

**Submission
No 77**

INQUIRY INTO LONG-TERM SUSTAINABILITY OF THE DAIRY INDUSTRY IN NEW SOUTH WALES

Organisation: Dairy NSW, Murray Dairy, Subtropical Dairy and Dairy Australia

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Dairy NSW, Murray Dairy, Subtropical Dairy and Dairy Australia submission to:

Inquiry into the long-term sustainability of the dairy industry in New South Wales

Contact

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ABOUT THE NEW SOUTH WALES DAIRY INDUSTRY



AUSTRALIA'S ANNUAL PER CAPITA CONSUMPTION

97 litres
milk



13%
of milk production is exported



AVERAGE ANNUAL MILK PRODUCTION PER COW

7,067
litres



MAJOR EXPORT MARKETS tonnes

25,168 t
Greater China

2,888 t
Japan

2,772 t
Singapore

2,780 t
Malaysia

1,747 t
Indonesia



TOTAL ANNUAL MILK PRODUCTION

1,044
million litres



4th

Dairy is Australia's fourth largest rural industry



5,600

Dairy industry workforce



AVERAGE HERD SIZE

272

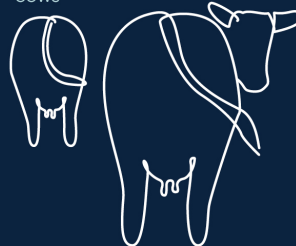
cows



NEW SOUTH WALES DAIRY HERD

145,000

cows



VALUE OF FARMGATE PRODUCTION

\$647 million



534

Registered dairy farms in NSW



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Executive Summary

This is a submission from Dairy NSW, Murray Dairy, Subtropical Dairy and the umbrella organisation Dairy Australia.

Dairy Australia is the dairy industry-owned service company, limited by guarantee and known as a Research and Development Corporation. It is mainly funded by the Dairy Services Levy, a tax paid by all dairy farmers based on milk production. It also acts as a funding body through which the Australian Government provides funding for rural research and development in Australia. As well, Dairy Australia attracts funding at project level from state governments, universities, research organisations and other dairy support organisations.

In this way, we play a critical role in shaping a profitable and sustainable dairy industry.

Dairy Australia operates nationally across eight dairy regions, where the knowledge, innovation and insights generated by farmer levy investment are delivered back to the farmer.

Dairy NSW, Murray Dairy and Subtropical Dairy are the three Regional Development Programs operating in the state of NSW. Each with their own board, they carefully identify and develop priorities for ongoing research, development, education and extension relevant in their region. In doing so, they work hard to ensure regional and national policies are linked and fully integrated so that research and extension work is prioritised for regional benefit.

In recognition of our key role in dairy R,D&E, this submission seeks to build a deeper understanding of the key drivers of productivity and profitability relevant to dairy farm businesses in the state of New South Wales (NSW), as measured, surveyed, commissioned and analysed by our organisation. With this robust analysis at hand, we aim to assist the NSW Legislative Council Portfolio Committee in its deliberations and in the development of its recommendations.

Drawing from the new *Dairy Australia Strategic Plan (2020-2025)* with its seven priorities and outcomes driving profitability and sustainability, this submission focuses in on three key profit drivers for dairy in NSW that we consider are particularly relevant to the Portfolio Committee and this inquiry:

- **Business and risk management skills**
- **Access to skills and capability**
- **Climate adaptation (in a diverse range of dairy farming systems)**

This list is the foundation of dairy farm profit and the ability to be sustainable into the future. In our view, government and industry programs that focus on these drivers will play a significant part in driving dairy industry prosperity in NSW into the future.

Partnership with government, aligned industries and research institutions will be critical for realising progress in the urgent timeframe demanded for effective response, along with enabling a positive policy and regulatory environment for dairy.

To deliver on these three drivers, we make two recommendations to the Portfolio Committee:

1. That the NSW Government nominate the dairy consortium proposal for a NSW Bushfire Recovery Sectoral Development Grant. This proposal aims, through ten key projects, to accelerate farm recovery and build business resilience through enhancing productivity in the dairy system, underpinned by enhanced capability of its people. This includes the Our Farm Our Plan business management and Dairy Passport people management programs, along with programs focused on feedbase and herd efficiency in a changing climate.
2. That the NSW Government reignites support for specialist, independent, dairy-focused extension expertise within the NSW DPI, to work with Dairy NSW, Subtropical Dairy and Murray Dairy to respond to a lack of skilled service providers of 1:1 dairy farm system and farm business management advice.

1 Introduction

Dairy Australia and its three regional programs operating in New South Wales (Dairy NSW, Murray Dairy and Subtropical Dairy) welcome the opportunity to provide a submission into the NSW Legislative Council Portfolio Committee inquiry into the sustainability of the New South Wales (NSW) dairy industry and the role of the Department of Primary Industries and other government agencies in supporting the industry.

Dairy Australia is the dairy industry-owned service company, limited by guarantee and known as a Research and Development Corporation. It is mainly funded by the Dairy Services Levy, a tax paid by all dairy farmers based on milk production. It also acts as a funding body through which the Australian Government provides funding for rural research and development in Australia. As well, Dairy Australia attracts funding at project level from state governments, universities, research organisations and other dairy support organisations.

In this way, we play a critical role in shaping a profitable and sustainable dairy industry.

Dairy Australia operates nationally across eight dairy regions, where the knowledge, innovation and insights generated by farmer levy investment are delivered back to the farmer.

Dairy NSW, Murray Dairy and Subtropical Dairy each operate under the auspices of Dairy Australia. Each of these Regional Development Programs operating in the state of NSW are non-profit incorporated bodies, each with their own board that includes farmer representation.

Dairy NSW, Murray Dairy and Subtropical Dairy carefully identify and develop priorities for ongoing research, development, education and extension. In doing so, they work hard to ensure regional and national policies are linked and fully integrated so that research and extension work carried out in each region provides productivity gains and efficiencies for the benefit of dairy farmers in each region.

The umbrella organisation, Dairy Australia, has developed a new *Strategic Plan (2020-2025)*, due to be launched in late October 2020. This describes the seven priorities and outcomes that will contribute to delivering improved profitability and a more sustainable dairy industry nationally, and in NSW. These priorities and outcomes are provided as an infographic in **Appendix 1**.

In the interests of this NSW Legislative Council Portfolio Committee inquiry, we have focused on **three key areas** that speak to on-farm performance and risks to the ongoing sustainability of NSW dairy farmers, in order to assist the Portfolio Committee to both understanding the profit drivers more deeply and illustrate the importance of partnership with the NSW government for achieving prosperity.

Section 2 of this submission provides an overview of the dairy industry in the state of NSW, served by our three regional programs, Dairy NSW, Murray Dairy and Subtropical Dairy.

The submission then examines three key profit drivers in detail:

- Managing business risk (**section 3**)
- Capable workforce (**section 4**)
- Adapting to climate change (**section 5**)

Finally in **section 6** we make concluding remarks about the opportunity for sustained government support and partnership not only in bringing our RD&E investment to life on NSW dairy farms, but also in ensuring a stable and favourable policy and regulatory environment in which to operate successfully.

2 The NSW dairy industry

Dairy is the fourth largest Australian rural industry and a key sector of the agricultural economy.

Dairy farms operating in NSW made up 11.9% of national milk production in 2019/20 (down from 12.3% in 2018/19). Approximately 1.04 billion litres of milk produced from 145,000 cows on 534 farms resulted in farmgate production valued at \$647 million in 2019/20. ¹ Noting that farmers usually spend or reinvest 80% of receipts, \$518 million is estimated to have been reinjected into the community this year. If the stimulus of processing is also accounted for, the community flow-on impacts are estimated at around \$1.12 billion. ²

As **Figure 1** shows, the dairy industry in NSW operates across a diverse landscape—spread along the coastal and hinterland regions and in irrigated inland river valleys. Along with the Dairy NSW region (shown in blue), the NSW industry includes parts of both the inland Murray Dairy region in the south (light green) and the Subtropical Dairy region further north (mauve). Such wide variation in geography and climate explain why farming systems (and cost of production) in NSW are so variable, though seasonality in milk production is flatter in NSW than in Victoria and Tasmania (**Figure 2**).

Farms in the northern reaches of NSW are generally characterised as having moderate to high rainfall, limited irrigation, a kikuyu/annual ryegrass pasture base with some use of summer forage crops. Farms to the south are generally characterised by lower rainfall, mainly irrigated perennial and annual pastures, greater use of forage crops, larger herds and bigger farms. Farms in the Murray Darling Basin region of NSW are notable in particular for being on the front line of adapting to climate change: they are managing the volatility in water availability/price and have increased water use efficiency often in association with a changing feedbase.

The dairy industry acts as a major source of employment across these regional areas. It is estimated that approximately 5,600 people are directly employed on dairy farms and by dairy companies in 2019/20. There are 24 milk processing factories positioned in regional communities across the state (**Figure 3**). Dairy contributes approximately 7.7 full time jobs per \$1 million of turnover (on farms, in processing and in flow-on community impacts). ³ NSW dairy farmers also contribute significant community benefits that are more difficult to quantify, such as undertaking weed and vermin control, managing water courses and catchments, protecting biodiversity and endangered species and in this way making a contribution to tourism in regional and coastal areas.

The domestic market is particularly important to NSW dairy farmers. In 2019/20, 64% of milk produced in NSW was sold as fresh drinking liquid milk. 23% was manufactured into other products (such as cheese or yoghurt) and sold on the domestic market. The remaining 13% was exported overseas (accounting for 7% of Australian dairy exports by volume). ⁴ Furthermore, NSW has traditionally been the production area that has supplied shortfalls in milk production in Queensland. Over time, profitability challenges have changed the Queensland milk pool which has opened a gap of opportunity for more than 200 million litres from NSW. ⁵ There are clear supply pathways moving milk from production surplus areas in the south eastern states, further north to meet seasonal supply shortfalls. Often this milk has been transported to meet domestic market supply contracts (for retail, food service or industrial users) for fresh, short shelf life products - which means processors have limited scope to use global suppliers to meet their obligations.

Processors operating in traditionally fresh product domestic markets like NSW earn on average over 70% of their revenue from fresh drinking milk. Yoghurt, cheese, cream, other dairy products and a relatively small amount of UHT milk make up the remaining revenue. Particularly in these “fresh milk states”, the widespread introduction of \$1/litre milk and private label milk at retail level has had considerable negative effects on industry confidence and margins. Evidence supplied to the ACCC Dairy Inquiry suggested that, while private label contracts are profitable for some processors in isolation, many private label contracts are at best profit-neutral for processors and that firms may operate at a loss once overheads are fully

¹ Dairy Australia 2020. *Australian Dairy Industry in Focus 2020*. Melbourne, unpublished at time of writing.

² Multipliers developed by Econsearch as estimates only, unpublished.

³ *ibid.*

⁴ Dairy Australia 2020. *Australian Dairy Industry in Focus 2020*. Melbourne, unpublished at time of writing.

⁵ Dairy Australia, Australian Dairy Farmers, Gardiner Foundation & Australian Dairy Products Federation 2019. *Australian Dairy Plan: Situation Analysis*. Melbourne.

accounted for. It is well recognised that processor margins are better for branded product, compared to private label equivalents. With this being the case, the discount milk policies have eroded the profitability of the broader supply chain by reducing the market share of branded milk.

Indirectly, there has been no question about the impacts of heavy retail price discounting and how it has eroded the perceived value of dairy by consumers. Dairy farmers have felt the emotional impact as they invested their livelihood into caring for animals and producing fresh milk in an industry that appears to be de-valued. Traditionally fresh milk production states like NSW supplied milk to fulfil domestic demand requirements. However, reduced milk production in these regions in recent years has created significant supply tension in the Australian domestic market.

In times of production surpluses in south eastern states this isn't a problem as the south eastern milk price is generally lower than that for northern and western milk production states, suggesting freighting milk up the eastern seaboard, or fresh manufactured product across the Nullarbor to WA is economically viable. However, milk production dynamics within Australia are changing. Since 2011/12 Queensland hasn't been self-sufficient with respect to milk production and consumption and has relied on milk produced in NSW to fill seasonal gaps in production, as mentioned above.

The importance of processing capacity has also been recognised in the prevalence of cooperative ownership of processing infrastructure by farmers during the history of the Australian dairy industry. In a global context there are still many large cooperatives in existence today, but the herd has progressively thinned over the last decade. There are a number of reasons, from strategic missteps to improving access to capital and mitigating redemption risk. As a result, where a cooperative might have traditionally been accountable only to its member shareholders, the current corporate landscape and in addition to being accountable to shareholders and overseas parent companies, there are new dynamics present which repositions the importance of Australian origin product.

While these dynamics provide important context for understanding the supply chain dynamics in which NSW dairy farmers operate, this submission addresses matters that are directly within the Dairy Australia remit, as the industry Research and Development Corporation.

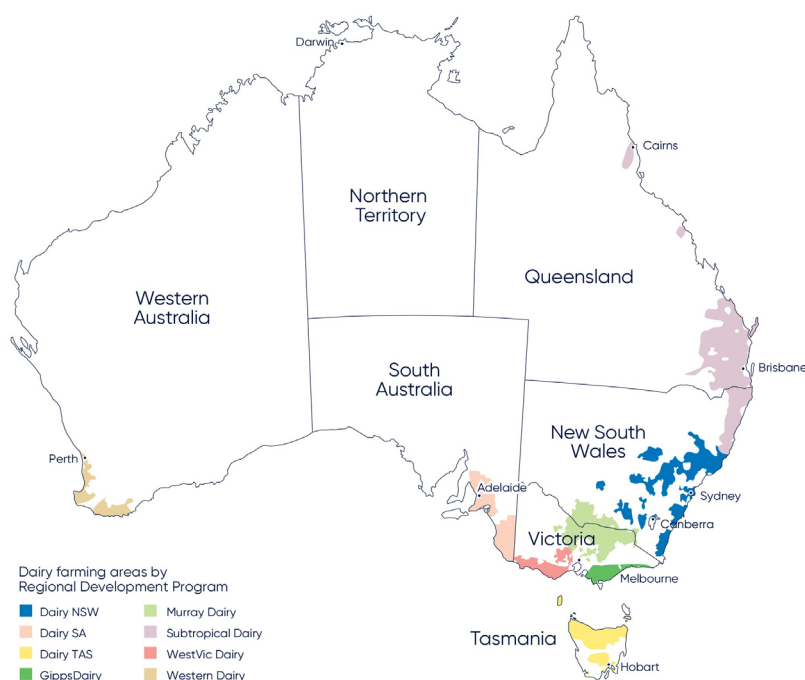


Figure 1. Dairying regions.⁶

⁶ Dairy Australia 2019. *Australian Dairy Industry in Focus 2019*. Melbourne, 52pp. See Appendix 1 p. 33.

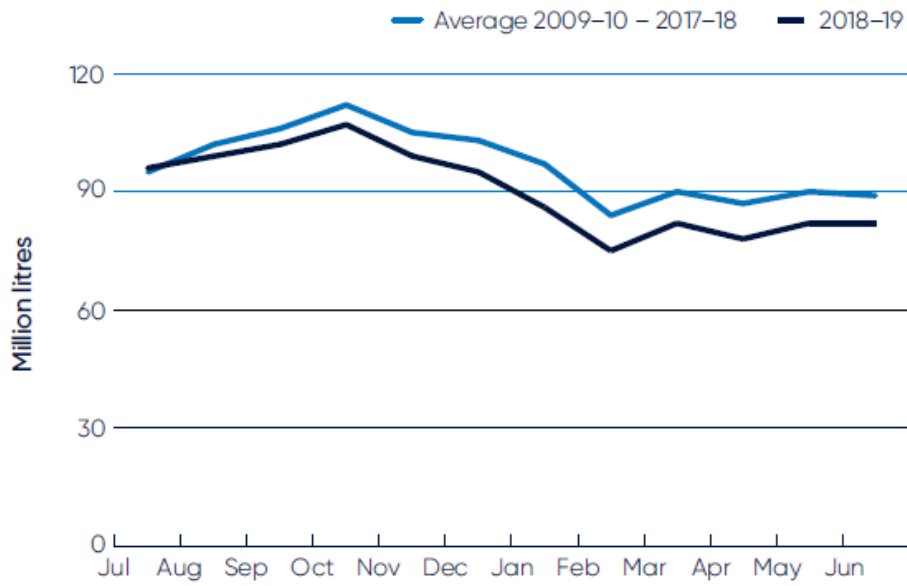


Figure 2. Seasonality of milk production in NSW in 2018/19.



Figure 3. Location of 24 milk processing facilities in the state of NSW.

3 Managing business risk

Agriculture is ranked as the riskiest sector in our economy and one of the riskiest of agriculture sectors among developed economies.⁷ Not only are farm businesses managing global risks such as falling commodity prices, trade barriers, changing consumer tastes and perceptions and a warming and drying climate, but also domestic risks such as contractual problems, regulatory burden and rural workforce shortage. The toll that managing this constant bombardment of challenges takes on farmer physical and mental health is better understood this decade than those past, but it has long been the case that resilience is an essential attribute of the Australian primary producer.

Throughout the 1990s the dairy industry experienced strong growth, but this has stalled since deregulation. This period coincided with the latter half of the severe and prolonged 'Millennium drought'. Increased levels of market and margin volatility have undermined confidence in the outlook for many farmers, who are seeking reliable returns on which to build a longer-term future. As a result, there has been ongoing consolidation within both dairy farming and dairy processing. The number of dairy farms has continued to fall nationally, down 8.5% in 2018–19 compared to the year prior. In NSW, farm numbers continue to decline, and Dairy Australia estimates the closure of over 40 dairy farm businesses following the bushfires of last summer.⁸

In recent years, rising input costs, combined with unprecedented market and climate volatility, have undermined profitability. But demand for dairy products remains strong. Domestic demand continues to grow and the outlook for exports is also very positive, as is the investment climate for agriculture.

A significant challenge for the dairy industry is to meet this growth in demand for dairy products through a proportionate increase in the industry's capacity to supply.

14% of NSW dairy farming businesses are currently in an expansion phase, 42% are contracting and a further 12% report limits on a desire to expand, causing significant concern among industry participants (**Figure 4**). Major challenges reported by the farmers participating in the Dairy Australia *National Dairy Farmer Survey 2020* included input costs, feed, climate and to a lesser extent milk price. Only 38% of participants expect to be profitable in 2019/20, which is the lowest proportion of profitable farms nationally. Drought and bushfire in NSW partly explain the most recent decline in farm numbers and profitability and the hardship of those events and their impact on confidence and sentiment cannot be overstated.

⁷ <https://www.afr.com/policy/economy/drought-fire-and-farm-wars-20200217-p541h4#:~:text=Australian%20agriculture%20is%20ranked%20as,sectors%20among%20all%20developed%20countries.&text=The%20US%2DChina%20%22phase%20one,must%20import%20from%20the%20US>

⁸ Dairy Australia 2020. *Australian Dairy Industry in Focus 2020*. Melbourne, unpublished at time of writing.

Regional NDFS results at a glance

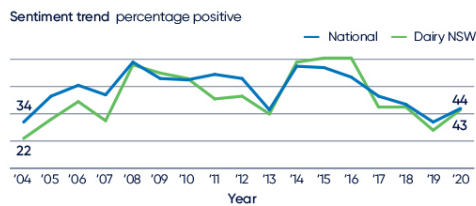
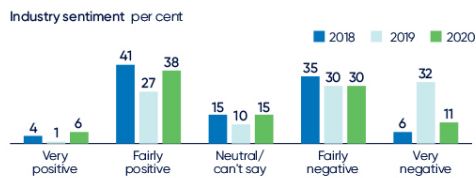
Dairy NSW

While respondent's confidence in both the industry and the future of their own business remains lower than the national average, recent rainfall in some areas and an improved milk price has significantly increased confidence in their own business this year.

Over the next 6 months, input costs, weather conditions, feed costs and availability are however expected to be ongoing issues for approximately half of all respondents in this region.

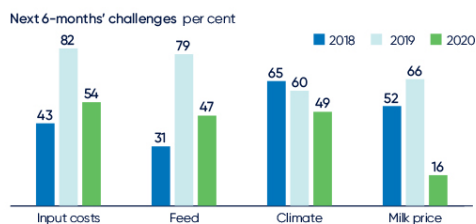
These challenges have contributed to less than half of the region's farms making an operating profit in 2018-19 and only 38% expecting to be profitable in 2019-20. This is the lowest proportion of profitable farms nationally.

Sentiment

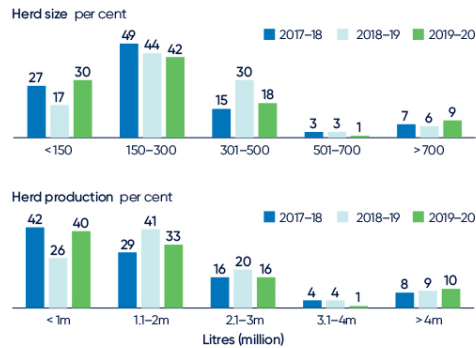


Profitability and investment

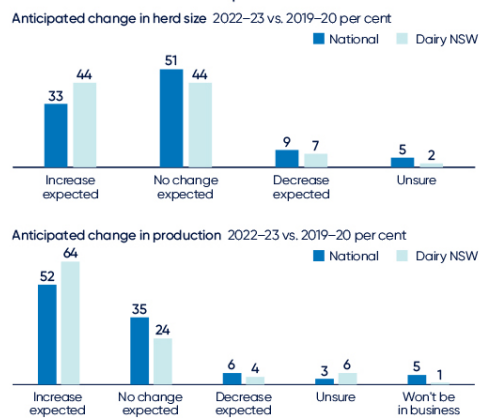
47% Made profit 2018-19	81% Invested on farm 2018-20
38% Expect profit 2019-20	89% Intend to invest 2020-22
19% Profit higher than 5-year average	42% Invest in machinery
27% Profit about same	24% Invest in dairy plant
52% Profit lower than 5-year average	24% Invest in irrigation



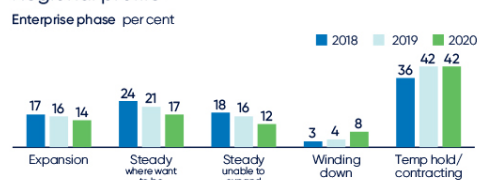
Current herd size and production



Forecast herd size and production



Regional profile



The 'average' Dairy NSW farmer



Figure 4. Summary of results from the Dairy NSW region of the Dairy Australia *National Dairy Farmer Survey 2020*.⁹

⁹ Dairy Australia 2020. *National Dairy Farmer Survey 2020*.

3.1 Drivers of profitability

Physical and financial analysis undertaken for the joint NSW Department of Primary Industries and Dairy Australia *Dairy Farm Monitor Project*¹⁰ along with extensive industry consultation during the development of the *Australian Dairy Plan*¹¹ have served to reveal some key insights on dairy farm profit drivers, including specifically for the industry operating in NSW.

Generally, profitability is closely linked with milk price, but widespread drought conditions over the past two years has significantly inflated the cost of production for NSW dairy farmers, resulting in lower profit (Figure 5). Indeed, industry analysis suggests that only the top 25 per cent of farmers are likely to continue in a strong business position. Preliminary analysis of data from 2019/20 suggests that the top 25 per cent have a solid average EBIT over a nine-year period of \$1.89/kg Milk Solids (MS) however, the average farmer in the sample has an equivalent figure of \$0.78/kgMS.

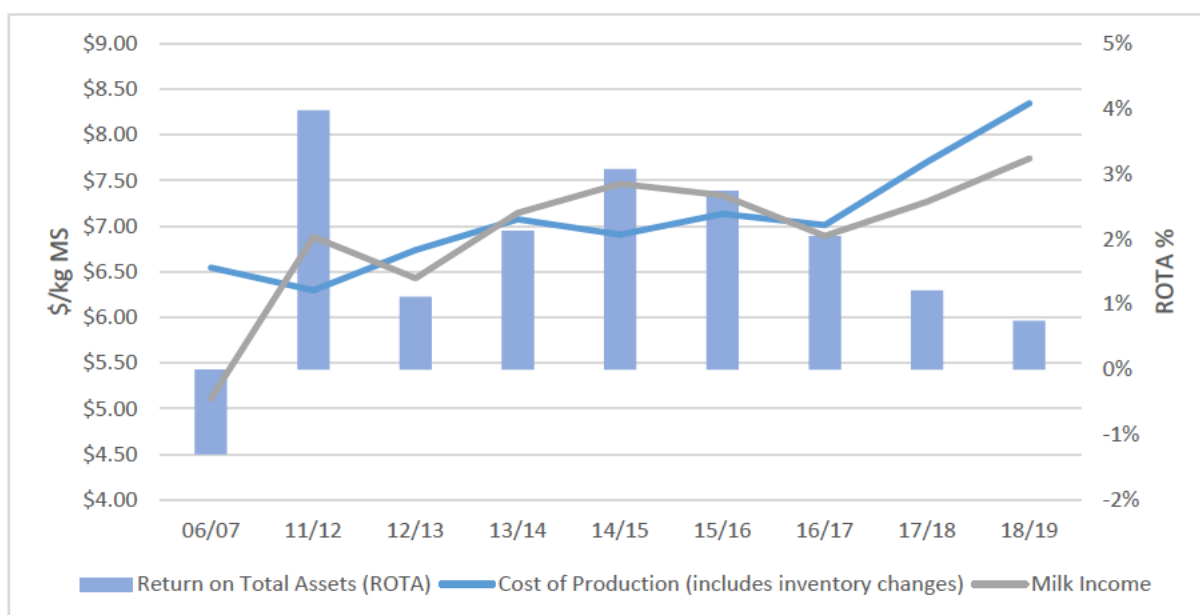


Figure 5. NSW Dairy Farm Monitor Project performance (nominal \$).

3.1.1 Cost of production

Farm input costs (water, feed, labour and energy) are increasing at a faster rate than the price received for farm outputs and at a faster rate than productivity gains. This applies generally at the national level and is clearly shown for NSW farms in Figure 5.

Factors affecting the cost of production specifically in NSW during 2019/20 (relative to, for example, Victorian dairying regions) include:

- Lack of critical mass of farms and therefore loss of access to services, advisors and contractors;
- Poorer farm infrastructure such as dairy sheds, laneways, paddock layout and water supply. This represents suboptimal farm efficiency, leading to an increased need for labour and limits on stocking rate. This results in higher imputed labour costs per farm. Industry feedback suggests that investment on farms has focused more on machinery than on infrastructure, partly because of the

¹⁰ NSW Department of Primary Industries and Dairy Australia 2019. Dairy Farm Monitor Project.

¹¹ Dairy Australia, Australian Dairy Farmers, Gardiner Foundation & Australian Dairy Products Federation 2019. *Australian Dairy Plan: draft for comment*. Melbourne, 40pp. Accessed 23 Sep 2020: <https://www.dairyplan.com.au/key-documents>

previous point about lack of service providers and contractors. For example, farmers would typically buy a new baler before spending money on improved laneways;

- Flat milk supply, driven largely by domestic demand for fresh milk. While the milk price received is therefore a premium for many NSW dairy farmers, the energy requirements of the dairy herd do not optimally match the phases of pasture growth, resulting in the need to address the feed deficit and a higher cost structure as a consequence. (Feed costs contribute to around half of the farmers cost of production, so there is little surprise that farmers with the ability to source a lower cost feed (per kg Milk Solids produced—the basis of milk payments) have the highest financial performance over time. Exposure to the feed market is a key determinant of cost and therefore profit—this can be seen particularly in times of drought).

In the north of NSW, this picture is heightened, and the factors also include:

- Higher heat and humidity than in the southern areas of the state;
- Use of tropical pasture as a feed base (lower quality but higher Dry Matter/hectare potential);
- Higher grain prices (by \$40-50 per tonne);
- Smaller farms and herd sizes (though higher stocking rates, this can mean that labour costs are higher relative to output);
- Extremes of water availability (more floods, but also very dry periods, less reliable irrigation supply on unregulated coastal systems, limited irrigation area).

Margins in NSW have not been favourable for a number of years, constraining investment and exacerbating the increasing cost of production. There is a clear correlation between cost of production (\$/kg MS) and profit. The ability to cut costs which are not detrimental to the business's performance is key to producing consistently high performance.

The optimal cost of production will vary, depending on the milk price paid, the seasonal conditions and the cost of inputs.¹² General cost control is essential to profitability and can be attained at a range of milk prices in a range of farm systems, where productivity is maintained and business and risk management are a key focus of the farm business owner.

3.1.2 Productivity underpins profit

The way farmers can adjust to ever shrinking margins is through improving their productivity i.e. more output per unit of input.

O'Donnell (2010) found that the terms of trade for the Australian agricultural sector declined by about -1% per annum between 1970 and 2001. To maintain profitability, dairy farm businesses would need productivity improvements of at least 1% per annum. Climate change will make meeting this target even more challenging. It is unclear how much worse this may have been had we not made past investments in productivity-focused R&D.

Table 1 indicates that productivity in the Australian dairy industry has declined in recent times and has not achieved any productivity gain during the period of 2008-2018.¹³

¹² Dairy Australia, Australian Dairy Farmers, Gardiner Foundation & Australian Dairy Products Federation 2020. *Measurement of profitability on Australian dairy farms: Historical trends and future targets*. Appendix F: Australian Dairy Plan, Melbourne, 18pp.

¹³ *ibid.*

Table 1 Dairy industry productivity 1978–79 to 2017–18

	1978–79 to 2017–18	Decade pre-2000	2000–01 to 2017–18	Last decade (pre 2017–18)
Productivity improvements	1.6%	2.0%	0.7%	0.0%

Source: Adapted from ABARES Australian Dairy Industry Survey

Dairy Australia’s research agenda aims to address this productivity challenge and ultimately drive more profitable and sustainable dairy farms. The DairyBio, DataGene and DairyFeedbase programs focus in simple terms on getting more for less. Better herd genetics, higher quality and higher yielding pasture and feedbase options, better feed conversion and healthier animals—these are the key targets of these scientific programs, funded by farmer levies, aimed at improving productivity.

Dairy Australia’s regional programs, notably Dairy NSW, Murray Dairy and Subtropical Dairy in the state of NSW, aim to translate these innovations into farm practices through a range of extension and demonstration programs such as Feeding Pasture for Profit, Focus Farms, the Young Dairy Network, Women in Dairy, webinars and online discussion groups.

More needs to be done to drive productivity gain. Dairy Australia is embarking on new investigative work to better understand long-term productivity drivers and dairy industry competitiveness at the national and regional levels, including modelling the impact of climate change. By examining what has driven productivity decline and the connection to profitability more closely, we hope to be able to model the impact of future improvements in productivity, profitability and competitiveness in a way that confidently informs farm business decisions, as well as our own research and extension agenda.

See **Appendix 1** for an infographic overview of Dairy Australia’s *Strategic Plan 2020-2025*.

3.1.3 Farm business management

Operating with increased market, input cost and seasonal volatility NSW dairy farmers have to be more prepared, more agile and more proactive than ever. Using contemporary business management skills, information and tools to assist in managing risks and informing decision-making is essential in delivering more profit consistently and achieving long-term business and personal goals.

Dairy Australia’s first strategic priority is to have more resilient farm businesses (see **Appendix 1**), with the goal of farmers being more profitable, resilient and innovative in managing price and cost volatility. Aligned to this the Australian Dairy Plan has committed to intensify the focus on farm business skills to improve profitability and better manage risk. Fundamentally we are working to develop a more proactive, prepared and positive business culture within the dairy industry.

Dairy Australia’s Farm Performance program has developed a national offering for farmers to equip them to be in control of the business side of their farm and use data and information to make better decisions. In NSW the delivery of these offerings this has been an area of significant collaboration with Dairy NSW, Murray Dairy, Subtropical Dairy and NSW DPI. The Dairy Industry Fund supported the Accelerating Farm Business Management Project, the Dairy Business support services Project and Dairy Farm Monitor—all good examples of our industry-government collaboration. Together they leverage the delivery of programs such as Farm Business Fundamentals, Dairy Farm Business Analysis, DairyBase (online tool) and the Dairy Discussion groups.

Our Farm, Our Plan

Our Farm, Our Plan is a priority program that has been designed and developed by Dairy Australia and the Gardiner Foundation to significantly increase the proportion of farmers with effective strategic plans. This will enable farmers to clarify and document their strategic long-term goals, identify and prioritise actions needed, manage uncertainty, mitigate risks and capture opportunities when they present. Our goal is simple:

“By June 2025, all dairy farm businesses are equipped and supported to develop a documented long-term plan and review their progress, at least, annually”.

Over the next three years Dairy Australia will support farmers to put their strategic long-term plans on paper (Plan on a Page) and review their performance at least annually by:

- Reaching 218 NSW dairy farm businesses through workshops, online and 3rd parties;
- Delivering 1:1 support for farmers through four structured follow up touch points over 24 months;
- Building regional delivery capacity in NSW;
- Training and developing NSW Regional Extension Officers, private providers and 3rd party organisation’s staff (State Government staff, Rural Financial Counsellors, processors, banks, accountants, farm consultants, TAFE and tertiary education providers);
- Mapping the ‘farmer journey’ by segment, and developing online tools and resources that supports this.

The provision of 1:1 support over 24 months provides a level of structured follow up not normally seen in agricultural extension programs. It is a significant investment by Dairy Australia and our investment partners that, based on previous programs here and in New Zealand, will embed practice change more quickly. It will also establish a stronger relationship between farmers and Dairy Australia’s regional teams that will see farmers being more informed and benefiting from the value of the range of industry programs available to them. Dairy-dedicated extension, addressing a market failure in the provision of specialist, independent dairy advisory services, would constitute a material intervention by NSW DPI in furthering the prosperity of the NSW dairy industry.

To complete the full Our Farm, Our Plan project, we have flagged the opportunity for the NSW Government to partner with us, in our consortium proposal for the Sector Development Grants in the bushfire recovery program. We are seeking partnership to meet the \$5.8 million full cost of the current three-year project—and consider there is a strong opportunity for the NSW Government to support this work.

4 Capable workforce

The dairy industry has long recognised that people are a fundamental driver of farm business success, and that being able to attract the right people, manage them effectively and provide sustained career and wealth creation opportunities is essential for the long term viability of the industry.

The nature of dairy production is changing. Farms are becoming larger, more farmers are employing staff and farming systems are increasingly more complex and sophisticated, requiring an elevated level of capability, including managerial and technological.

While the number of people employed on Australian dairy farms has not changed overly in the past decade there has been ongoing consolidation of dairy farming businesses, in response to a range of well-documented business pressures, including those outlined in previous sections. While there are fewer farms, herd size is trending upwards (from 93 in 1985 to 272 in NSW in 2019/20) and there is an emerging trend of large farm operations with more than 1,000 dairy cattle. The industry norm is that one full time employee is required to manage 100 cows. Clearly, business expansion hinges in large part on whether there is a capable workforce at hand. Traditionally owner-managers, partners and family members have provided most of the labour on family farms, however 86% now employ staff, an increase of 33% since 2007.

A capable workforce—attracting, supporting, retaining, investing in building industry capacity, improving industry culture—is identified as key to future dairy industry productivity and growth in the Australian Dairy Plan. The challenges in workforce attraction and retention observed over the last two decades do not appear to be easing. Indeed, the complexity of workforce needs only appears to be growing with the

evolution of increasingly complex dairy farming systems, the increasing need for managerial capabilities and uptake of technology.

The dairy workforce crisis is not just about shortages in employee availability, but in capability. Capable people are a long-term dairy workforce attraction and retention goal. We are shifting away from a static 'skills' frame of reference towards recognising that workforce capability requirements need to go far beyond a narrow list of documented 'skills'. Capabilities comprise not only the technical skills and knowledge people have, but also their attributes, attitudes and behaviours. Equally, capable people need to feel engaged, energised and their learning objectives fulfilled, within the context of their professional position. This means access to rich, accessible learning and capability development opportunities. Capable people are resilient people, adapting to the changing and inherently risky world they operate and live in.

While Dairy Australia is investing in a significant program (see Appendix 1, Pillar 2) aimed at addressing dairy workforce attraction and retention goals, there is an ongoing need, now more pressing than ever, for government to partner more effectively with the dairy industry to ensure the education sector is fit for purpose and embedding dairy-relevant skills development and career pathways into its programs. Our submission in July 2020¹⁴ to the Australian Government's *National Agriculture Workforce Strategy* consultation outlines in some detail the plan we have to address the imperative for a capable dairy workforce, including the following examples:

- Our **DairyLearn Partnerships** model, developed to give more dairy workers access to high quality dairy education and consistent, up to date resources developed by Dairy Australia and delivered by qualified educators through an expanded network of providers, including Registered Training Organisations (RTOs), in all dairy regions.
- **DairyPassport**, our new online solution to enable dairy farmers to onboard new staff, manage their farm team across multiple farm properties, linked to key tasks that need to be undertaken whilst encouraging goal setting, career planning and capability development.
- The **Young Dairy Network**, which is coordinated in NSW by Dairy NSW, involving training and development activities specifically targeted at younger farmers and employees and cover a range of areas from technical farming topics through farm business management and leadership.
- The **Dairy Farm Manager Program**, currently in pilot phase, targeting current dairy farm employees in 2iC management roles and future workforce personnel studying an undergraduate qualification. This will include the development of a Graduate Diploma of Agribusiness (Dairy), a Dairy Learning Plan and scholarship opportunities to support tuition.

Following the launch of the new *Dairy Australia Learning and Capability Development Strategy (2020-2022)*, incorporating initiatives such as those outlined above, the dairy industry is well positioned to lead and address, with the right support from government, the challenges of workforce in new ways for 2020 and beyond. Limitations that cannot be overcome without Federal and State government support are evident in key areas of the DairyLearn system. Most specifically, there is opportunity for enhancing dairy education through schools, Vocational Education and Training and University education. Dairy Australia and the Australian Dairy Farmers made seven recommendations in the July 2020 submission referred to above.

5 Adapting to climate change

Australian dairy farming systems need to thrive in a warmer and more unpredictable climate. Drought has thrown into stark relief the effects of climate change on the agriculture industry in NSW.

Higher temperatures particularly in summer, more variable rainfall events, shifting rainfall patterns (lower winter rainfall) and soil moisture decline characterises a climate that is changing in NSW. CSIRO (2016)

¹⁴ The July 2020 Australian Dairy Farmers and Dairy Australia joint submission can be provided upon request.

projections commissioned by Dairy Australia describe the climate predicted in the relevant dairy regions of the state of NSW by 2040 (under a high emissions scenario):¹⁵

New South Wales

The NSW dairy region will warm by about 1.2-2.0°C by 2040 under the high emission scenario, with greatest warming in summer and least in winter. Maximum temperatures increase more than minimum temperatures. Annual total rainfall will continue to have large variability from year to year, with little change in the median by 2040. A small decrease in winter rainfall is offset by a small increase in summer. Due to increases in evapotranspiration, soil moisture declines, with a range of -7 to +2% in summer, -8 to -1% in autumn, -13 to -7% in winter and -15 to -5% in spring.

Sub-tropical (Queensland and northern NSW)

The sub-tropical dairy region will warm by about 1.0-2.0°C by 2040 under the high emission scenario, with greatest warming in spring and least in autumn. Maximum temperatures increase more than minimum temperatures. Annual total rainfall will continue to have large variability from year to year. When averaged over the north and south sub-regions, the median decreases by around 5% by 2040. However, the decrease is about 10% in the south and only 2% in the north. Decreases occur in all seasons in the south, but only in autumn to spring in the north. Soil moisture declines in most seasons, with a range of -1 to +5% in summer, -10 to 0% in autumn and winter, and -6 to -4% in spring.

Murray

The Murray dairy region will warm by about 1.2-1.8°C by 2040 under the high emission scenario, with greatest warming in summer and least in winter. Maximum temperatures increase more than minimum temperatures. Annual total rainfall will continue to have large variability from year to year, superimposed on a median decrease of about 3% by 2040, with a range of -10 to +5%. The decreases occur in winter and spring with little change in summer and autumn. Soil moisture declines, with a range of -7 to +1% in summer, -10 to -1% in autumn, -10 to -4% in winter and -13 to -6% in spring.

The changes described here impact on farm productivity in a range of complex ways. Social, biophysical and economic modelling indicates climate change has negatively impacted dairy productivity by 0.6–0.9% per year since 2000¹⁶ and is a major cause of productivity gains being zero in the past decade.¹⁷ ABARES reports climate change has significantly reduced farm profits across the agriculture sector over the past twenty years.¹⁸ Long-practiced farming systems will have to adapt if not completely transform, requiring the skills of the farmer to increase accordingly. New ideas and innovations will need to be embedded. Climate risk will need to be actively managed in business decisions and on farm in areas such as pasture growth, runoff into dams, viability of shade trees, managing feed, heat stress, pests, weeds, diseases and reproduction. More extreme daily rainfall increases risks for flooding, erosion, water-logging, infrastructure, supply chain and transport (CSIRO 2016).¹⁹

How governments can best help manage climate risk is a live discussion among policy makers. A favourable policy and regulatory environment will need to enable the transformation required on Australian farms.

¹⁵ Hennessy, K, Clarke, J, Erwin, T, Wilson, L and Heady, C (2016). *Climate change impacts on Australia's dairy regions*. CSIRO Oceans and Atmosphere, Melbourne, Australia, 64pp.

¹⁶ Dairy Businesses for Future Climates – National findings (2016) and Murray Dairy results (to be released 2020). Source: dairyclimatetoolkit.com.au/adapting-to-climate-change/adapting-the-dairy-industry.

¹⁷ Dairy Australia, Australian Dairy Farmers, Gardiner Foundation & Australian Dairy Products Federation 2020. *Measurement of profitability on Australian dairy farms: Historical trends and future targets*. Appendix F: Australian Dairy Plan, Melbourne, 18pp.

¹⁸ Huges, N, Galeano, D and Hatfield-Dodds, S (2019). *The effects of drought and climate variability on Australian farms*. ABARES Insights, Issue 6, Dec 2019.

¹⁹ Hennessy, K, Clarke, J, Erwin, T, Wilson, L and Heady, C (2016). *Climate change impacts on Australia's dairy regions*. CSIRO Oceans and Atmosphere, Melbourne, Australia, 64pp.

Recent support from the NSW Government following drought and bushfires is an example of how important short-term relief is to farm households experiencing hardship. The next phase is to build long-term health in ways that promote resilience and improved productivity—there is an ongoing role for government, in partnership with industry, in this phase.

Following the summer bushfires, the NSW Government has set aside \$140M for bushfire recovery, specifically covering five agricultural industries including dairy. Dairy Australia has formed a consortium with the Dairy Research Foundation at the University of Sydney and NSW farm bodies to develop a proposal for a wide-reaching program of investment (research, development, and farm extension) aimed at driving productivity and boosting dairy farm business resilience in NSW. To date, we have not heard whether the consortium has been a successful contender for the Sector Development Grant program announced as a part of the NSW bushfire recovery. The total funding being sought through the grant is \$10M. This is to match the total cash & in-kind contributions of the partners.

Timing is critical. Government needs to recognise the urgency of required adaptations to farming systems. Productivity underpins farm profits. The dairy industry has achieved little in the way of productivity gains over the past decade and this is being further seriously eroded by climate change. Partnership between industry and government is critical to boost investment in the drivers of productivity and in improving farm business management skills such that the challenge can be met and the NSW agriculture sector, including dairy, can thrive.

6 Conclusion

Outlined in this submission—from Dairy NSW, Murray Dairy, Subtropical Dairy and the umbrella organisation Dairy Australia—is an overview of the colossal challenges that dairy farmers face in NSW and the key drivers of profitability. These are essential components of a thriving dairy industry going forward. There is an urgent need to rapidly expand RD&E programs that address key profit drivers, namely: **farm business management skills, access to skills and capabilities and farm system adaptation to climate change** to successfully manage volatility and risk into an inherently uncertain future.

Not addressed explicitly in this submission is the need for a stable and enabling policy environment. Government policy plays an undeniable role in the extent to which the dairy sector will be viable into the future. While the submissions of the peak industry bodies will address the key policy issues relevant to this inquiry, there is no doubt that Dairy Australia's investment will be enlivened if policies around access to water, energy and other farm inputs are optimal and markets are operating well, if nutrition policy and dietary guidelines adequately recognise the inherent value of dairy products, if land use planning and environmental protection regulations facilitate the development of farm systems resilient to climate risk and if commercial arrangements through the dairy supply chain are fairly governed.

While Dairy Australia undertakes policy research, market analysis and industry-level domestic and international marketing and promotion activities, the majority of our investment is in generating and extending scientifically robust knowledge, innovation and insights critical to driving profitability and sustainability on farm. A range of these insights have been outlined here, where they are relevant to dairy in NSW.

Stronger returns on investment are needed to enable farmers to adapt to and thrive in changing conditions. Dairy Australia, through farmer levies, cannot achieve what is needed alone but has clearly articulated the pathway and has deep on-the-ground knowledge—through its regional development programs such as Dairy NSW—about how to deliver what farmers most need. Partnership with government, along with other industry stakeholders, will be critical in driving profitability and sustainability in the pressing timeframe required to secure a resilient food supply and resilient rural NSW communities.

To deliver on the three profit drivers outlined in this submission, we make two recommendations to the Portfolio Committee:

1. That the NSW Government nominate the dairy consortium proposal for a NSW Bushfire Recovery Sectoral Development Grant. This proposal aims, through ten key projects, to accelerate farm recovery and build business resilience through enhancing productivity in the dairy system, underpinned by enhanced capability of its people. This includes the Our Farm Our Plan business management and Dairy Passport people management programs, along with programs focused on feedbase and herd efficiency in a changing climate.
2. That the NSW Government reignites support for specialist, independent, dairy-focused extension expertise within the NSW DPI, to work with Dairy NSW, Subtropical Dairy and Murray Dairy to respond to a lack of skilled service providers of 1:1 dairy farm system and farm business management advice.

Appendix 1

GOALS	OUTCOMES
<p>1</p> <p>MORE RESILIENT FARM BUSINESSES</p> <p>Farm businesses that are more profitable, resilient and innovative in managing price and cost volatility</p> <p>a Business planning that leads to better decisions and sustained success</p> <p>b Clear and understood drivers of dairy farm profitability and productivity</p> <p>c Expanded range of risk management tools for price and cost volatility</p> <p>d Innovation in finance that increases access to capital for expansion and new entrants</p>	<p>2</p> <p>ATTRACT AND DEVELOP GREAT PEOPLE FOR DAIRY</p> <p>Attract great people to the dairy industry, build their capability and careers, and foster a safe work culture</p> <p>a Greater awareness of Australian dairy as an attractive industry with rewarding careers</p> <p>b Clear and supported skill development and career pathways</p> <p>c Access to capable and skilled farm employees and service providers</p> <p>d Support farm businesses and their service providers to get the basics right</p>
<p>3</p> <p>STRONG COMMUNITY SUPPORT FOR DAIRY</p> <p>Enhanced trust and value in the Australian dairy industry, its farmers and products</p> <p>a The Australian dairy industry is trusted and accepted by the community</p> <p>b Australian dairy is valued for superior health and nutrition benefits</p> <p>c The Australian dairy industry is committed to animal wellbeing</p>	<p>4</p> <p>THRIVE IN A CHANGING ENVIRONMENT</p> <p>Profitable farm businesses that adapt to the changing natural environment and provide good stewardship of resources</p> <p>a Greater ability to adapt to changes in the natural environment</p> <p>b Efficient and profitable use of land, water, carbon and energy resources which nurtures and sustains the natural environment</p> <p>c Proactive action to reduce global warming and greenhouse gas emissions</p>
<p>5</p> <p>SUCCESS IN DOMESTIC AND OVERSEAS MARKETS</p> <p>Improved access to high-value dairy markets, backed by trusted market insights and a favourable regulatory and policy environment</p> <p>a Australian dairy is valued around the world for its premium products</p> <p>b A favourable policy and regulatory environment</p> <p>c Access to trusted market insights that inform decision making</p>	<p>6</p> <p>TECHNOLOGY AND DATA-ENABLED DAIRY FARMS</p> <p>Inspire more agile and responsive dairy businesses through greater integration of technology and data</p> <p>a More flexible and agile dairy production systems</p> <p>b Greater use of high-value technology on farm</p> <p>c Connected dairy production systems utilising multiple data sources to enhance decision making</p> <p>d Accelerated genetic progress in feedbase and animal breeding</p>
<p>7</p> <p>INNOVATIVE AND RESPONSIVE ORGANISATION</p> <p>An organisation that is farmer-focused, with talented people that embrace innovative thinking and decisive action</p> <p>a We have a farmer-focused service delivery model</p> <p>b Our culture of learning and innovation, values and ways of working deliver success</p> <p>c Our infrastructure, resources and processes allow us to be informed, agile and responsive</p> <p>d We have effective and transparent management of resources</p>	

Figure A1. Dairy Australia’s agenda for contributing to a profitable and sustainable national dairy industry, as outlined in the organisational Strategic Plan 2020-25.