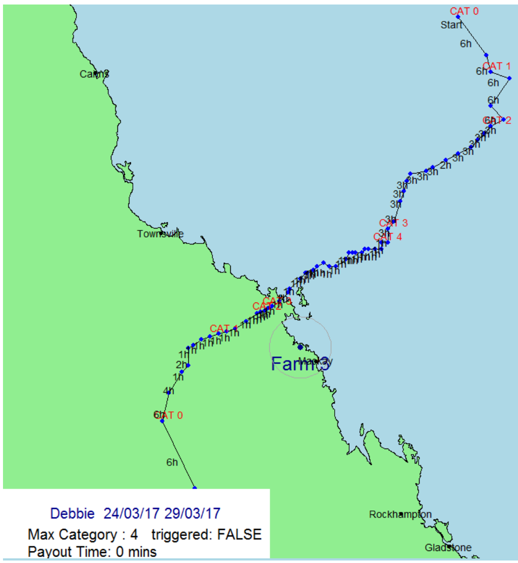
Case Study 3

Key Facts

Farm / Industry:	Sugarcane
Risk:	Cyclone and Rainfall
Location:	Marian, Central Queensland
Solution:	Index-based Insurance with additional Rainfall Trigger and 'cat-in-a-box' only



Farm Profile

The farm is situated outside Marian near the Pioneer River in central Queensland. The farm is 145 hectares and produces around 10,000 tonnes per year. The dry land farm relies on the high rainfall that typifies the Mackay region of Central Queensland.

Risk

Cyclone and flooding have been identified as major risks and tested for this farm.

The flooding is as result of intense rainfall associated with cyclones. Over 300mm of rainfall within a 48-hour period can be very damaging, with extensive damage caused due to the rapid moving water across the farm.

In March 2017, Cyclone Debbie caused widespread damage, lodging and breaking cane, while the intense rainfall caused localised flooding across the farm.

Action

Three options were identified and investigated for this farming enterprise.

Option 1

A 'cat-in-a-box'cover for a category three or above cyclone with a 50km radius; the centroid of the circle was set 25km above the location of the farm.

Option 2

A 'cat-in-a-box' cover (category one or higher, circle with a radius of 50km, centroid set at 25km above the location of the farm), with a rainfall trigger. The rainfall trigger is set at 300mm over a 48 hour period that overlaps the period that the cyclone is within the indemnification zone. Rainfall is measured at Mackay M.O.

Option 3

A 'cat-in-a-box' cover (category one or higher, circle with a radius of 50km, centroid set at 25km above the location of the farm), with a rainfall trigger. The rainfall trigger is set at

350mmm over a 48 hour period that overlaps the period that the cyclone is within the indemnification zone. Rainfall is measured at Mackay M.O.

Results

Option 1

- **Indemnification Zone (box):** Centroid located 25km north of farm with a 50km radius.
- **Policy Period:** 1 December 2018 to 30 April 2019.
- **Policy Trigger Event:** Any cyclone which reaches category three or above while within the indemnification zone during the policy period.
- **Payout:** If a policy trigger event occurs, this policy will pay the full policy limit.
- **The Rate on Line (ROL):** 10.6%

Option 2

- **Weather Station**Mackay M.O weather station
- **Indemnification Zone (box):** Centroid located 25km north of farm with a 50km radius.
- **Policy Period:** 1 December 2018 to 30 April 2019.
- **Policy Trigger Event:** Any cyclone which reaches category one or above while within the indemnification zone during the policy period AND 300mm over a 48-hour period that overlaps with the period that the cyclone is within the indemnification zone.
- **Payout:** If a policy trigger event occurs, this policy will pay the full policy limit.
- **The Rate on Line (ROL):** 8.79%

Option 3

- **Weather Station Location and Indemnification Zone (box):** Centroid located 25km north of farm with a 50km radius.
- **Policy Period:** 1 December 2018 to30 April 2019.
- **Policy Trigger Event:** Any cyclone which reaches category one or above while within the indemnification zone during the policy period AND 300mm over a 48-hour period that overlaps the with period that the cyclone is within the indemnification zone
- **Payout:** If a policy trigger event occurs, this policy will pay the full policy limit.
- **The Rate on Line (ROL):** 7.49%

Demonstrated

A severe cyclone like Cyclone Debbie that hit in 2017 can result in a 25% decrease in yield potential due to crop damage and crop loss; plus around about $200 per hectare of earthworks to help the farm recover.

Using a generic sugar price of $37.45 (incoperating a CCS downgrade) per tonne this equates to a financial impact of $142,333.

It is unlikely that a farm will want to cover for the full potential impacts of a disaster. Farmers are resilient, and generally have businesses that can absorb some of the financial impacts of disasters like Cyclone Debbie. Due to this, policy limits are more likely to represent an amount that helps the farm in the initial stages of recovery and would likely be around $100,000. Using this limit, the policy would cost:

- **Option 1** - $10,600
- **Option 2** - $8,790
- **Option 3** - $7,490

Recommendations

Due to the size of the indemnity zone and the track of Cyclone Debbie, this policy would not have been triggered for Cyclone Debbie. However, Cyclone Debbie did have a large impact on this farm, as the policy didn't pay out, the parametersmay not be the best fit for the farm. This real-life example of how these policies act out is important in informing landholders of their use. For this farm it might be best to isolate the rainfall only or increase the size of the indemnity zone.