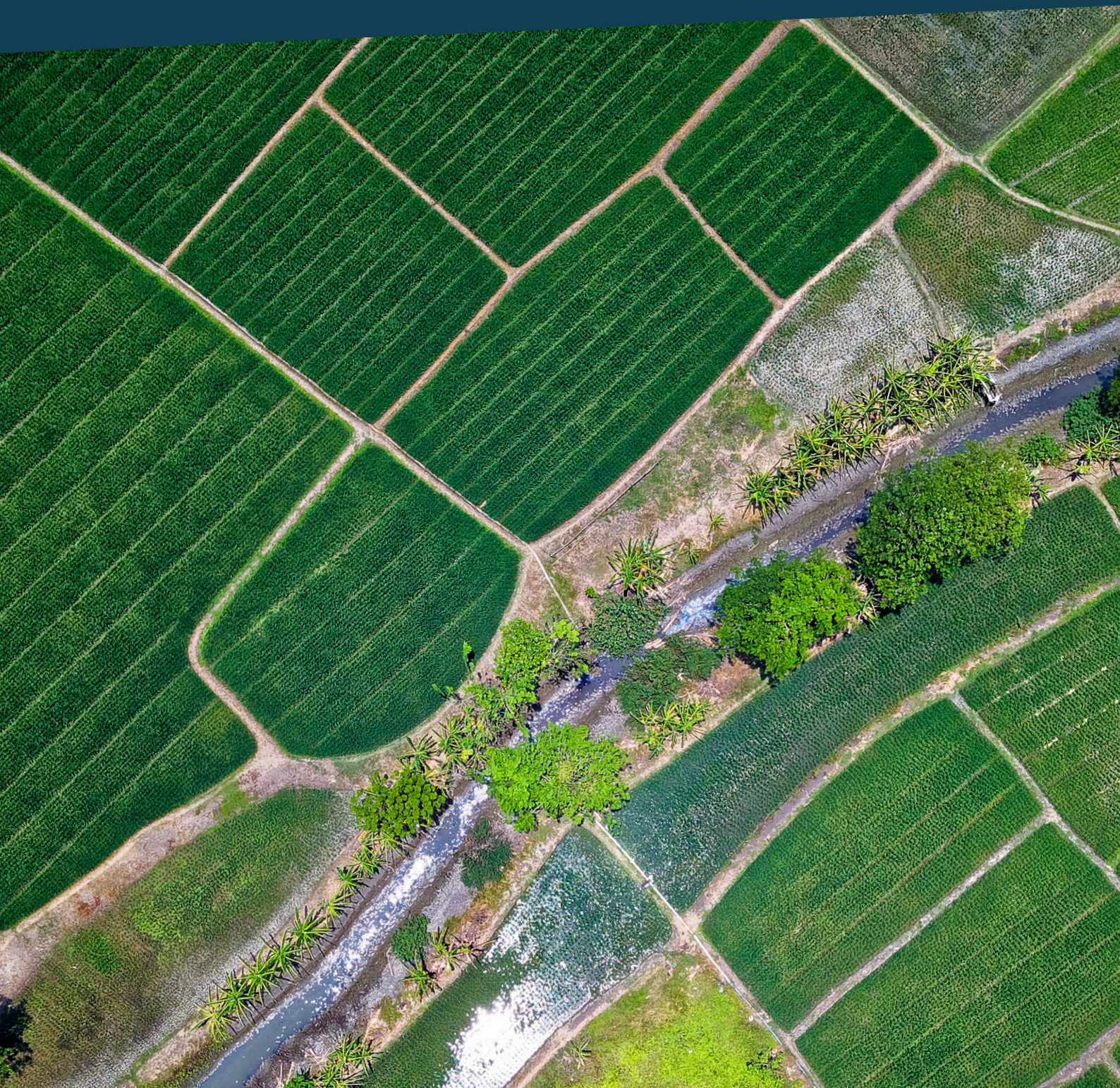




QUEENSLAND
FARMERS'
FEDERATION

Parametric Insurance: What is it, and why should I use it?



About Parametric Insurance



Unpredictable weather patterns

Australia's agricultural sector is highly susceptible to unpredictable weather patterns, including droughts, floods, extreme temperatures, storms, and bushfires. These events can have a severe impact on crops, livestock, and overall farm productivity. Insurance provides a financial safety net to help farmers recover from losses due to unpredictable weather patterns.

Indemnity insurance limitations

Traditionally farmers have been able to access indemnity insurance in the form of crop insurance linked to their 'Farm Pack' insurance specifically designed to cover a wide range of farm risks including your domestic home on the property. And while this insurance is still available, it's becoming increasingly expensive or unavailable for some risks and areas.

An additional limitation of indemnity insurance is the damage assessment and inclusions and exclusions included in a policy.



The parametric advantage

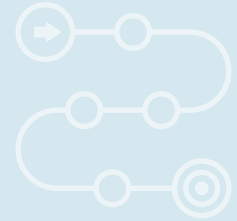
Parametric insurance provides a distinct advantage by offering coverage based on predefined parameters such as rainfall levels or temperature thresholds. This eliminates the need for lengthy claims processes and ensures a faster payout, crucial for farmers facing immediate financial strain due to weather-related losses.

The policyholder has the flexibility to choose specific indices relevant to their crops tailoring the coverage to their unique needs. This customisation ensures that the insurance aligns closely with the specific risks faced by the farmer, enhancing the overall effectiveness of the coverage.

About Parametric Insurance

A pragmatic solution

Parametric insurance provides transparent and objective triggers for payouts, removing ambiguity from the claims process. Traditional insurance policies often involve complex assessments of individual losses, leading to delays and disputes. Parametric insurance, on the other hand, relies on easily measurable indices, reducing the likelihood of disputes and streamlining the entire claims procedure.



A transparent claims process

Parametric insurance can complement existing risk management strategies by providing an additional layer of financial protection. A business may purchase their 'Farm Pack' annually and then structure additional parametric products for specific risk periods throughout the year. For example frost during flowering or high-risk yield periods. As climate change continues to impact weather patterns, the frequency and intensity of extreme events are expected to rise. Parametric insurance acts as a proactive risk mitigation tool, helping farmers safeguard their livelihoods against the increasing unpredictability of weather conditions.

A parametric index-based insurance policy offers Australian farmers a pragmatic and efficient solution to mitigate the financial risks associated with climate-related uncertainties. With its swift payouts, transparency, and customisation options, parametric insurance stands as a valuable tool for farmers looking to secure their agricultural operations in the face of an increasingly volatile climate.



FAQ's

How is Parametric Insurance different to Multi-Peril Crop Insurance (MPCI)?

Both Parametric and Multi-peril Crop Insurance are methods for insuring against crop losses. MPCI is a form of insurance that covers actual losses suffered due to a range of perils, including weather events, pests, diseases, and other covered risks. MPCI policies are generally less flexible as they are designed to provide broad coverage for a range of perils. The payout is based on the assessed value of the losses incurred.

The coverage of parametric insurance is designed to target specific risks or events defined by the chosen parameters (e.g., drought, excessive rainfall) and not to cover all possible perils faced by the business. Parametric insurance provides a more streamlined and customisable solution with faster payouts, while multi-peril crop insurance offers broader coverage for a range of risks but involves a more traditional and potentially slower claims process. The choice between the two depends on the specific needs and preferences of the farmers and the risks they face in their particular agricultural context.

How is a Weather Certificate different to an insurance product, parametric or traditional?

Although you are insuring the effects that weather has on your financial viability, they are not insurance products. Rather a Weather Certificate is classed as an over-the-counter derivative and thus regulated as such by the financial markets regulator.

There is no cooling off period for a Weather Certificate. Once you have paid the Premium Amount and the Weather Certificate is issued, you cannot later cancel or return the Weather Certificate and have the premium amount repaid.

I'm trying to mitigate my risk and parametric products seem like a good solution, but are there risks associated with parametric products?

The main challenge for parametric policies or gaining a Weather Certificate is basis risk. Basis risk is the potential difference between a policyholder's financial loss and the pay-out they receive from their insurer, is often cited as a drawback of parametric insurance. Since pay-outs depend on event parameters rather than the loss itself, customers may receive pay-outs that do not fully reimburse them for the loss suffered. However, basis risk also exists in traditional insurance policies, which feature deductibles, limits and exclusions that result in claim payments being less than the customer's loss. Basis risk can be mitigated but this relies on accurate and localised data that reflects how an event impacted a customer in their location. Advancements in technology have increased the availability of such data. Choice of data and basis risk are a significant factor holding back parametric and whilst innovation is improving the data available, there is still room for more and better data to be used in parametric insurance.

Additionally, parametric insurance is a relatively new product for some retailers and therefore they may not be experienced in structuring policies, increasing the risk of incurring basis risk within the policy unnecessarily. Using a retailer or broker that has experience with parametric products and their application in agricultural businesses will help offset this risk.

Glossary of Terms

Term	Definition
Attachment or Attachment Strike	The attachment is the point at which which the contract begins to pay i.e.mm of rain over a period. Similar to "Trigger" below.
Basis Risk	<p>Basis risk in index insurance arises when the index measurements do not match an individual insured's actual losses. There are two major sources of basis risk in index insurance. One source of basis risk stems from poorly designed products and the other from geographical elements. Product design basis risk is minimized through robust product design and backed by testing of contract parameters. Geographical basis risk is a factor of the distance between the index measurement location and the production field. The greater the distance between the measurement instrument and the field, the greater the basis risk. Some policy holders that experience loss may not receive compensation while others that experience no loss may receive payments.</p> <p>Example: Farmer at location X has a policy that has a trigger that begins to pay at 500mls of rain. His farm rain gauge measures 550 mls of rain over 3 days. However, the local BOM weather station which is located 10kms away only measures 490mls of rain over the same period. The policy trigger is based on the data recorded at the local BOM weather station and therefore the policy failed to be triggered. – What would be the suggested solution in this scenario?</p> <p>This basis risk is reduced when the area covered by the index is homogeneous both in terms of weather and in terms of farming techniques. Therefore, as the density of weather stations and satellite pixels is increased basis, risk is minimised.</p>
Capacity	The monetary amount of coverage available from the (re)insurance market or on a specific policy ("ABC Insurance Ltd., have offered \$10 million of capacity on the policy. We need an additional \$10 million capacity to meet the \$20 million policy limit").
Indemnification Zone	Usually expressed as a specified geographical area, within which losses or specified perils (as defined by the contract) will be considered valid for the onward calculation of claims.
Indemnity	To be compensated after a loss to such an extent that the policyholder is returned to the same position they were in immediately prior to the loss.
Index	The particular data set used to define the risk. ie rainfall, soil moisture or category and route of a cyclone.

Multi-Peril Crop Insurance (MPCI)	Multi-Peril Crop Insurance (MPCI) protects against crop yield and farm revenue losses by enabling farmers to insure a percentage of crop production or revenue.
Mutual	Usually refers to a mutual insurance company, where the company is owned by its policyholders. Any profits are usually retained within the company or returned to policyholders. Policyholders typically have a unifying characteristic: their profession, for example.
Parametric	A form of risk transfer where the value of the loss is driven by the triggering of pre-agreed criteria as opposed to post event loss adjustment. The actual value of the loss incurred loss may differ from the calculated loss on the policy.
Parametric Insurance AKA Single Peril Crop Insurance or Index Based Insurance	<p>The basic concept of parametric insurance is simple: Parametric insurance covers the probability of a predefined event happening (e.g. a tropical cyclone) and pays out pre-determined amounts, based on a series of event thresholds. These thresholds are agreed in advance and are based on independent data sources such as, in the case of a Tropical Cyclone, the Australian Bureau of Meteorology. Events may refer to an index-based trigger or an event within a defined area for instance a tropical cyclone. The policy might be structured to pay out 50%, 75% or 100% of a predefined limit for a Cat3, Cat4 or Cat5 cyclone occurring within a 50-kilometer radius around the client's point of interest.</p> <p>"A parametric insurance product is defined as an insurance contract where the payment is settled based on a pre-determined triggering parameter (e.g. excessive rainfall, drought, cyclone intensity, flood height, wind speed etc.).</p> <p>This differs from traditional (indemnity) insurance as parametric payouts are not based on actual losses, but on factors highly correlated with actual losses. In order to structure a parametric product, the triggering event or condition must be objective, observable, easily measurable, independently verifiable and consistent over time.</p> <p>Parametric insurance is ideal for relatively infrequent, but high-intensity losses associated with natural perils and weather-related risk where there is an insufficient history of losses captured as insurance-readable data.</p>
Rate on Line	A percentage rate calculated by dividing the premium by the policy limit, as opposed to the total sum (re)insured.
Residual risk	Is the level of the identified risk retained POST application of risk treatments and is closely tied to the risk profile and risk appetite of the organisation / industry

Risk appetite	Is the level and type of risk the business is willing to pursue, retain and / or tolerate as a normal part of operations
Risk identification	Is the process undertaken by the responsible / accountable people within the organisation / industry to identify current, emerging and over the horizon risks that currently or may impact on the organisation / industry
Risk profile	The set of risk types that relate to the entire business due to its strategic and operational environments
Risk tolerance	Is the level and type of risk the business deems acceptable to bear after risk treatment so it can achieve its objectives
Risk treatment	The treatment of an identified risk is directly related to the risk appetite, resources and overall capability of the organisation / industry. Treatment can be put into four categories – Risk retention, risk elimination, risk prevention or risk reduction
Tick	Parametric covers can be staged or staggered in their payments. i.e. pay out increases as the amount of rain increases. In this scenario the tick is the amount paid per mm of additional rain beyond the attachment or trigger point.
Trigger	The predetermined point at which the index for a parametric product pays out. i.e. a category 3 cyclone passing within 50kms of a farm.
Dual Trigger, Double Trigger or Cat-In-A-Box	A method of reducing basis risk is applying multiple triggers to a scenario. An insurer, for instance, can offer partial payouts for lower magnitude earthquakes and progressively increase the payouts for stronger earthquakes. Sometimes also referred to as Cat-in-a- Box. The 'Cat' must meet the minimum pre-agreed intensity threshold and go through the 'Box' to trigger the payout requires the Catastrophe to occur in a predefined area (first trigger) and to be of a certain magnitude (second trigger).
Underlying	An underlying policy is insurance that covers a particular risk first. Other insurance covering the same risk will only pay out once this insurance is exhausted. Its primary function, and the reason why another insurance cannot pay the same coverage at the same time, is to negate the possibility of a person gaining profit from insurance in violation of the principle that insurance should only help the insured recover from a loss.

Weather
Certificate

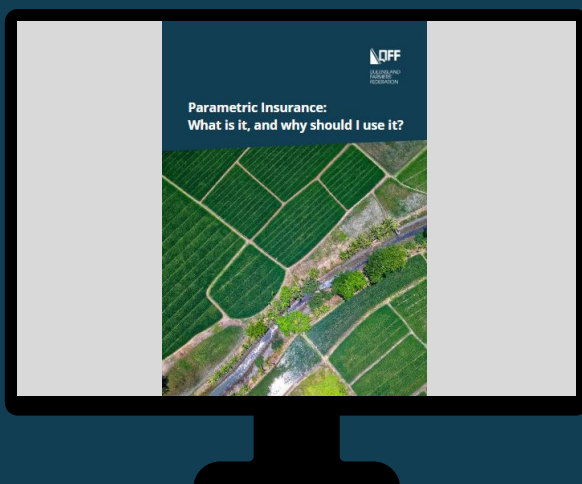
Weather Certificates are financial options or derivatives that provide a form of income protection for organisations and businesses. In the context of farming, income protection can be provided against fluctuations in the weather, such as not enough or too much rain or too high or low temperatures. Weather Certificate payouts are based on a weather index. A weather index is made up of measurements of weather attributes such as rainfall or temperature over a pre-defined risk period, i.e. amount of rain during September. The data that makes up the index comes from an independent source. In Australia it would come from the Bureau of Meteorology. For example, an Australian farmer with a Weather Certificate will have the ability to receive compensation for below average rainfall for a certain period during the year.

For more information, please reach out to QFF's Risk and Resilience Team via the details below.

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