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Reducing disaster risk through strategic planning at Mt Nathan Nursery

With the increasing risk of natural disasters and extreme weather events, it's critical that Australian production nurseries are forward planning and implementing risk mitigation strategies that reduce the impact they have on the business and its operations.

Operating for over 26 years, Mt Nathan Nursery, located on the Coomera River in the Gold Coast Hinterland, Queensland, is one nursery that made the decision to implement risk mitigation strategies to minimise future stock losses and damage in the event of a natural disaster.

Across two nearby site locations, Mt Nathan Nursery has a total production area of 5.57 hectares, supplying mainly native and advanced tree stock primarily to large-scale Gold Coast landscapers, as well as the wholesale and retail sectors.

Being located on the Coomera River system, the business is highly susceptible to flooding events, having been hit by four major floods over the last 10 years, in 2010/11, 2013, Cyclone Debbie in 2017, and in the recent 2021 floods.

Owners of Mt Nathan Nursery, Bruce and Joy Williams and their daughter Cath have made a concerted effort to heed lessons learned during these disasters to improve their vulnerability to adverse weather events and reduce business risk.

"The impacts following floods were significant on our business, from both financial and operational standpoints," Bruce said.

"The costs in damages and lost stock were significant, with two of the four major floods events incurring an excess of \$350,000 in losses.

"When there is even a minor flood event, roads to the bridge crossing Coomera River are always closed creating a flow-on effect of logistical

problems for our business to both respond to an event and continue operations in the short-term. This impacts our supply chain, creating issues particularly for our intrastate customers.

"After Cyclone Debbie, we knew we had to make changes within the business to better prepare for these events to minimise risk and ensure continued business viability."

When Category D grant funding was declared for the Gold Coast hinterland through the Natural Disaster Relief and Recovery Arrangement, the business was approached by Project Leader, Kerry Battersby and the team at Nursery & Garden Industry Queensland (NGIQ) to participate in the development of the NGIQ Pilot Spatial Mapping Portal through the Cyclone Debbie Agriculture Industry Recovery and Resilience Program.

Funded by the Queensland and Australian Governments, the pilot mapping was delivered by spatial data consultants Cohga Pty Ltd and LandSolution. The project aimed to map nursery properties and adjacent landscapes to identify areas for infrastructure redesign and engineering solutions that will help reduce climate and seasonal impacts.

"In collaboration with NGIQ, we developed a custom Business Continuity and Recovery Plan which assessed various elements of the business and production cycles such as risk recognition, reduction and mitigation strategies, and supply chain logistics," Cath said.

"This plan mapped out our main nursery site, providing insights on size, shape and value of production areas, that enabled us to make immediate and strategic changes to our business.

"We made the decision to move all stock off the high-risk low lying, flat areas of the nursery to mitigate losses and subsequent supply issues. This was a significant factor in our decision to purchase

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the second nearby nursery site, so we'd be able to maintain production and remove stock off low lying areas. We also put in place a withdrawal plan so we can efficiently retrieve stock when we know a disaster event is coming.

“After receiving \$25,000 of natural disaster grant funding assistance from the NDRRA, we also decided to construct a new retaining wall to raise the production area above the river level and direct water flow away. This took about five to six months of construction during our recovery period after Cyclone Debbie, with the wall being designed, constructed, and positioned to precise specifications.

“This was a big decision for us, as it was not only a financial expense to build the wall, backfill it and put in drainage gravel and irrigation, but it also resulted in months of lost production in that area which had a lot of stock going back on it. But through our planning we were able to strategically assess the loss value versus future production and business growth.”

This level of preparedness and practical solutions meant that the business incurred very minimal damage during the March to April 2021 floods, with marginal losses and impact to supply following a three-day business shutdown.

“Our advice to other nurseries would be to plan early. To mitigate risk, it's important that you have a clear understanding of the disaster-prone areas of your nursery and manage this by implementing strategies that help you minimise losses and keep the business going. Once it's happening, it's often too late,” Bruce said.

Outcomes and successes from this pilot program were pivotal in the establishment of the levy funded, 'Nursery industry natural disaster risk mitigation and recovery plan' (NY18008) project.

Led by NGIQ and funded by Hort Innovation, this project seeks to better equip production nurseries with the tools to improve the management of climate threats and risks by providing practical resources that help businesses be prepared and well equipped to readily respond and implement natural disaster risk mitigation plans.

To date, this project had led to the development of a national Nursery Industry Risk Map, using data sets for cyclone tracks, wind gusts and includes live data maps from the Bureau of Meteorology, and a series of Nursery Preparation Checklists which contain information on preparing for pre-season, general site activities and immediate threats to bolster industry protection against natural disasters.

“The efforts and experiences of production businesses like Mt Nathan Nursery helps provide guidance for the development of robust risk mitigation plans like those created through this project, and highlight the importance of planning for business continuity,” said Kerry Battersby, project lead.



Access resources developed through this project, [here](#).

Watch the case study video [here](#).

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