Adapting to Tropical Cyclones

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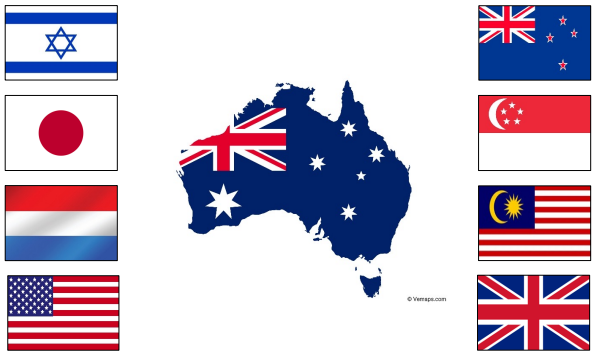
Research Purpose

- Australia is subject to Tropical Cyclone risks for 6 months of the year.
- Tropical Cyclones cause significant damage to Australia's Tree Crop Industries and destabilise food security.
- Recovering from the damage a Tropical Cyclones causes can take years and place significant strain on growers.
- Horticultural expansion in North Australia is occurring; particularly in high-value tree cropping.
- The research sought to answer the question: "Can growers adopt methods to mitigate the impacts of Tropical Cyclones".
- The objective of the research was to identify mitigation and management measures that provide avenues for tree cropping industries to adapt to the evolving risks associated with Tropical Cyclones, Typhoons and Hurricanes.

Key Learnings

- *Tropical Cyclones are decreasing in occurrence yet increasing in intensity.*
- *The severity of Tropical Cyclones is projected to increase (Potential Category 6 ranking).*
- *Tropical Cyclones have caused appx 1.4 Trillion in damage to global agriculture over the past 50 years.*
- *Impacts from Tropical Cyclones on food security extend beyond on-farm loss and include impacts to biodiversity and supply chains.*
- *Tropical Cyclones form across seven basins globally with between 80-100 events occurring per year.*

Travel and Research Locations



Case Studies

- *In Japan – growers have successfully grown Mango's in climate-controlled greenhouses.*
- *In New Zealand – growers have adopted ultra-high density planting regimes in apples and pears.*
- *In Malaysia – the use of chemicals allows for out of season floral induction and fruiting to occur.*
- *In Hawaii – growers mitigate risks by developing value added products which have higher returns.*

Recommendations for Industry

- *There is no "one size fits all solution" – Rather there are various strategies that growers can adopt.*
- *High-density plantings and Trellis plantings are the main mitigation measure being proposed – However these approaches have mixed results and are costly to implement.*
- *The adoption of growing tree crops inside climate-controlled hothouses presents a potential solution – However this is a high-cost mitigation measure and requires significant capital outlay.*
- *There are emerging areas of research into varietal selections, nursery management, propagation measures and chemical management which may reduce impacts through cropping outside the Tropical Cyclone window.*

Thank you to my sponsor

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