Storm and Flood Industry Recovery Program - Case Studies





Dairy Farmer Response to Storm and Floods 2021/22



Managing the impact of floods and persistent wet on a new lease enterprise

Overview

- Farm impacted by multiple floods and the persistent wet.
- New lease enterprise with run down infrastructure and minimal facilities and systems-preparation for managing adverse climate events.
- Strategic and rapid culling, maintaining milking 2 times/day, with consultant and peer networks utilised.
- Despite being a lease farm, significant infrastructure projects have commenced to increase preparedness, productivity and manageability.

"Roseanne Dairy"

Wade Francis is a first-generation farmer with 22 years of dairying experience as a farm hand and farm manager on local dairies. He describes owning his own dairy business as his "life project". Wade leases a dairy on Pola Creek, a tributary of the Macleay River near Kempsey on the Mid-North Coast of New South Wales. Wade commenced leasing just 2 months prior to the March 2021 floods.

Wade grew his milking herd from 30 cows to 120 cows by January 2022.

Currently, he is milking 110 cows and made the decision to restrict his herd size to ensure manageability in all conditions with minimal employed labour. The milking platform is 60 ha with a moderate annualised stocking rate of 2.3 cows/ha strategically set to minimize exposure to purchased fodder and allow him to operate without additional labour. Starting with a predominantly Jersey and cross bred base, Wade has actively moved to milking more Holsteins as more milk per cow allows him to reach his production targets with less cows and a requirement for less replacements while also assisting with labour efficiency. In 2021, the milking herd was predominantly pasture fed supplemented with 1.8 t/cow/year pellets fed in the dairy with additional hay and silage as required. Currently, milking cows utilise the same feeding system, but he has increased the amount of concentrate fed in the dairy shed to 2.4 t/cow/year.

Underlying farm-system limitations increasing "risk" to adverse climate events

Wade is the first to admit that the farm had a high level of underlying risk to adverse climate events and more specifically storms and floods. The property had previously been used for dairying, but the most recent tenant used it for low-input beef production resulting in the running down of much of the dairy and paddock infrastructure. The 8-a side herringbone dairy had been de-commissioned with Wade needing to invest substantial funds to restore it to basic function.

The farm is comprised of 100% heavy alluvial flats with poorly drained soils. Proximity to Pola Creek and the Macleay River, in addition to impediments to surface drainage by wetlands were problematic.

As a traditional pasture-based enterprise with no developed forage feeding facilities, significant periods of limited pasture availability were likely to create challenges with delivery, consumption and wastage of supplementary forages.

A dilapidated in-dairy feeding system restricted feeding to 6kg of concentrate per cow/day with only limited on farm storage of pellets (11 tonnes between 2 silos). There were two hay sheds that allowed for some all-weather fodder storage.

The laneways and creek crossings were already in poor condition and drainage systems were not maintained. There were also only 3 stock water points across the whole property.

Prior to 2021, there was no generator. Being a new business, the enterprise had minimal cash reserves as Wade had



Sacrifice paddock with hay racks, waterlogged paddock, and the concrete feeding area with hay racks.

already invested substantially in cattle acquisitions and milking plant and vat restoration. Wade was also the sole operator of the business with limited but appreciated support from family and casual labour.

Impact of the 2021 and 2022 storm and floods

The property experienced 3 major flooding events between March 2021 and July 2022. The 2021 flood was the largest, but the water rose and receded quickly. In the height of the flooding events, 90% of the property was inundated anywhere between 2.5 cm and 2 meters of water

The storms and floods of 2022 were more impactful due to the persistent wet. During 2022, paddocks remained waterlogged for 6 months with safe trafficking of cattle or machinery rendered impossible.

Wade described the main priorities during the 2021 flood as "feeding the cows and paddock recovery" whereas the main priorities during 2022 were "surviving and keeping cows alive".

During the peak of the flood events, the property was road isolated for 24 hours and Wade initially stayed in a swag in the dairy in 2021. He then bought a demountable cottage to allow him to stay on the property for several weeks to ensure continued access to the property in 2022.

Through the 2021 flood event, the smaller

herd of 40 cows was maintained and fed hay in the dairy yards and fed concentrate 2 times/day in the dairy. As water receded, they were fed hay in some more elevated "sacrifice" paddocks.

Subsequent to the 2021 storms and floods, Wade utilised grant funding to invest in some changes and constructed a concrete feeding area with hay rings to support feeding in future events. He also purchased a generator that could operate the dairy, refrigerate milk and deliver feed in the dairy, accompanied with fuel storage to run for 28 days.

Due to the consecutive nature of the 2022 floods and ongoing paddock saturation, cows were maintained and fed in the dairy yards for 3 months using rubber gym mats to increase cow comfort. As the farm slowly dried, cows were given access to less impacted paddocks complemented by the consumption of hay and silage from the hay racks on the concrete feeding area.

During both years, non-milking heifers were maintained on a mound, calves were in hutches on a raised ridge, and the dry cows were maintained on the property next door in the yards that he had access to.

Significant infrastructure damage occurred in both the 2021 and 2022 events including the loss of fences and three creek crossings and severe laneway damage creating issues with trafficking



Figure 1. Graph of Roseanne dairy monthly milk solid production and herd size.

cattle and machinery around the farm. Wade saw an increase in young stock disease and deaths because of not being able to keep them clean and dry. Heifers and cows were "not cycling" resulting in severe long-term reproduction impacts.

Wade described the event as emotionally and physically debilitating stating, "It was hard getting up every day and going to work knowing I was losing money and animals were dying".

Impact on milk solid production and milk quality

Subsequent to the March 2021 event, milk production continued to increase as herd size and production per cow increased under favourable spring conditions (Figure 1). Herd size peaked at 120 head just prior to the March 2022 floods where there was an immediate 3-month drop in milk solids production by 21% compared to the same time period the year before. This is predominantly due to intentional rapid and



The dairy yards with rubber gym mats to increase cow comfort.

extensive destocking of the milking herd. It took 6 months after 2022 floods for milk production to return to levels seen in the previous year. Moving forward, the herd's production is continuing to increase and is currently at its highest level since Wade commenced operations.

Milk quality (somatic cell count-SCC) was also adversely impacted by both events. The herd's SCC was higher than the previous year for 5 months from February to June of 2022 with another spike in October 2022. Due to the smaller milking herd size, Wade's 2022 bulk milk SCC was less than the group average but followed a similar pattern to most impacted farms with higher SCC from February to July.

Responses to the event

Wade made some key tactical decisions to respond during both flooding events. As waters rose in 2021, Wade immediately ordered 30 tonnes of hay but did not have to make many significant changes to herd size as it was already small and could be easily managed. The additional hay purchased allowed him to feed the herd while access to paddocks was restricted. Autumn pastures were established relatively quickly and the winter and spring proved favourable.

Between March 2021 and March 2022, Wade made some key changes that relieved some stress of the 2022 storm and flood events. Once trafficable, Wade initiated immediate repairs to laneways and creek crossings. He also decided to maintain 4 weeks of fodder on hand at any one time.

In the peak of the 2022 event, Wade initially considered drying off his entire herd and temporarily abandoning milking. After discussions with his farm consultant, they devised a plan to dry off most of the pregnant cows, cull problem cows, and continue to milk his freshest and most productive cows. He continued approximately 40% of his original herd milking twice daily to ensure retained cows were receiving adequate concentrate and that they hopefully maintained reasonable milk production to support cashflow, and later lactation when conditions hopefully improved. Milking less cows allowed better management of milk quality and mastitis risk, supported feeding and dramatically reduced work pressure on Wade during this time.

In addition, Wade scheduled a monthly visit from a hoof trimmer to rapidly address lame cows. He also maintained regular contact with key creditors who were able to support him with extended trading terms during the event and its aftermath. Even though Wade has a small network, he found support in his immediate family, his consultant, his milk company, Dairy NSW, and local farmers.

The aftermath of the persistent wet resulted in his cows not visibly cycling, so he utilised bulls for 12 months, also reducing labour pressures.

Due to the poor state of the infrastructure when Wade commenced operations, the impact of the flooding events increased the need for urgent repairs and protracted the recovery of the infrastructure and farm accessibility.

Recovery and future preparations

Wade feels fully recovered from the 2022 storms and floods but acknowledged this

took about 18 months. Despite the difficult start to his new venture, he is optimistic about his future in the dairy industry and feels more prepared for future storm and flood events.

Although a lease farmer, Wade has committed to several significant infrastructure and management projects to increase preparedness for future floods, and other adverse climate events, funded through farm cashflow and grants. The motivation behind these changes was not only for disaster management, but also to improve overall manageability and productivity of the farm.

- 1. Eleven new water troughs have been installed and paddocks redesigned to allow water access in every paddock. This gives more paddocks for Wade to utilise during adverse weather while also assisting with heat stress, grazing and nutrient management, and general productivity and cow well-being. Wade mentioned, "More access to water has the cows milking better and motivates them to move from the dairy to the paddocks."
- 2. Laneways and creek crossings have been repaired and improved substantially. Trafficking cattle and machinery on poor quality and



Laneways during the 2022 floods and persistent wet and the current state of the laneways.

damaged laneway and creek crossings was difficult (even under favourable conditions). There is improved all weather access to more-elevated paddocks and the investment in laneways and creek crossings has already paid benefits during the wet autumn of 2024.

- 3. The dairy feeding system has been fully replaced, lifting the previous cap from only being able to feed a maximum of 6 kg per day. The new feeding system allows Wade to feed his herd to their potential and he can more proactively vary feed rates in response to normal seasonal pasture variation as well as during adverse weather events. Wade attributes these changes to a minimum of 4L/cow/day increase.
- 4. 40-tonne silo allowing increased storage of feed reserves. Being able to purchase in bulk has also increased supplier options, giving the business access to more competitively priced feed-an advantage under both favourable and adverse conditions.
- 5. Wade has implemented regular herd recording and veterinary herd health visits and has installed an automated heat detection system. Focus on fertility ensures a fresh, feed efficient herd which is critically important in times of climate stress when a higher percentage of diet is purchased. Improved access to individual cow data allows Wade to make better culling. feeding and breeding decisions. The herd genetic base has shifted to primarily Holstein Friesians to increase milk per cow and optimise his labour efficiency. Wade is also continually focusing on pasture management to optimise home grown feed, while continuing to aggressively use concentrates to manage seasonal and event related shortages when pasture quantity and quality is limited.

Wade said, "On this farm, you can make money during a drought but can't make money in the wet." However, Wade has made significant changes in order to be a farmer that can thrive under all conditions.



Before and after the renovations to the in-dairy feeding system.

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