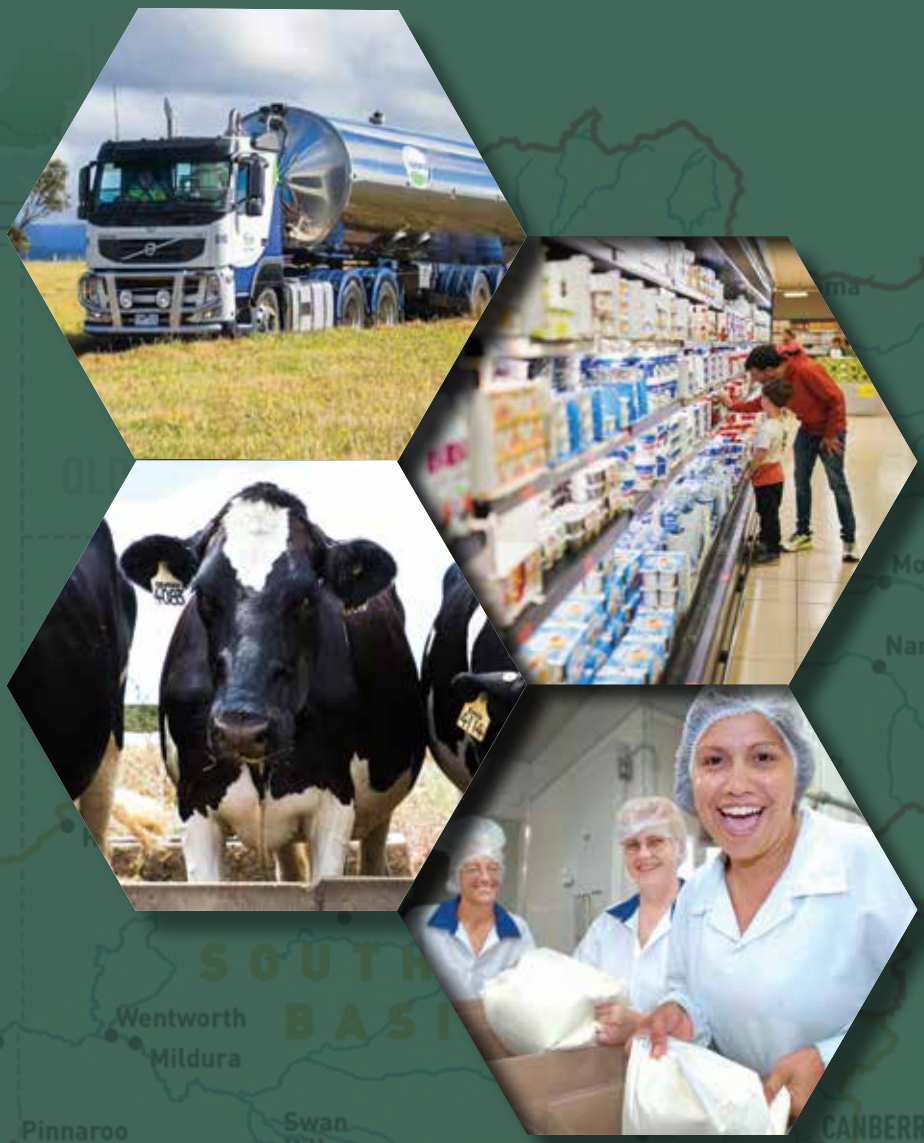
MURRAY DARLING BASIN DAIRY INDUSTRY 2025 STRATEGIC PLAN



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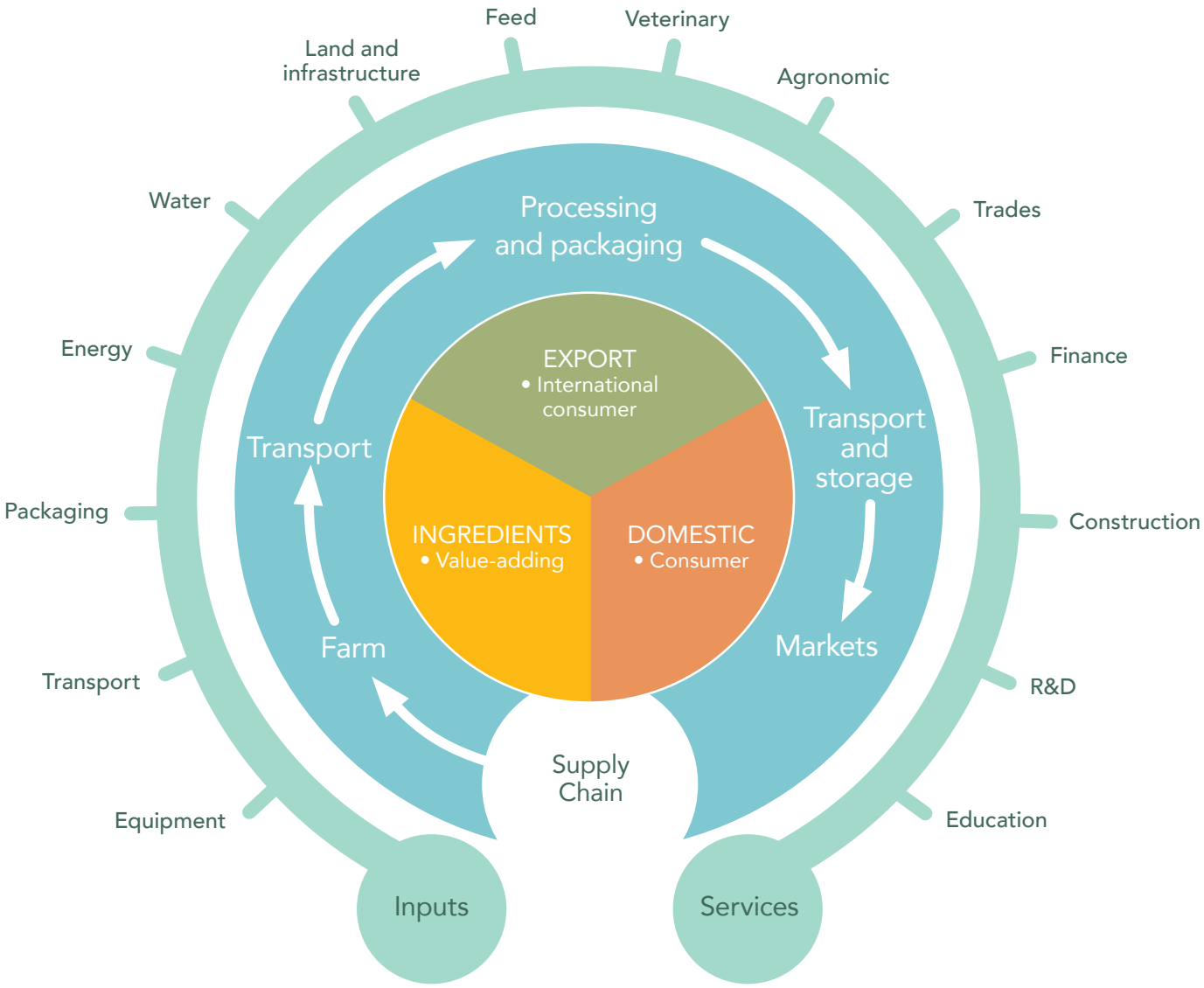
OUR VISION FOR DAIRY IN THE MURRAY-DARLING BASIN

The Murray-Darling Basin's end-to-end dairy supply chain working together to drive domestic and international competitiveness and the profitability of the entire Australian dairy industry.

Through trusted data, well defined priorities and a shared vision of the future, the sector enables local communities, service and support businesses, education providers, researchers and other agricultural sectors across the MDB to succeed and prosper as partners in the sector's success.

ILLUSTRATION OF THE DAIRY SUPPLY CHAIN



The Murray Darling Basin produces more than $30 billion worth of food and fibre every year, is home to 8,400 irrigated agriculture businesses and 40% of all Australian farms. Dairy is a significant contributor but its importance extends well beyond its economic output.

[1] https://www.mdba.gov.au/basin/why-murray-darling-basin-matters/our-reliance-basin-water

FOREWORD

It has been a privilege to chair the Steering Committee undertaking the ambitious challenge of developing a strategy to describe what's needed to secure the future for the dairy industry in and across the Murray Darling Basin.

I would like to thank the enthusiastic and generous contributions from our steering group participants, and for their engagement with their counterparts in government, industry and communities across the MDB.

Over the course of the journey, it has become apparent that we are at the starting blocks in truly understanding the critical and strategic importance of dairy in the MDB.

The volumes of milk produced in the MDB vastly underestimate the MDB dairy supply chain's strategic importance to the entire Australian dairy industry, to other ag sectors that share the MDB and its lifeblood of irrigation, and to communities and stakeholders across the MDB.

Developing this strategy has provided a forum and a lens to explore the increasingly diverse and adaptive approaches to production, and the dynamic and diverse mix of dairy processing and value adding. The MDB's concentration of dairy processors deliver a product mix that is well beyond traditional milk, cheese and butter, with exciting ventures and product innovations in emerging areas including human health and wellbeing. As this strategy recognises, ongoing product research and innovation is vital to meet constantly evolving domestic and international consumer tastes and preferences.

This strategy is also a call to action to the communities, service providers and local governments that wrap around the MDB's dairy supply chains. Dairy needs its local partners in new and different ways – especially in growing, attracting and retaining the industry's increasingly skilled and professional workforce.

The golden thread evident in the journey and the strategy, is the importance of MDB dairy sector being able to describe its future. No one can tell this story better than the industry.

The absence of consistent and comparable data and the lack of networks and forums to continue the conversations that have begun as part of this strategy, illustrate the fundamental needs moving forward.

This strategy does not attempt to pick winners at a farm or processor level, it also highlights the resilience and strength that comes from multiple subregions across the MDB working together and with the broader industry. In short the strategy is focused on what is required to deliver a profitable dairy supply chain in the MDB that is continuing to contribute to the prosperity and success of its regions, its partners and the national economy.

Lindy Nieuwenhuizen

Chair of Murray Darling Basin 2025 Strategic Plan Steering Committee
and CEO of Committee for Greater Shepparton

KEY INSIGHTS

Australian Dairy needs the Murray-Darling Basin

The heavy concentration of dairy processing and value adding in the Murray Darling Basin anchors the entire Australian dairy industry and its domestic and export supply chains.

This location is not by accident – it reflects the region's reliable production volumes and its geographic connectivity to all major markets and export ports.

- MDB milk production is more consistent, stable across the year, and rebounds more quickly than most other dairy production regions. This is attributed to reliable irrigation, the growing investment in climate-resilient dairy operations, and the region's access to local grain and fodder supplies. The more stable base load underpins dairy processors' ongoing investment in the region and employment throughout the dairy supply chain.
- The MDB's value adding and processing capacity is strategically located on the national freight network making it ideally placed to receive additional milk volumes from production areas within and outside the Murray Darling Basin, and to move processed product east coast domestic and export markets.

Irrigation (and irrigation network users) Needs Dairy

Historically, dairy has provided stable, large volume demand for irrigation water that is spread across the irrigation season. This provides critical mass that boosts the system efficiency of open channel networks which benefits smaller volume (horticulture), and opportunistic irrigators (livestock, cropping) and creates valuable opportunities for non-irrigation users for example flushes and piggy-backing of environmental deliveries.

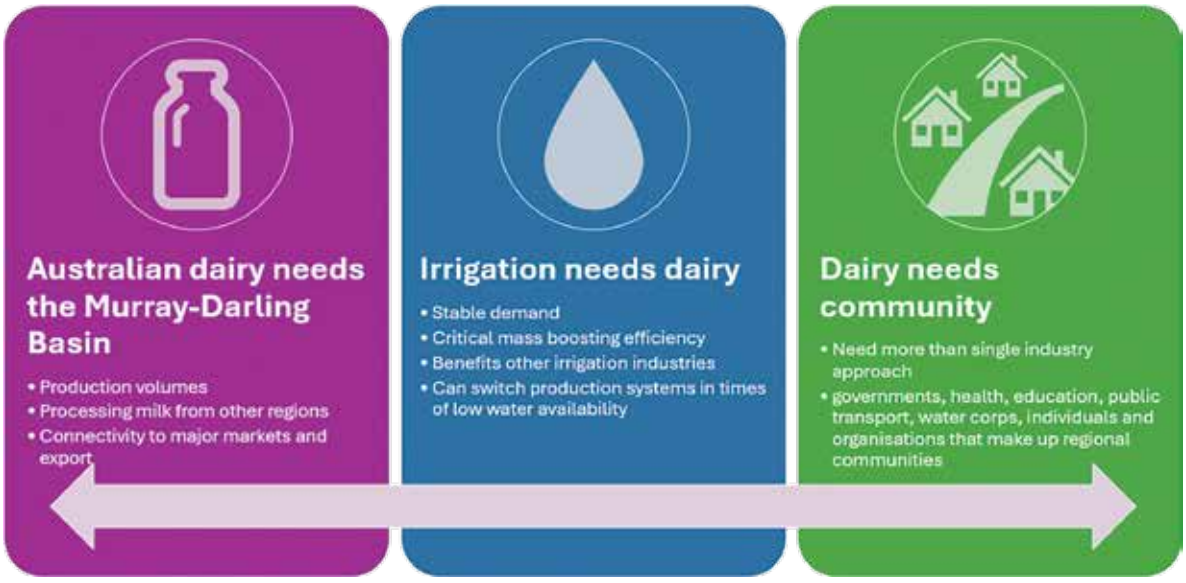
In seasons of low water availability, dairy is the highest value commodity that can switch out of irrigation and maintain production through flexible and adapted farming systems using a mixture of grazing and non-grazing management strategies. As a result, dairy can release water for use by other sectors including horticulture and cropping while sustaining its economic and social contribution to the local and national economy.

If dairy irrigation demand declines, the viability of the entire irrigation networks are in jeopardy and with it, the viability of other agricultural sectors. This will also impact non-irrigation system users including the environment and local communities.

Dairy Needs Community

When considering the community supporting dairy, this plan takes a holistic view and so includes government, health, education, public transport, water corporations, as well as the many and varied individuals and organisations that create the fabric of regional communities and regional living.

Dairy has and remains the backbone of many regional communities and regional cities. This is particularly true of dairy processing where the factory often defines the town skyline and the identity of the local community. The local communities' economic and social success fluctuates with the profitability of producers and processors, and processors in particular are keenly aware of the role they play in their community – and the legacy they create if circumstances demand retirement of sites.



KEY INSIGHTS

The dairy industry provides year-round demand for services and workforce. It's use of irrigation and energy networks, along with the industry's year-round supplier and industry payments, smooths the volatility compared with less-frequent payment cycles of co-located agricultural sectors and commodities. In doing so, dairy enhances the resilience of local communities. In short unlike annual, seasonal and more opportunistic trading commodities, (including tourism) dairy injects 'milk cheques' into the local economies each and every month.

However, this one-way dependence is changing. As this strategy outlines, the dairy sector faces challenges that cannot be solved at a farm, processor or even industry level. Energy, water, land use, connectivity (digital and transport), workforce and even housing are issues shared with other sectors, co-located industries and are defined by regional, state and national policy settings.

Working on its own the dairy industry can have an impact, but it is increasingly apparent that to move at the speed and scale required, the industry needs its community stakeholders to lead the delivery of critical services and infrastructure that include:

- Providing housing and lifestyle (health, education, transport) to attract skilled professionals for farm and manufacturing roles, and the trades and services that will be required by more sophisticated technology and automation.
- Enabling the growth of local energy generation, storage and transmission to support on farm and manufacturing needs.
- Providing the training and development pathways to meet future workforce needs – particularly in trades and services that are important but not unique to the dairy sector.

A critical step in empowering community stakeholders, is for the dairy industry in the MDB to articulate what it is and what it expects to become over coming years and decades.

ABOUT THIS STRATEGY

This is the first time a strategy has taken a whole of supply chain view, exclusively focused on the MDB (inland) production and processing. The process began with the Steering Committee engaging ACIL Allen to review the many existing national, state, regional and industry strategies through the lens of the MDB region. The draft plan was then shared across many organisational and industry networks seeking further input and feedback before RMCG was engaged by the Steering Committee with support from Gardiner Foundation to expand on the strategies and actions identified through the earlier work.

The development of this strategy coincided with a number of other important and related work and therefore has either leveraged or aligned with those areas of work. In particular it has:

1. Supported the regional consultation process of Dairy Australia in developing their next strategic plan
2. Supported the regional consultation into the "Dairy Industry Competitiveness" prepared for Dairy Australia by Marsden Jacob Associates, Fiona Smith, and Farmanco
3. Linked to Murray Dairy's planning process
4. Engaged with Dairy Australia's water reference group work
5. Coincided with the development of East Aus Milk Strategic Plan
6. Provided information for the Victorian State Government interdepartmental task force

Further, it was developed alongside the Gippsland Dairy Industry Strategic Plan generating synergies across the two regional planning process.

The Steering Committee

This plan was commissioned by the MDB Dairy Industry Steering Committee (a group formed for the sole purpose of developing the plan) with administrative and funding support from Gardiner Foundation and supporting funding from Murray Dairy, Goulburn Broken Catchment Management Authority, Noumi, ACM, Saputo and Fonterra. This plan aims to identify an improved whole-of-industry strategic approach to enhance the future prosperity for dairy in the Murray-Darling Basin.

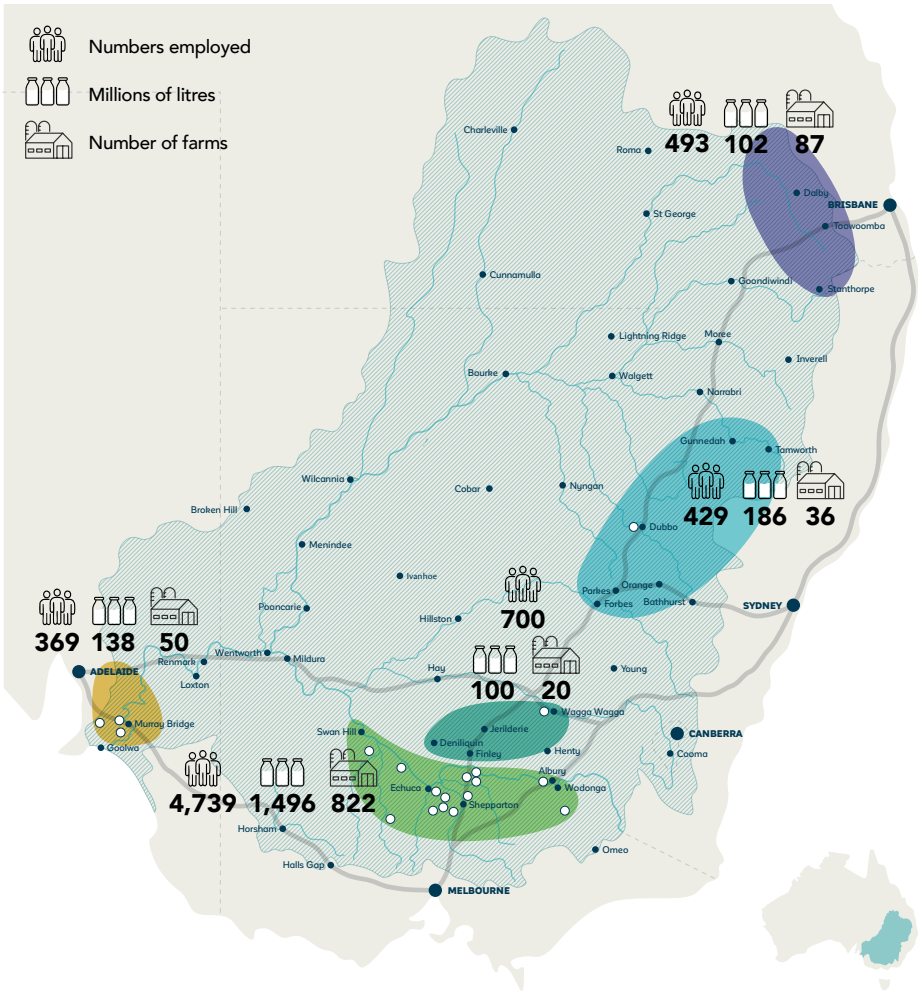
Members of the steering group were asked to not only bring their own knowledge and expertise, but to also support engagement for the purposes of seeking input and feedback with peer organisations and agencies across the basin footprint.

Members of the Steering Committee include Linda Nieuwenhuizen (Chair and CEO Committee for Greater Shepparton, Jenny Wilson (General Manager, People and Community Development, Gardiner Foundation), Ann Gardiner (Australian Dairy Farmers), Rachael Napier (Chair – Murray Dairy), Andrew Tyler (Farmer representative), Jason Limbrick (ADPF and CEO, ACM), Andrew Curtis (CEO – SA Dairy Farmers Association), Amy Fay (Executive Officer, Murray Dairy), Carl Walters (CEO, Goulburn Broken CMA), Chris Nicholson (Project Coordinator, Goulburn Broken CMA), Geoff Turner (Executive Officer – Murray River Group of Councils), Karl Ellis (Economic Sustainability and Competitiveness Manager, Dairy Australia), Mark Bailey (Manager Water Resources, Goulburn-Murray Water) and Tim Russell (Manager Strategy Development and Regional Planning, Regional Development Victoria).

INDUSTRY SNAPSHOT

Milk production in the Murray-Darling Basin

The dairy supply chain, from farm inputs to farm and onto processing and export are the backbone of many communities and the economy across the Murray-Darling Basin.



DAIRY REGIONS 2022/23:

South East QLD

Milk Prod million litres	102
Number of farms	87
Number employed	493

Inland NSW

Milk Prod million litres	186
Number of farms	3687
Number employed	429

Riverina

Milk Prod million litres	100
Number of farms	20
Processors	220
Number employed	700

Northern VIC

Milk Prod million litres	1,496
Number of farms	822
Processors	11
Number employed	4,739

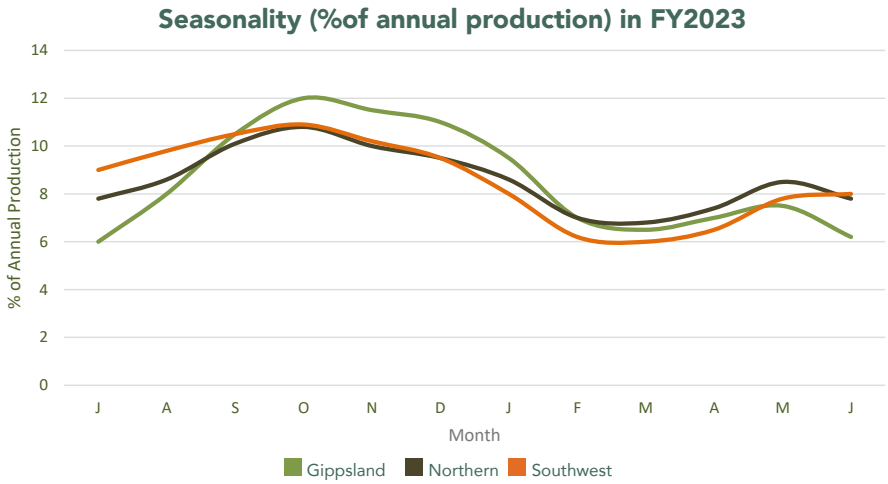
SA

Milk Prod million litres	138
Number of farms	50
Processors	1
Number employed	369

Processing Plant
Murry-Darling Basin
Key Freight Rout

Irrigation underpins supply chain certainty

The MDB's irrigation-based dairy production regions continue to show more stable and consistent milk production and greater capacity to respond to seasonal conditions and extreme events, this in turn underpins the investment by downstream processors and value adding industries. The reduced volatility reflects farm operators access to reliable volumes of high-quality feed grown on farm and/or sourced from irrigated cropping within the Murray Darling Basin.



DAIRY PROCESSING IN AUSTRALIA

The Australian dairy manufacturing sector is diverse and dispersed with more than 140 individual locations ranging from small boutique operators often processing their own milk, through to highly sophisticated and increasingly automated large volume sites. Alongside specialist products, there is a trend towards specialist processing capabilities that include production of nutritional supplements and nutraceuticals that build on the micro-components of milk.

Processing 'post codes' range from tourism hamlets to sophisticated warehouse and value adding operations in state capitals including Brisbane, Melbourne and Sydney. For this reason, the dairy sector's year-round economic and employment impact extends well beyond regional Australia and the MDB.

In addition to scale, processing sites are also differentiated by their product lines. Region specific characteristics, including climate and production profiles, dictate the end markets targeted by processors. The Southern region (which includes the Gippsland, Murray, Western Victoria, South Australia and Tasmania regions) mostly manufactures products for export (primarily cheese and milk powders) in addition to some products for domestic markets. The Northern and Western Australia regions mostly produce fresh drinking milk and export only a small proportion of total output .

Around 30% of Australia's dairy production is exported however 25% of dairy consumed in Australia is now imported. This results in dairy manufacturers being highly exposed to international markets and competing with the large dairy producing regions such as the US, EU and NZ. Australian processors must be price competitive in both the international and domestic markets with the major local production cost drivers include

- Access to labour (and associated housing).
- Energy – both cost and reliability.
- Logistics and transport efficiency.
- Innovation and investment in a product mix in line with changing demand.
- Continued access to milk close to processing plants and the costs of transporting raw milk to maintain site utilisation.

Dairy processing in the Murray-Darling Basin

The MDB is home to more than 40 dairy processing facilities and this includes multiple large volume processing sites.

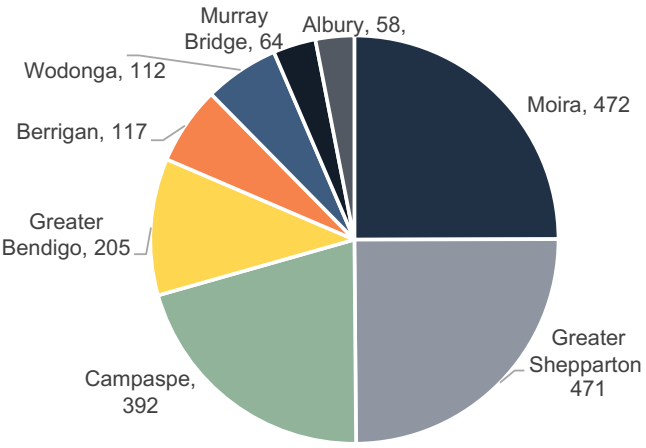
Australia's 'Big 4' dairy processors are Saputo, Fonterra, Lactalis and Bega Cheese, who collectively account for around half of industry revenue and receive the bulk of Australia's raw milk all have operations in the Murray Darling Basin primarily in northern Victoria.

In addition to processing milk produced locally, the Murray Darling Basin's sites also process volumes of milk freighted from other production regions notably Gippsland and the southwest of Victoria. Northern Victoria is well located to service national consumer and export markets however the transport of raw milk represents a significant cost to processors that is continuously assessed against facilities operating below efficient utilisation levels, driving up per-unit costs and putting pressure on margins. The industry's investment in processing infrastructure in the MDB over the past decade coincided with local MDB milk production declining by approximately 35% since 2012.

Dairy Australia estimates at least 15% of the total liquid milk consumed in New South Wales and 11% of liquid milk consumed in Queensland is processed in the Northern Victoria, with 85% of Australia's exports passing through the Port of Melbourne.

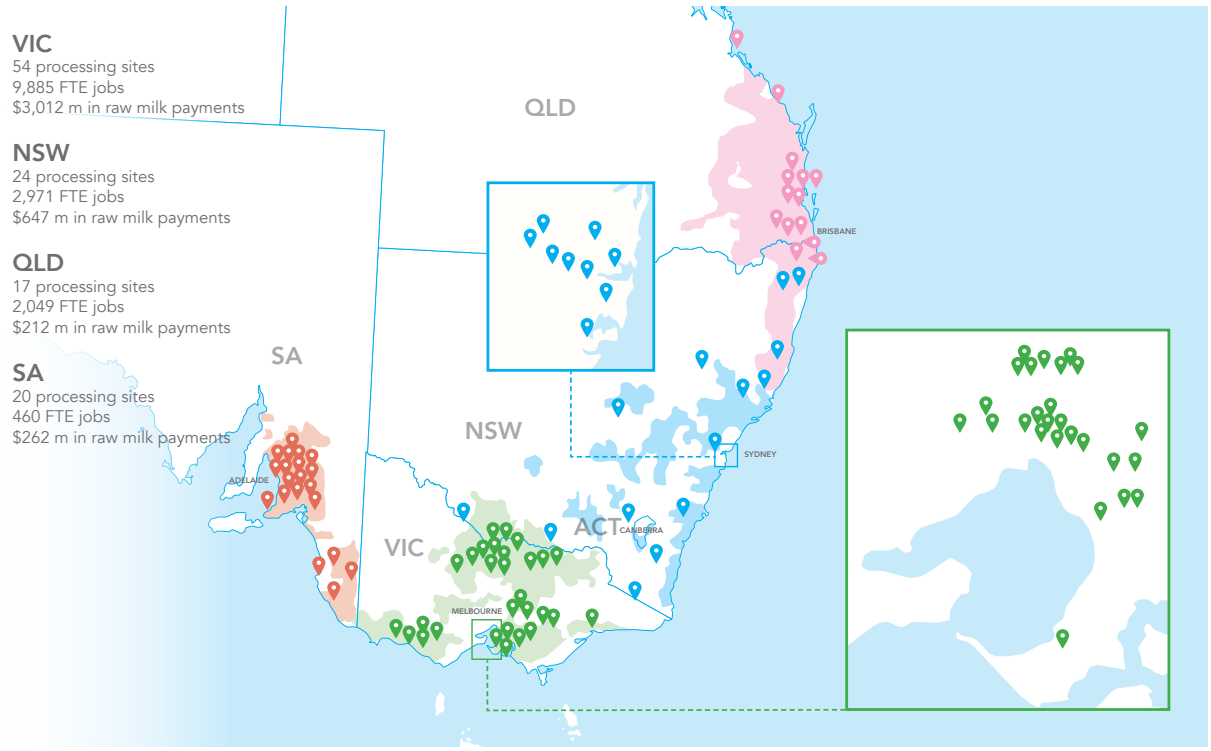
The MDB dairy processing sector is a major local employer, however its employment and hence economic impact extends well beyond the footprint of the MDB. Metropolitan LGAs of Casey, Brisbane, Dandenong, Hume, Wyndham Whittlesea, Monash and Knox all appear in the list of LGAs with the largest number of people employed in dairy processing.

Employment in dairy processing in largest eight MDB LGAs - Total employed - 1,891

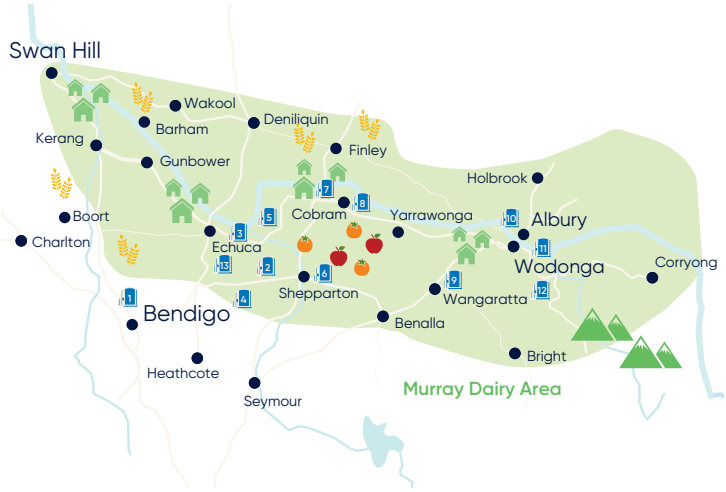


[2] NSW Dairy Industry Situation Analysis, October 2020, NSW Department of Primary Industries

DAIRY PROCESSING IN AUSTRALIA



Australian diary processing locations and summary statistics. Note that processing locations as at 2019; employment figures refer to 2020-21 average and raw milk payments refer to 2019-20.[3]



1 Lactalis Australia (Bendigo)
2 Fonterra Australia (Stanhope)
3 Kyvalley Dairy (Kyabram)
4 Tatura Milk (Tatura)
5 ACM (Girgarre)
6 Noumi (Shepparton)
7 Bega Cheese (Strathmerton)
8 Saputo (Cobram)
9 Milawa Cheese Co. (Milawa)
10 Riverina Fresh (Albury)
11 Saputo (Kiewa)
12 Gundowring Ice Cream (Gundowring)
13 Goulburn Valley Creamery (Kyabram)

Milk Processing location in the Murray Dairy Region[4]

Dairy processors in the community

Dairy processors recognise their well-established role in local communities. They provide year-round employment, and demand for professional and trade services and as such bring increasingly sophisticated professional and technical roles into the community. Processors are frequently the corporate citizen behind community services and infrastructure that range from sports clubs to community groups and facilities.

According to the DAFF Agricultural Commodities Report June 2024, the Gross Value of Agricultural Production across Australia is forecast to finish at $84 billion in 20024/25, with milk production making up $5.6 billion, and the MDB region's contribution $1.12 billion at farmgate. Combined with the multiplier effect of manufacturing this underscores its importance of dairy to the regional economy.

The LGAs of Campaspe, Moira and Greater Shepparton in northern Victoria has one of the highest concentrations of dairy processing anywhere in Australia. The region's manufacturing sector generates $5.5 billion annually, employs more than 6,200 people and injects more than $500 million in salaries and wages into the local economies. Food and grocery manufacturing represents more than 60% of this activity and this is dominated (more than 52%) by the dairy industry.

[3] Source: Dairy Australia, Deloitte Acccess Economics estimates based on ABS employment data, ABS
[4] Dairy in the Basin – Delivering for Dairy – Dairy Australia 14th Septebmer 2023- V2

MILK MOVEMENTS TO AND FROM THE MURRAY-DARLING BASIN

The MDB's dairy processing capacity plays a key role in balancing milk solids across all production regions. The more regular supply of milk allows processors to manage production and use infrastructure more efficiently throughout the year.

Increasingly, fresh milk is transferred between dairying regions for processing. Currently, surplus milk from Gippsland and Western Victoria is transferred to milk factories in Northern Victoria for processing. It's also estimated about 250 to 300 million litres of milk have been transferred from the MDB to meet processing needs in other states, illustrating the interconnectivity of dairy regions.

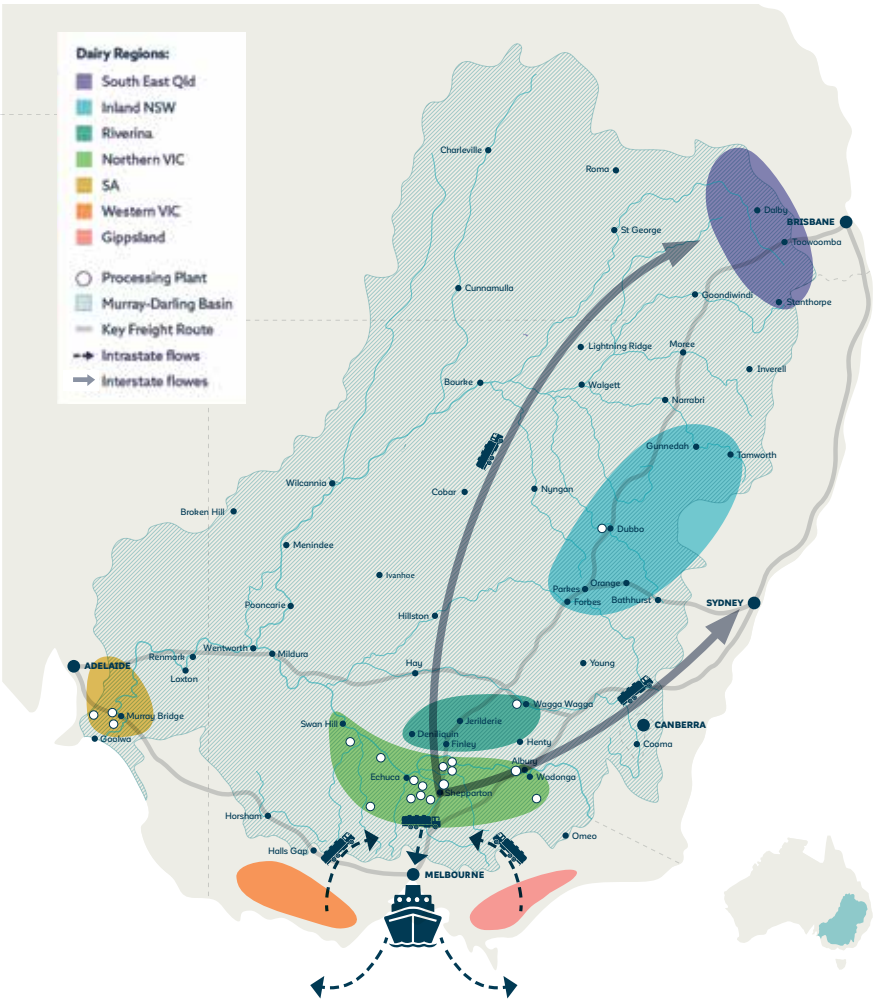
The freight industry supporting the Australian dairy industry is estimated at around $890 million annually supporting the movement of raw and processed product at the various stages of the supply chain. (Case study Appendix I)

In the "Implications and issues for Australian Dairy Stakeholders of Domestic Raw Milk Pool Trajectories to 2030" prepared by Fresh Agenda, it was reported that milk movements in 2023 were influenced by the mismatch between production and manufacturing capacity.

Fresh Agenda (2023) identified that:

1. The year-round deficit of milk to meet the processing demand in SE Qld is met from Nth and Central NSW.
2. The net deficit in Central NSW is met from Nth Victoria
3. Gippsland's surplus milk in excess of regional capacity is hauled to Nth Victoria (cheese)
4. South Australian milk is moved into West Vic and vice versa depending on seasonal availability
5. The surplus in milk West Vic (depending on the contractual demand for cheese) is hauled to Nth Victorian cheese plants In the same report, Fresh Agenda modelled three milk production scenarios through until 2030. In the mid case – Scenario 2 – it was forecast that 726 ML and 355 ML would be transferred from Gippsland and Western Victoria respectively to be processed in Northern Victoria.

   This movement of milk highlights the importance of the MDB and particularly northern Victoria as strategic processing hub.



DRIVERS OF CHANGE IN THE MURRAY-DARLING BASIN

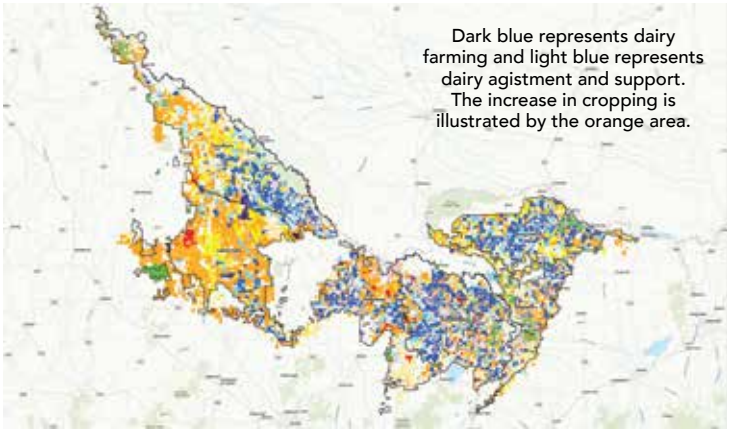
The Australian agricultural landscape is constantly evolving, with all sectors, including irrigated dairy, experiencing ongoing transformation.

Beginning with the deregulation of domestic grains market in the 1980s that unlocked feed grain opportunities for dairy producers, there has been a steady succession of deregulation with stockpiles, single desks and cooperative marketing arrangements disappearing from Australian agricultural sectors, coupled with a floating dollar.

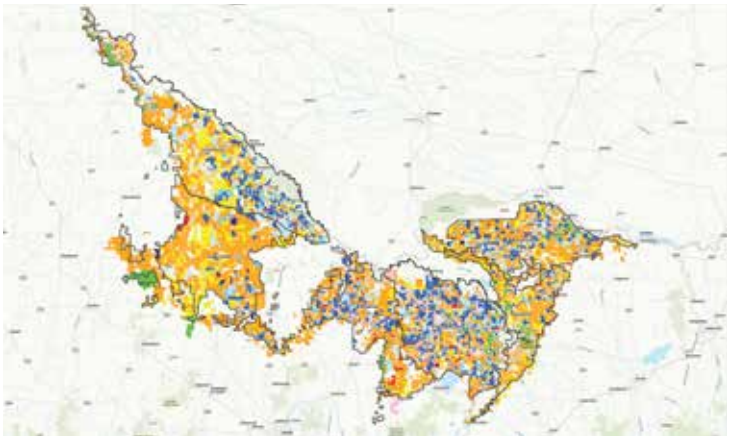
Across much the same period, inputs including energy, water, and fertiliser markets have been deregulated in varying forms, while previously government delivered R&D, extension services, training and business advice are increasingly delivered by the private sector.

While these changes have impacted all dairy regions, the MDB's diverse mix of agriculture has allowed the MDB dairy industry to realise significant opportunities that are evident in today's feed regimes, land use and workforce.

The response from producers and processors has not been uniform with businesses pursuing different models and strategies from farm, land and water ownership to feed rations and workforce, however the net impact is evident in quite stark changes in land use.

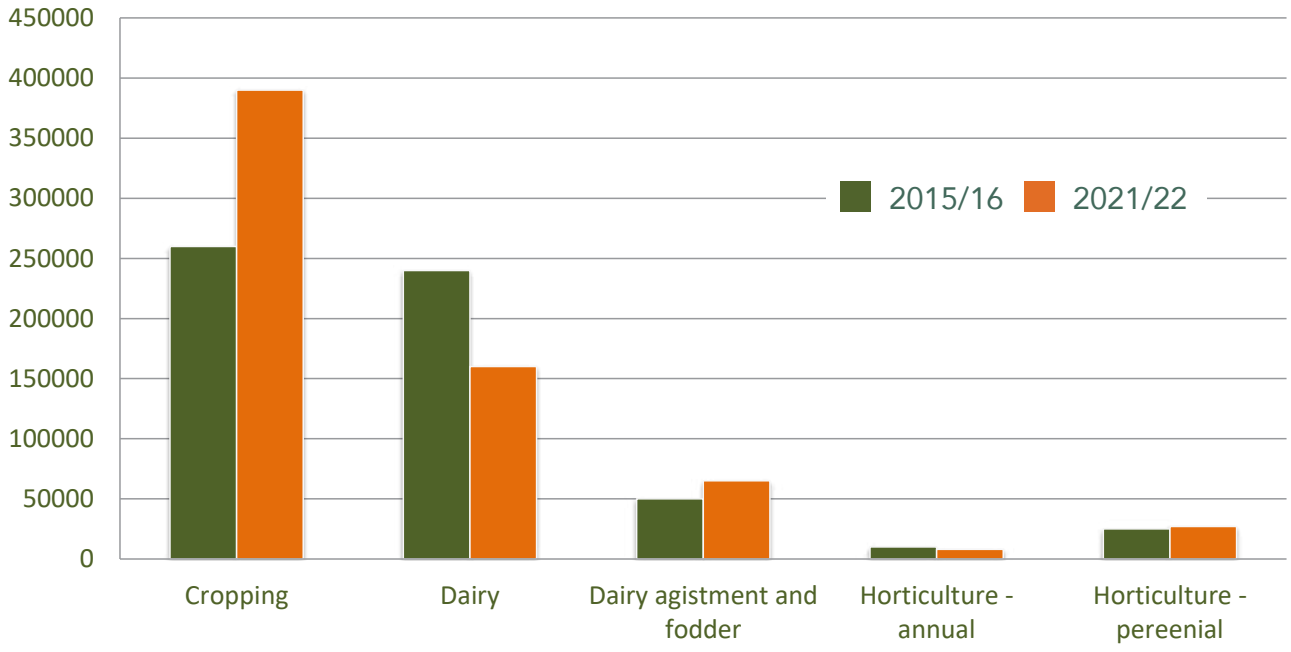


Land use in the GMID
RILWUM Land use 2015-2016



Land use in the GMID
RILWUM Land use 2021-22

Change in Land Use - Goulburn Murray Irrigation District (hectares)



DRIVERS OF CHANGE IN THE MURRAY-DARLING BASIN

In more recent years, the rate of change within the irrigated dairy industry has accelerated in response to: government policy reforms (and particularly those related to water management), climate volatility and change, rapidly advancing technology, emerging and evolving consumer preferences, and increasing commodity market volatility.

Drought and water policy reforms have driven water efficiency and sustainable water use practices. Climate variability and climate change are impacting production cycles, resource availability and efforts to improve the comfort of livestock through shelters and shade. In response there has been a steady trend towards more refined risk management strategies and practices to buffer the impacts. At the same time, fluctuating commodity markets have introduced additional layers of uncertainty, compelling the industry to adapt swiftly to maintain viability and competitiveness including product diversification, innovation and access to new markets.

While other dairy regions share many of the same drivers as those in the MDB, the addition impacts of water policy, reduced water availability, climate change and the move to increased intensification amplifies the impact, and adds complexity to business planning. The combination of international markets, natural disasters and climate, and government policy are reshaping irrigated dairy in the MDB as well as the processors and communities that rely on the region for milk supply and employment.

Drivers of change in the Murray-Darling Basin

DRIVER	ELEMENT	DAIRYING IN THE MDB
Climate & natural resources	Climate change	Adapting to a changing climate with reduced water availability, more erratic weather patterns and increased frequency of extreme weather events will be ongoing. For communities, comprehensive risk management strategies, including resilient infrastructure and emergency response plans, will be important. Additionally, fostering community preparedness through robust infrastructure and climate resilience education will support collective response efforts.
	Water	Water policy reforms have significant implications for the dairy industry and its surrounding communities, driving a shift towards more efficient and sustainable water use practices. The dairy industry has already made large and innovative changes in response to these policies, including adopting efficient irrigation technology and infrastructure and selecting crops and pastures with higher water use efficiency. Dairy processors continue to invest in more water efficient processes including waste water reuse.
	Environmental, social and governance	Integrating Environmental, Social, and Governance (ESG) principles into the dairy industry significantly enhances sustainability and community well-being. Environmental responses include promoting biodiversity and transitioning to renewable energy sources. The Dairy Industry Sustainability Framework provides a structured approach to achieving these goals, emphasising the need to share costs along the supply chain and with consumers and communities. Climate reporting will become mandatory for large companies in 2025.
	Circular economy	The concentration and colocation of production, processing and service sectors (full supply chains) creates ideal circumstances for locations across the MDB to progress circular economy opportunities that can benefit the broader dairy industry. Focus on scope 3 emissions and full supply chain waste targets will require engagement and collaboration with broader stakeholders.

DRIVERS OF CHANGE IN THE MURRAY-DARLING BASIN

DRIVER	ELEMENT	DAIRYING IN THE MDB
Climate & natural resources	Energy transition	The reliance on power (electricity) will increase with increased automation and intensive farm systems. This will require improved network reliability, storage, distribution and transmission. The manufacturing sectors' reliance on gas presents an immediate threat to international and domestic competitiveness. Across the MDB there are multiple locations with a concentration of diverse industry that may provide opportunity for collective or shared solutions between dairy and non-dairy stakeholders and manufacturers.
	Food security	Food security is increasingly becoming a topic of importance on the national agenda. The reliance on access to irrigation and supporting services is key to the ongoing production of important dairy products.
Research, innovation & technology	Research and development	Research, innovation, and technology are crucial for the dairy industry's future, necessitating prioritised investments based on local input to address emerging challenges. The commercial sector drives advancements in technology, genetics, and machinery, while public investment should complement these efforts, filling gaps and adding value. Emphasising adoption and skills development is essential to ensure these innovations are effectively utilised. Imported automation, energy and other systems will require on-staff skills to install and maintain. Imported automation, energy and other systems will require local service skills to install and maintain
	Agtech	
	Adoption	
People & communities	Workforce	Structural changes are occurring across industries and regions, demographic shifts and long-term trends underpin changes. In addition, roles within the industry are evolving with an increasing use of technology. Ensuring that the industry has the skills for the future is critical and that training and education align with these needs. There is also a need for the industry to continue to attract new entrants and ensure their experience results in a high level of retention. Creating careers and opportunities are key to supporting this retention effort.
	Education and training	
	Housing	The 2020/21 report entitled "Housing in Australia's Dairy Regions" prepared by the Regional Australia Institute highlighted the shortage of housing in all dairy regions for both the rental and homeowner markets. In addition, during this Covid period, property prices for regional housing significantly increased making it more difficult for potential homeowners. Larger farms, more intensive operations signal the need for increased off farm accommodation options, and for all career levels including farm managers and highly skilled professionals. Housing and the associated lifestyle offer is key to manufacturing and larger farms securing the contract and permanent workforce to manage their increasingly sophisticated farming and manufacturing operations.
	Community services	For the industry to attract and retain the people it needs to provide the services to support the needs of families and workers within the industry. This requires industry leadership to ensure that the engagement with communities is strong.
	Community connectedness	
Supporting services	Transport and logistics	Roads and related infrastructure need to support a changing industry. Floods in Victoria highlighted the limitations of road infrastructure and particularly bridge loadings when transport needed to access different routes.
	Digital connectivity	Digital connectivity will be essential to support the roll out of technology, and to support the increased automation and logistics across the whole supply chain.

DRIVERS OF CHANGE IN THE MURRAY-DARLING BASIN

DRIVER	ELEMENT	DAIRYING IN THE MDB
Competitiveness	Management skills	Farm Managers will need a high level of skills into the future to manage bigger farms (more people), increasingly complex farming systems and increasing technology. In addition, the ability to manage risk will be a key component.
	Risk management	A managed approach to risk is required which becomes more complex as farms intensify and grow. Risk management will also improve access to capital. Supply certainty is key to processor confidence and with-it ongoing investment in sites in the MDB. This is one example where the flow on consequences of government policy may jeopardise appetite to continue to invest and operate in the region.
	Access to capital	Certainty in the operating environment impacts on the willingness of capital providers. Capital capacity is key to determining the pace of on-farm investment and industry transition including investment in energy transition, circular economy and automation. Investment incentives are essential to support the timely investment. Capital capacity is a key factor determining the pace Policies that expect more rapid transition or are required to respond structural adjustment will need funding support to succeed. This is particularly important where the capital investment does not improve business competitiveness or productivity.

SUPPLY CHAIN TRENDS IN THE MURRAY-DARLING BASIN

1. ON FARM

1.1 Feed base Systems

Dairy farms are making significant changes to their feedbase systems to enhance productivity and sustainability:

Shift from Traditional Grazing: The volatility of water availability experienced since the Millennium Drought has prompted a move away from traditional low-cost grazing systems that rely on freely available and cost-effective irrigation water. Newer grazing systems retain the productive value and management benefits of ryegrass but are integrating more annual species as well as other grazing species that have higher water use efficiency or more flexibility with regards to irrigation. Grazing based systems are also integrating risk management practices that involve a combination of improving water security, cash resources and/or stored feed to prepare for periods of reduced water availability or increased cost.

Partial Mixed Ration (PMR) and Total Mixed Ration (TMR) Systems: A significant number of farms are adopting PMR and TMR systems, which involve mixing various feed ingredients to provide a balanced diet for dairy cows. In 2023, 50% of farm businesses in the Murray region fed a total TMR diet at some point over the year (Feed and Nutrition Survey, Dairy Australia, 2023). These systems improve feed efficiency, enhance milk production, and allow for better control over the nutritional intake of the herd. Critically, they allow for feed intake to be delivered in part or whole by stored or bought in feed which allows businesses to spread the cost and production risk of their required feed volumes over several seasons, geographical areas and feed types. These systems generally rely on a higher investment in both feeding infrastructure and management practices such as agronomy and herd management to achieve production efficiencies to offset increases in business costs.

Increased water use efficiency: Regardless of feed system type, farm businesses are adopting a complex mix of forage types on farm to increase water use efficiency. These species include sorghum, lucerne, fescue, millet and winter cereals for grazing, and grain sorghum, maize, lucerne, vetch and winter cereals for conservation and storage. In 2023, 48% of Murray region farmers grew winter cereals for forage conservation, and 24% grew maize despite ideal conditions for direct grazing of ryegrass species (Feed and Nutrition Survey, Dairy Australia, 2023).

On farm efficiency upgrades: Dairy farmers have undertaken significant water use efficiency programs in the MDB. According to a 2020/21 survey commissioned by Goulburn Broken CMA, 92% of farmers in the Goulburn Murray Irrigation District had upgraded their irrigation systems and this was the highest of any industry surveyed.

Investment in Feeding Infrastructure and Climate Shelters: Farms are investing in advanced feeding infrastructure such as storage and mixer wagons, feedpads, climate shelters and housing systems. Enhanced storage facilities also allow for the preservation of high-quality forage. Investment on farm is increasing in the Murray region. Nearly 40% of Murray region farms have permanent infrastructure to support feeding and housing of cows, which ranges from sophisticated barn and shed systems to feedpad areas. Investment on farm continues, with 95% of farmers in the Murray region investing on farm between 2022-24 and 90% planning to invest in the period of 2024-26. (NDFS, Dairy Australia, 2024).

1.2 Technology Use/Adoption

Feedbase and animal nutrition (Dairy Australia's 2023 Feed and Nutrition Survey)

- Technology use for nutritional management is increasing with more farmers using computer-based systems to monitor individual cows (21% in 2019 to 28% in 2023).
- The use of technologies such as drones and satellites to measure pasture growth doubled from 6% in 2019 to 12% in 2023 and from 4% to 9% to assist in pasture rotation decisions.
- The Forage Value Index (FVI) provides an independent and reliable assessment on the potential economic value of Perennial, Italian and Annual ryegrass cultivars:
  - Nationally, farmer awareness of the Forage Value Index (FVI) increased from 51% in 2019 to 63% in 2023.
  - The largest increase in awareness was seen in the Murray region (from 38% to 68%).

Increased animal monitoring and electronic data capture[5]: Approximately three quarters (76%) of all survey respondents collect individual cow data electronically. In the Murray region 84% of farmers use this technology representing the highest level of electronic data capture.

[5] Dairy Australia's Animal Health and Welfare report June 2022

Genomics[6]: The use of genomic testing of dairy heifers is rapidly increasing in Australia. The most recent data shows that over the 6 months between 1 July 2022 and 31 December 2022, around 71,000 females were commercially genotyped in Australia (source: DataGene).

Increased use of (renewable) energy sources[7]: Survey results suggest there has been significant uptake of renewable energy installations since 2015 (71% of farms now with at least one installation, up from 44%). Murray Dairy has led the adoption of renewable energy systems with a significant increase in solar panel installation on farm.

Automatic/Robotic milking: In Australia, automatic milking systems (AMS) operate across a range of farming system types, including pasture based grazing with variable levels of supplementation and contained housing systems. There has been a significant increase in the integration of AMS into Australian dairy farms, irrespective of farming systems, driven by considerations related to workforce availability, improved technology and AMS accessibility.

As well as creating greater flexibility, Australian dairy farmers adopt AMS due to potential animal health advantages, workforce savings and to set reliable milk production expectations for their operation. There are three main types of AMS which are commercially available - single box systems, multi box systems and automatic rotary.

1.3 Workforce and Labour Trends

The dairy industry's workforce is evolving, with a focus on skill development and labour efficiency:

Management skills: The increasing farm sizes and changing ownership models is driving an increase in the need for professional farm management skills and farm managers. Professional farm managers oversee increasingly complex regulatory and commercial areas of business activity including workforce, capital investment, contracts and risk management.

Technological Skills: The adoption of advanced farm systems requires people to have specific skills in a wide range of areas including animal performance, milking and irrigation technology, agronomy, business management, HR and leadership including engaging a diverse range of employee demographics. Similarly, those professions that provide services to the dairy industry will increasingly be required to be more highly skilled in the area emerging technologies.

Labor Efficiency: Streamlining farm operations to reduce labour costs and enhance productivity has involved adopting technology that automates repetitive tasks, allowing personnel to concentrate on more complex activities.

1.4 Farm Sizes

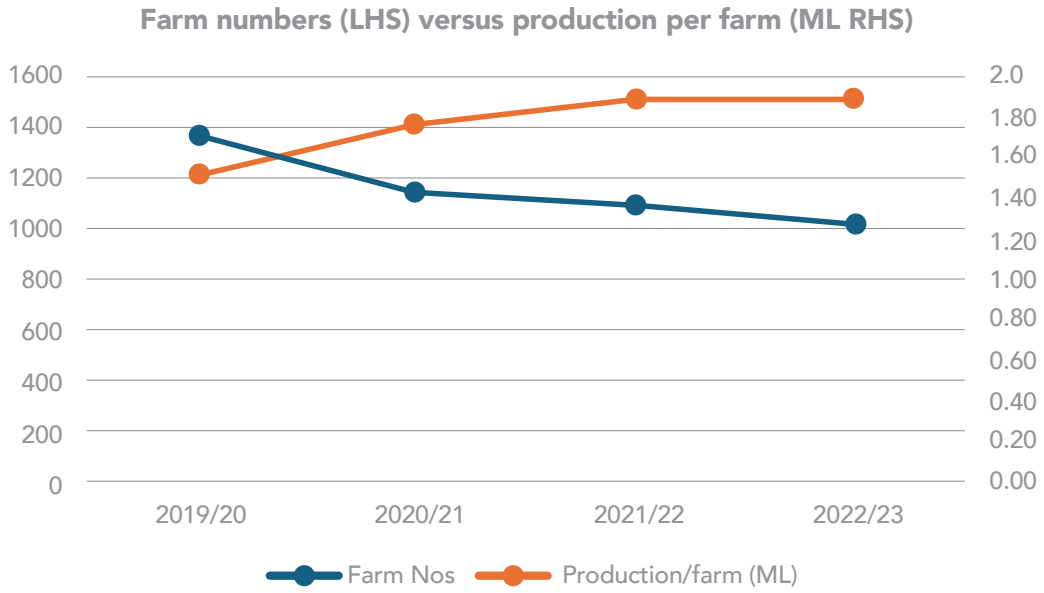
There is a trend towards farm consolidation and expansion, driven by the need for economies of scale and improved efficiency:

Farm Consolidation: Smaller farms are merging or being acquired by larger operations to benefit from economies of scale

Expansion: Larger farms are expanding their operations, increasing herd sizes, and acquiring additional land. According to Dairy Australia's Situation & Outlook report 2024, 26% of Murray Dairy farms are expanding, and significantly more farms have increased their milking herd size over the past year (44%).

[6] Dairy Australia's Animal Health and Welfare report June 2022
[7] Dairy Australia's Land, Water, Carbon Survey May 2020)

SUPPLY CHAIN TRENDS IN THE MURRAY-DARLING BASIN



Farm numbers versus production per farm in the Murray-Darling Basin from 2019/20 through to 2022/23 – Source: Dairy Australia

1.5 Profitability and Business Confidence

According to Dairy Australia's Situation and Outlook report 2024, business confidence within the dairy industry in the Northern Victorian subregion of the MDB is at its highest since 2017, with a forecast of 84% of farms expecting to make a profit in 2024.

- **Risk Management:** Farmers are incorporating comprehensive risk management strategies to handle market volatility, climate change impacts, and other uncertainties.
- **Access to Capital:** Ensuring that farms have access to the necessary financial resources to invest in modern technologies and expand operations, including loans, grants, and investment from both public and private sectors.
- **Innovative Business Models:** Adopting new business models that enhance profitability and sustainability.

2 DAIRY PROCESSING AND MANUFACTURING

2.1 Milk Supply Volatility and Price

To be competitive in domestic and international markets, dairy processors need to have confidence they can secure reliable milk volumes at reasonable prices year on year.

The deregulation of the Australian dairy industry in 1999 fundamentally changed the relationships between producers and processors and removed the regulatory constraints on the movement of raw milk and processed products between states.

The maturing of these arrangements has coincided with a declining domestic milk pool, domestic and international price volatility, and since 2015 a significant shift in supplier loyalty in part attributed to changing processor ownership and pricing.

There has also been growth in small scale boutique processing - although the overall volume attracted into this segment remains small.

Many of the milk production drivers are shared with non-MDB production regions however the MBD is characterised by its reliance on irrigation. Industry engagement continues to indicate uncertainty for irrigated agriculture in the MDB has created an additional risk for manufacturers.

Modelling prepared by Goulburn Murray Water shows that the purchase of approximately 100GL of water entitlements in the Goulburn Murray Irrigation district water and the termination not the associated delivery shares (network access) could increase water delivery costs by more than 34% for remaining customers[8]. As a result there is increased concern for the supply of milk, and the price that may be required to provide viable returns to producers.

2.2 Energy Reliability, Cost and Transition

Energy costs – electricity and gas – are critical to processing operations and a significant operating cost. There have been significant increases in costs over recent years and in Victoria gas shortages have been foreshadowed from 2028. However manufacturers have confirmed that frequent grid disruptions are also a significant risk and cost to the business - and an immediate opportunity to improve productivity.

Reliability – Consultations with dairy processors in northern Victoria have confirmed significant reliability issues with network disruptions occurring at rates equivalent to one day in three. A less than one second disruption (microflick) in a complex automated operating plant can result in around 7 hours of downtime in addition to the costs of further processing to meet compliance and food safety standards.

Manufacturers' monitoring of disruptions indicates some correlation with increased localized summer storm activity. With climate change scenarios indicating increased climate volatility, grid reliability is a critical concern.

Since 2016 industrial electricity use in northern Victoria processing regions has increased by approximately a third as a result of automation, electrification and growth/consolidation.

Gas supply, displacement and electrification – The combination of supply uncertainty and rising costs has elevated manufacturers interest in gas displacement options. Thermal energy storage is currently being explored by several northern Victorian manufacturers and similar established and emerging technologies need to progress at speed to provide alternatives to traditional gas and to maintain competitiveness. Northern Victoria processing regions currently account for 8% of Victoria's total industrial gas use highlighting the region's dependence on this resource.

Alternate energy generation and storage - Dairy processing generates year-round bio-waste and wastewater streams. Dairy processors in the MDB are already benefiting from their investment in onsite (behind the meter) bioenergy generation however the viability of bioenergy depends at least in part on the site's footprint and infrastructure with greenfield developments enjoying a significant advantage. Developing co-located or shared bio-energy sites may provide an alternative where behind the meter cannot be accommodated on site. (see Case study in Appendix 2)

Costs & transition – Energy costs are critical to the domestic and international competitiveness of Australian manufacturing. Many areas of the MDB are well suited to renewable energy generation and storage, however the speed and scale of this investment is constrained by grid connectivity.

ARENA has identified renewable energy resources and microgrids as possible paths to help offset the need for large-scale distribution network capital investment and operating costs, thereby reducing costs for industrial, commercial and household consumers, especially in remote area and fringe of grid situations[9].

2.3 Business, Industry and Global ESG drivers

Consumer preferences, business commitments and government policies are driving a range of ESG priorities in areas that range from packaging, and greenhouse gas (GHG) emissions to modern slavery and waste recovery. Many of these obligations have and will continue to require significant capital investment, R&D and require ongoing reporting and administration that extend beyond the business. For example scope GHG reporting is an example of how processors are increasingly reliant on their supply chain and especially suppliers.

The dairy industry has shown its ability to tackle these industry challenges collaboratively. The industry has developed a number of plans and strategies to advance its shared and individual responsibilities including:

- Australian Dairy Sustainability Framework
- Dairy Packaging Roadmap,
- Dairy Sector Food Waste Action Plan

While these challenges are shared across the sector, the MDB dairy industry is well placed to host multi-industry investment and research that takes advantage of the region's concentration of dairy processing and production and its colocation with industries that share similar challenges.

[8] Victorian Government Basin Futures Prospectus

[9] ARENA Submission to the Economics and Industry Standing Committee Inquiry into microgrids in Western Australia, 2018

2.4 Workforce and Capability

The Australian dairy manufacturing workforce is characterised by an ageing demographic, difficulties in accessing training, a growing need for skilled labour to operate increasingly sophisticated processing plants and challenges in attracting talent to the sector and to regional processing sites.

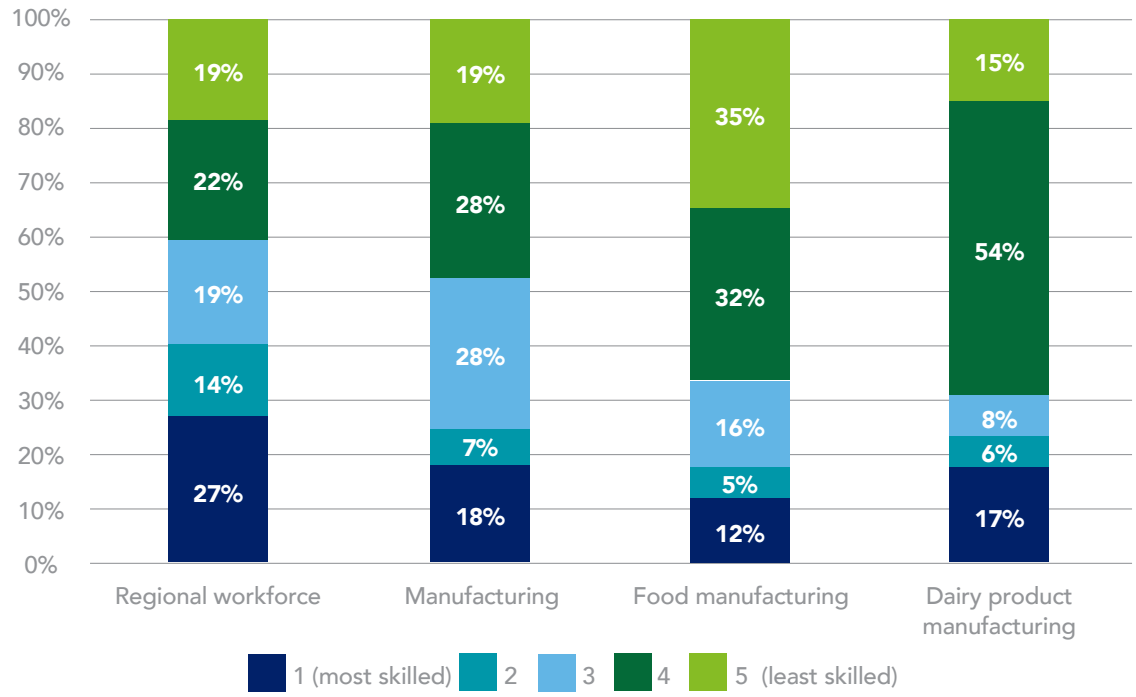
A survey of Australian Dairy Products Federation members in 2021/22 (Bridge, 2022) found the following in relation to the processing sector workforce nationally:

- Members reported a vacancy rate of 8.2%.
- 49.7% of the workforce was over 50 years old.
- 78% of processing sites reported difficulty in accessing training support for dairy specific skills.
- 55% registered challenges in accessing general training needs.
- There is a growing need for skilled labour as plants increase the sophistication of processing technology

A report into the economic and broader contribution of the dairy processing sector by Deloitte Access Economics (2021) found that most dairy processing jobs are relatively lower skilled occupations. However the dairy industry has the lowest proportion of least skilled jobs when compared with the broader manufacturing and food manufacturing sectors, and regional workforce in general. Dairy also has a much higher proportion of 'most skilled' jobs compared to the food manufacturing sector.

Deloitte reported that in 2016 (latest available data) over half of all jobs within the industry were categorised as skill level 4. These roles, predominantly comprising factory workers and truck drivers, provide important opportunities for people in regional areas who typically have access to fewer employment opportunities than their metropolitan counterparts.

There is also a lack of training opportunities and career pathways for many of these professionals. Several processors have highlighted the demise of training for dairy processing technicians and similar industry specific qualifications that is now become critical as existing talent approaches retirement.



Skill distribution of selected industries and sectors in regional Australia
Source: Economic and broader contribution of the dairy processing sector – Deloitte

SUPPLY CHAIN TRENDS IN THE MURRAY-DARLING BASIN

3 SERVICE PROVIDERS

For the purposes of this strategy the services sector includes a wide range of professional, and technical functions and trades.

On farm services can include animal veterinarians, electrical and digital technicians, agronomists, to business, finance, water, energy and insurance brokers as well as trade qualified mechanical engineers working across farm and the manufacturing supply chain. There is also a network of agronomists that work across industries assisting dairy industry in areas such as cropping management.

For manufacturers there are many similar categories and increasingly a need for energy, automation and technology services and trades.

Across the MDB, dairy production and manufacturing occurs alongside other primary production and processing activities with considerable overlap for example in engineering and design to support construction, electrical and renewable energy. Dairy's year-round activity often underpins the viability of local service providers and consultants.

The need for skilled professionals and service providers is not unique to the MDB, however the distance from major urban centres and the life-style offering can present challenges to the attraction and retention of trades and services. In addition, as dairy relies on irrigation within the MDB, there is a need for an irrigation support sector such as technicians and advisors to provide farmers with the skills to adapt to new technologies.

It should also be noted that there are challenges experienced by the irrigation service providers due to shrinking irrigation, distributed use, ageing assets and the costs of renewal.

It is expected that the dairy industry's transition to more automation, energy dependent and intensive production and processing will increase the demand for a number of existing and emerging services.

4 COMMUNITY

When considering the community supporting dairy, this plan takes a holistic view across and so includes government, health, education, public transport, water corporations, as well as the many and varied individuals and organisations that create the fabric of regional communities and regional living.

The Australian Bureau of Statistics data indicates that some local government areas (LGAs) with high levels of dairying have seen a population declines over the last two decades. For example, Gannawarra LGA has seen a fall in population by more than 10% since 2001. And whilst Australia's total regional population over this period increased by 21%, a number of dairy LGAs grew less quickly than average. For example, Campaspe in northern Victoria grew by only 7% in the same period.

Based on data from Australian Curriculum, Assessment and Reporting Authority, amongst those dairying LGAs, some are seeing more rapid decline in school enrolment than the average for Regional Australia. LGAs in this category include Southern Downs (Queensland), Berrigan (Southern NSW), Cowra and Forbes (Central NSW) and, Gannawarra and Greater Shepparton (Northern Victoria).

SUPPLY CHAIN TRENDS IN THE MURRAY-DARLING BASIN

Governments

All levels of government have a vital role to play in shaping the operating environment for dairy and the services and industries that will support its transition. Across the MDB, governments and agencies recognise the importance of agricultural production and food processing to local economies. However local, state and federal policies and investment in areas such as energy transition, circular economy, education and training, and national freight networks are equally important to improving the competitiveness and profitability of MDB dairy sector.

The connectivity within the MDA dairy industry is often complicated by state borders, LGA boundaries and other geographic operating footprints such as those for RDAs. For example in the three LGAs of Campaspe, Moira and Greater Shepparton there is more than $5.5 billion of manufacturing, that includes $3.2 million of food and grocery manufacturing. Dairy dominates food and grocery manufacturing representing more than half the annual activity. The dairy production region extends over the state border into the Riverina with NSW milk processed in Victoria. In addition to two states and at least three LGAs, the northern Victorian region is bisected by the boundaries of RDAs and Regional Partnerships.

Similar challenges can exist for health, education, public transport service planning and delivery.

MDB connectivity to progress shared challenges

Many challenges such as energy transition, workforce attraction, housing and transport are shared with other co-located ag industries.

For example, housing is an immediate challenge that will be shaped by increased proportion of farm workers expected to live off farm, and more highly skilled workers employed on farm and in industry to manage larger and more sophisticated (automated) operations.

Other shared challenges include digital communications, public transport, education and school options. These trends present opportunities for local government planning and for communities to redefine the role of cities, and smaller towns and to play an important role in attracting and retaining workforce in the region.

Developing networks and forums that allow regional communities to understand and solve these issues in partnership with local, state and national stakeholders is important.

STRATEGIC DIRECTION

KEY FOCUS AREAS

This strategy identifies the various streams in which strategic action for the short, medium and long term must be delivered across the supply chain and with those who provide support to the industry. Benefits are delivered within and beyond the farmgate and into manufacturing, community and with service providers. There are four themes behind the strategic actions of this document. People and workforce, Sustainability: Environmental and social responsibility, Research, innovation and technology, and Profitability and business confidence. Across all four themes there is the need for the overarching elements of promotion and connection to ensure the document drives change in a dynamic industry. A combined effort is required with all stakeholders, organisations, and governing bodies to guarantee movement in the same direction to achieve the objectives that will bring lasting benefit to the region.

Key focus areas for the Murray-Darling Basin strategy with an overarching promote and connect focus.

Industry Promotion

As outlined at the outset of this report, the MDB dairy industry faces challenges that cannot be solved at a farm, processor or even industry level. Energy, water, land use, connectivity (digital and transport), workforce and even housing are issues shared with other sectors, co-located industries and are defined by regional, state and national policy settings.

Working on its own the dairy industry can have an impact, but it is increasingly apparent that to move at the speed and scale required, the industry needs its community stakeholders to lead the delivery of critical services and infrastructure

A key step in empowering community stakeholders, is for the dairy industry in the MDB to articulate its future state as a whole and in ways that provide sufficient confidence to attract the efforts and investment from communities, service providers, other industries and sectors, investors, regulators and governments.

This first attempt to develop an end-to-end dairy strategy for the MDB has highlighted the inconsistent and incomplete knowledge, data and understanding of the supply chain, the drivers at each stage and the dependencies that exist between and across the supply chain. This creates challenges in the sector's ability to present a shared vision, with clear priorities that can be supported by data, and around which interventions can be designed and measured, and that allow broader stakeholders can act with confidence.

Industry promotion strategies/actions

GOAL	ACTIONS	BENEFICIARIES	ACTIVATION LEAD
Tell the supply chain story	• Have clarity and agreed messaging that describes the current and future state for dairy in the MDB as a whole and within the subregions. • Promote positive messages that demonstrate productive and sustainable best practices across all farm systems • Promote the scale and significance of the dairy manufacturing hub that exists within the region and its critical dependencies (energy, workforce, training, water) to encourage and inform Government, industry and commercial action, and policy design.	Community Industry Government	Industry Contributors Processors Farmers Community

Reliable investment data and resources	• Develop data sets that enable stakeholders to incorporate dairy industry needs into their local, regional and 'larger footprint' planning and investment. Areas of focus may include
	  • National, state and regional freight networks
	  • Energy trends including automation, electrification and consolidation, generation and storage.
	  • Workforce housing and transport needs and expectations (location, typologies, scheduling and seasonality)
	  • Land use and investment trends including data to support councils to achieve timely implementation of planning applications for new developments
	  • Aggregated education and training needs
	• Annual mapping of milk production by LGA including land use planning that supports dairy farm growth opportunities		

Industry Connection

Unlike other dairy regions that have developed forums and frameworks that reflect their enclosed geographic identity, the MDB's is porous and broken into 5 distinct and geographically divided subregions. However there are shared challenges and opportunities, and strengths to be leveraged across and between MDB regions and stakeholders. A range of national and regional forums and events have provided temporary opportunities. However, if the industry is to collectively take action then there is a need to establish an ongoing connection mechanism that regularly brings the end-to-end supply chain to the table. The aim would be to develop and refresh a shared understanding of the industry's future state and collectively work towards what's needed to ensure it is prosperous and successful.

Equipped with its shared vision, priorities and data, the MDB dairy industry must develop the connective mechanisms (forums, frameworks and ongoing networks) to engage and enlist the efforts and capital on a much wider range of stakeholders than it has traditionally done before. This approach should focus in the areas that dairy shares with other industries and sectors, or on areas it cannot address on its own. These include education and training, workforce attraction and retention in regional centres, providers of new and emerging research and innovation, housing, transport, energy transmission, distribution and storage.

Industry connection strategies/actions

GOAL	ACTIONS	BENEFICIARIES	ACTIVATION LEAD
Connecting dairy across and in the MDB	• A MDB Dairy Supply Chain Leadership mechanism with representation from farms, processors, service sector and community: - Gather accurate data to support united messaging across the supply chain - Capture trends and information that will inform policy, regional planning and emergency response and recovery - Foster collaboration and connection across the supply chain - Be the go-to organisation for all things dairy Establish a MDB lead processor group to collaborate on shared challenges and collective action - Leverage the MDB subregions' different approaches and regulatory requirements to identify policies, regulation and systems that work and could be replicated in other subregions.	Farmers Governments Industry Processors Local government Educational institutions Community	Industry Contributors: Government Educational; institutions Processors
Connecting the MDB	• Establish regional Food and Fibre forums to bring ag production and processing industries together with other local stakeholders (public, private and community) to progress shared challenges at scale. Areas of shared focus may include • School, tertiary and industry training and education, • Research & innovation, • Energy and circular economy/waste management and other ESG-driven initiatives • Housing and transport • Workforce attraction	Industry, Processors, Community, Educational Institutions, governments, other ag sectors	Industry with Contributors, Processors, Government, other ag sectors and community
A shared R&D investment agenda	• Encourage collaboration and co-investment in R&D to address MDB dairy industry needs and involving dairy and non-dairy stakeholders. Partners may include: - Dairy Australia - Gardiner Foundation - Murray Dairy, Dairy SA, Dairy NSW & SubTropical - Future Drought Fund (FDF) Basin CRC - Birchip cropping group - Irrigation Farmers Network formerly Irrigated Cropping Council - Riverine Plains - Southern Growers - State departments - Universities - QDAF	Industry Farmers Processors Governments Research organisations	Industry Contributors Government Research organisations

THEME 1: PEOPLE & WORKFORCE

The dairy industry is a significant employer in the Murray-Darling Basin. Diverse roles require a broad skill set, with rising demand for high-quality training throughout the supply chain and in aligned services, with the capacity and agility to work across an increasingly diverse sector.

Technology advancements shape the industry's future, emphasising the need for education providers to keep pace with emerging roles, skills and workforce readiness.

Attracting workforce to the sector requires stronger partnerships with co-located industries and communities across basin to provide an attractive lifestyle offer to prospective employees.

People and workforce strategies/actions

GOAL	ACTIONS	BENEFICIARIES	ACTIVATION LEADS
Dynamic Workforce Data Mapping	– Workforce mapping to achieve deep knowledge of workforce need at every stage of the MDB dairy supply chain, including R&D: • Skill and talent gap • Geographic demand • Education & training alignment – Tangible investment & delivery frameworks – Share data and insights to assist stakeholders plan for the services and expectations of local and relocating workforce in housing, transport, childcare and education.	Farming enterprises Processors & industry Community Government	IIndustry Contributors: Processors Farmers Local governments State governments
Attracting Talent	– Implement differentiated workforce attraction strategies to reflect the dairy supply chain – Grow and value dairy research expertise within the MDB, including sub-regional capability – Actively attract and retain CaLD workers as a vital part of the dairy industry workforce – Elevate the need for technology-enabled employees in the industry – Ensure the expertise is available to support the adoption of innovation	Dairy workforce Farming enterprises Processors & industry Community	Industry Contributors: Farming enterprises Processors Recruitment networks Communities Local Governments State Governments
Empowering Employers	– Develop dairy as a leader in CaLD employment in the agricultural sector – Support farming enterprises to establish people management systems tailored to their business size and workforce needs – Assist farm enterprises to recruit overseas workers successfully – Provide scholarships, traineeships and similar support to grow the pool of professional HR, IT, Finance and similar corporate services talent required by processors and producers.	Farming enterprises Processors & industry	Industry Contributors: Farmers

STRATEGIC DIRECTION

GOAL	ACTIONS	BENEFICIARIES	ACTIVATION LEADs
Building Skills/ Expertise	– Integrate the dairy supply chain into all levels of education and training, to improve visibility and currency. – Assist education providers to develop curriculum resources that accurately reflect contemporary dairy businesses and supply chains. – Activate all levels of education and training to meet MDB workforce needs across the supply chain – Develop an MDB Dairy Immersion Program to induct the next-generation workforce – Expand farmer and industry engagement with international expertise – Develop a MDB Dairy Placements & Internships initiative – Explore partnerships to establish a regional dairy training facility, integrating modern farming and processing systems – Support the advocacy efforts of service providers to attract training services such as • Freight and logistics • Trades and apprenticeships	Dairy workforce Farming enterprises Processors & industry Education providers Government Community	Industry Contributors Processors Farmers Education providers
Stronger Communities	– Foster peer-to-peer networks that strengthen the dairy industry – Mobilise networks to support and connect the dairy workforce in their communities including settlement services for relocating workforce – Identify and remove workforce barriers, including for CaLD workers, through intentional place-based solutions	Farming enterprises Processors and industry Community Local government	Industry Contributors: Whole of community
Developing Leaders	– Embed leadership training and opportunities at all levels of the dairy supply chain – Grow dairy representation in regional, state and national forums – Establish a dairy mentoring initiative across the supply chain	Farming enterprises Community	Industry

THEME 2: INTEGRATED SUSTAINABILITY

The Australian Dairy industry's commitment to environmental and social responsibility is vital to market access and consumer confidence in domestic and international markets. The industry has developed a number of plans and strategies to advance these responsibilities including:

- Australian Dairy Sustainability Framework
- Dairy Packaging Roadmap,
- Dairy Sector Food Waste Action Plan

This strategy recognises the opportunities, challenges and regulatory frameworks are different for inland regions and in the five subregions. By supporting the regions to explore practical local pathways and solutions, the regions can play their role in advancing outcomes in their local areas, in partnership with local communities and stakeholders, and for the industry as a whole.

GOAL	ACTIONS	BENEFICIARIES	ACTIVATION LEADS
Critical Issue Leadership	– Anticipate and address immediate and emerging critical sustainability issues including industry and stakeholders working together to promote and progress current and emerging environmental and social responsibilities in areas that include: • Energy reliability and net-zero transition • Water security and efficiency • Packaging and waste • Animal welfare • Circular economy – Facilitate collaboration between industry and stakeholders across the basin to progress and promote practical local solutions and pathways to address environmental and social responsibilities – Attract investment from government, and non-government sources to support development of resources, pilots and cooperative research that can accelerate commercialisation and adoption by industry in the MDB.	Processors Farmers Industry Government	Industry Contributors Processors Government Farmers
Championing Adoption	– Promote the implementation of industry sustainability frameworks including: • Australian Dairy Sustainability Framework • Dairy Packaging Roadmap – Champion a whole of supply chain working group to develop attributes for ESG reporting – Streamline sharing of data within the supply chain to meet ESG reporting obligations e.g. Scope 3 – Identify and prioritise measures that improve security of market access and market premiums – Foster on-farm understanding of environmental and social opportunities and responsibilities – Streamline sharing of data within the supply chain to meet ESG reporting obligations eg Scope 3	Processors Farmers Industry Government	Industry Contributors Processors Government Farmers

GOAL	ACTIONS	BENEFICIARIES	ACTIVATION LEADS
Dairy as a community catalyst	Build MDB community awareness of industry priorities and targets as a catalyst to encourage broader partnerships, collaboration and non-dairy leadership Provide leadership and support to MDB regions to help community stakeholders develop and deliver place-based initiatives in areas that include • Community wellbeing • Energy transition/emissions reductions • Circular economy/waste	Farmers Processors Community	Industry Contributors Farmers Community Processors

THEME 3: RESEARCH, INNOVATION AND TECHNOLOGY

Dairy in the MDB has significant, increasingly diverse and urgent research and development needs to ensure it remains competitive, efficient and productive. Any R&D program also needs the flexibility to work locally in partnership with existing and emerging industries and stakeholders and to work collectively on issues common to the MDB and broader dairy industry. Leveraging new partnerships and collaborations and building local capabilities that support the emergence of regionally specific R&D needs is key.

Research, innovation and technology strategies/actions

GOAL	ACTIONS	BENEFICIARIES	ACTIVATION LEADS
Targeted Research Mapping	– Conduct research mapping to identify communities of practice that can advance priority areas for the dairy industry, including: • Energy security • Food science and value-adding • Labour saving technologies • Genomics to improve heat tolerance and feed conversion in a changing climate context • Water saving technologies and adoption • Intensive systems – Identify and pursue grant and research opportunities for mapping to ensure dairy is active and visible	Farming enterprises Processors & industry Researchers & research institutions Government Community	Industry/Processors Contributors State Government Local Government Research organisations
Driving Dairy Innovation	– Empower the industry in the MDB to drive its research agenda – Leverage partnerships and investment in priority areas for the dairy industry – Attract investment from government, and non-government sources to support development of resources, pilots and cooperative research that can accelerate commercialisation and adoption by industry in the MDB.	Farming enterprises Processors & industry Government Community	Industry Contributors: Farming enterprises Processors Government Research organisations

STRATEGIC DIRECTION

GOAL	ACTIONS	BENEFICIARIES	ACTIVATION LEADS
Building Research Excellence	– Grow dairy-specific research capability in the MDB – Cultivate identified communities of practice in priority areas for dairy in the MDB – Foster international linkages that inform the research, innovation and technology agenda, 'local to global, global to local'	Farming enterprises Processors & industry Researchers & research institutions Government Community	Industry Contributors Research organisations
Realising Impact	– Develop and advocate for evidence-based policies, reforms and structural adjustment support to adopt efficient farm systems and technologies – Attract investment from government, and non-government sources to support development of resources, pilots and cooperative research that can accelerate commercialisation and adoption by industry in the MDB. – Expand RD&E on intensive farm systems to support the land use planning and sustainability requirements	Farming enterprises Processors & industry Researchers & research institutions Government Community	Industry/Processors Contributors Farmers Local Government

THEME 4: PROFITABILITY & BUSINESS CONFIDENCE

As this strategy has demonstrated, the success and confidence of the MDB dairy supply chain is vital to the success of the Australian dairy industry, and for the many industries and communities that operate alongside dairy in the MDB subregions.

A level of profitability and the ability to manage risks drives growth and attracts further investment for the future of dairy in the Murray-Darling Basin. It is essential for the dairy industry to have access to additional financial resources to invest in modern technologies and fund expansion of operations. Necessarily, support and improved business management skills are required for all levels of management and sizes of business to be able to seize opportunities and navigate challenges.

Profitability and business confidence strategies/actions

GOAL	ACTIONS	BENEFICIARIES	ACTIVATION LEADS
Strong adaptive farm businesses in the MDB	– Grow farmer business capabilities to match the growing scale and complexity of farm businesses, including risk and investment decisions – Develop, and continually improve, extension programs to grow skills and capability to implement new practices/farm systems and technology including: • Adaption to change • Range of fodder types – Incentivise investment that supports new practices, farm systems and risk mitigation strategies – Investigate opportunities for different business models that can attract additional capital into farm businesses to facilitate farm transition and succession planning	Farming enterprises Processors & industry Researchers & research institutions Government Community	Industry Supported by: Commercial State Government
Strong and profitable dairy processing industry in the MDB	– As part of the national industry discussion, identify the pathways to improve certainty of milk supply and cost in the MDB, – Advocate for policies and programs that improve cost competitiveness of dairy processors in the MDB including • Energy • Workforce, labour and education • Transport networks • Packaging and waste • Dietary and health obligations • Planning and land use Attract investment from government, and non-government sources to support development of resources, pilots and cooperative research that can accelerate commercialisation and capital investment for new product lines by industry in the MDB. Streamline regulatory frameworks by advocating for local, state and federal governments to adopt linked-up whole of supply chain portfolios and policy development	Processors Farmers Community	Processors

GOAL	ACTIONS	BENEFICIARIES	ACTIVATION LEADS
Grow Market Access	– Work with government and stakeholders to continue to grow international market access for Australia dairy products	Farm enterprises Processors & industry Government Community	Processors Supported by: Industry Government
Research Impact	– Pursue the application of research into practice to increase research impact – Develop channels for sharing research findings to increase adoption – Drive continued economic analysis of emerging innovations		
Peer to Peer Learning	– Facilitate discussion groups that are not solely defined by geography to address industry wide opportunities and challenges – Embrace technology to link producers of common interest across sub-regions, for example: • Large herds • Intensive dairy	Farmers	Industry Contributors Farmers
Community Activation	– Achieve a shared understanding of the value and contribution of the dairy industry through an MDB-wide dairy communication plan – Encourage entrepreneurial effort and activity that grows and advances the dairy sector – Encourage and support community-led solutions to opportunities and challenges – Foster systems and structures that enable innovation and new business activity – Celebrate the dairy industry within communities across the MDB	Processors & industry	Industry/Processors
Dairy at the centre of Australia's food security	– Actively participate in the development of national, state and regional food security plans	Farmers Processors Community Government	Industry Contributors Farmers Processors Government

Appendix 1: Lactalis Australia finds productivity success in environmentally sustainable practices

Contributing to the development of a sustainable production and distribution system is a top priority for Lactalis Australia, who are seeking to continuously improve their practices and achieve sustainability goals to ensure a better future for the company and broader dairy industry. Specialising in dairy products owned and operated by the Lactalis Group, Lactalis Australia employs approximately 2,500 people and works closely with some 500 farmers to bring Australians some of their favourite brands, such as Pauls, Vaalia, Tamar Valley, Lemnos, and Oak. A Lactalis Australia spokesman said it's critical that the business is continuing to evolve across its operation to reduce environmental impacts without sacrificing operational productivity. "A great example is our Strathmerton staging facility which was set up in 2017 to collect and distribute milk in northern Victoria, which is Lactalis' major collection region in Australia," a Lactalis spokesman said. "About 200 million litres of milk is collected in this region annually, of which 40 million litres is delivered direct from farms to our Bendigo site, with most of the remaining volume delivered to the staging facility for onward distribution. "Each week, over 80 tankers are dispatched from the staging facility, which has become integral to balancing Lactalis milk volumes on the eastern seaboard."

The Lactalis spokesman said that in partnership with Booth Transport, one of Australia's leading milk transport companies, the company has been able to set up the staging facility so it now overdelivers operationally and provides outstanding environmental outcomes. "The central location of the staging facility and its larger capacity have allowed truck movements to be reduced by over 1,400,000 kilometres per year, which is the equivalent of driving around Australia over 90 times. The facility remains productive and profitable whilst reducing the business' impact on greenhouse gas emissions," he said.

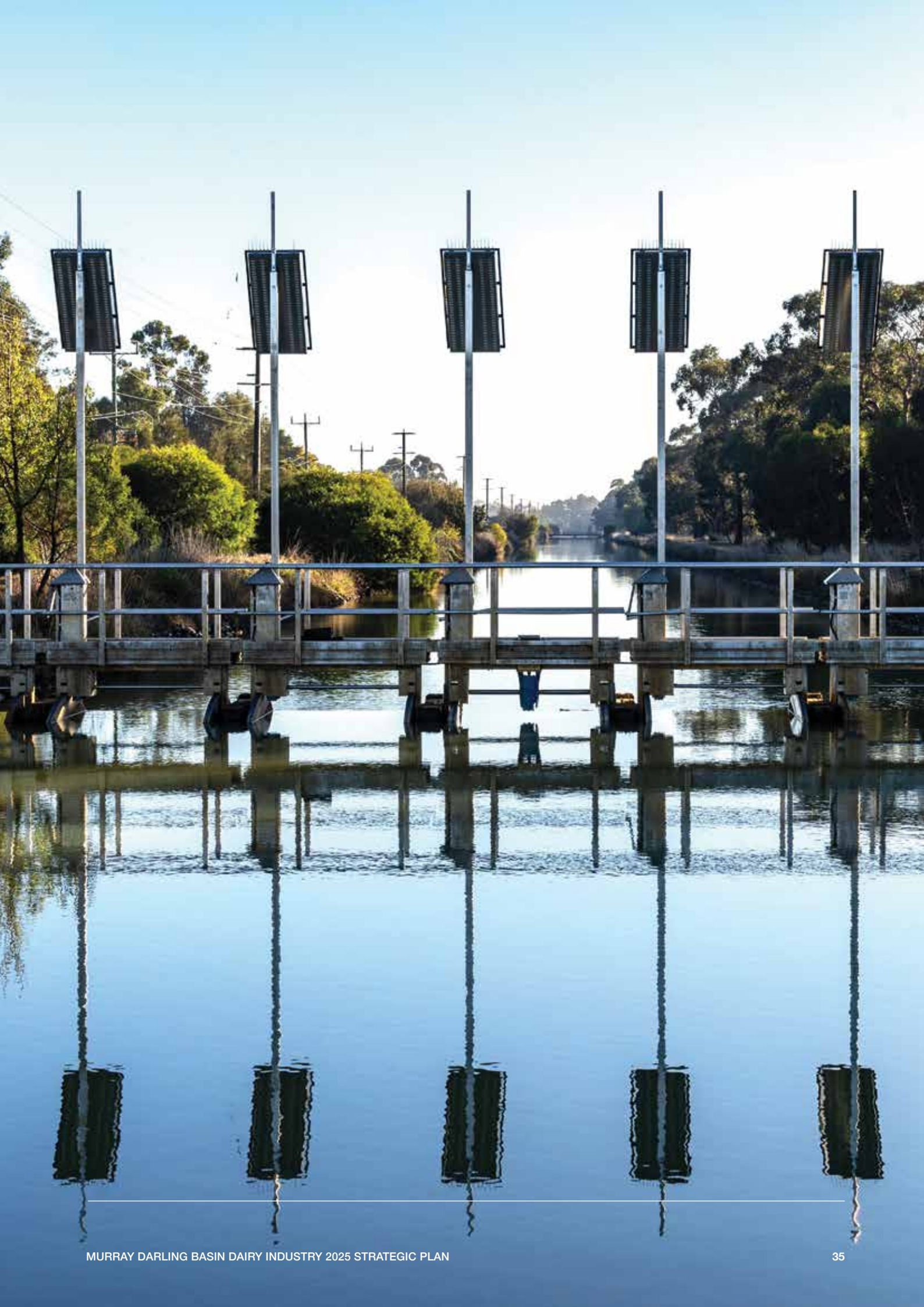
Appendix 2: ACM Biodigester (Source: NAB News 10/3/2023)

After a lot of consideration, ACM chose to invest about $6 million in a waste-to-energy project to produce gas from a biodigester, which generates biogas and fertiliser from organic waste.

For ACM Director Paul Ingleby, who has been schooled in the unforgiving world of agri-finance, there were powerful economic and sustainability considerations.

"We're putting in a cogeneration unit with combined heating and power," Mr Ingleby told a NAB sustainability function.

"It will be powered by a biodigester on-site to produce 94 per cent of our electricity and reduce our emissions by 70 percent.



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