

DAIRY IN THE  
MURRAY-DARLING BASIN

This aerial photograph captures a vast dairy farm in the Murray-Darling Basin. The landscape is a mosaic of green pastures, brown paddocks, and clusters of trees. A prominent road runs diagonally across the middle of the frame. In the lower-left corner, a modern dairy farm building with a white roof and a paved parking area is visible. The foreground is dominated by a dense line of trees bordering a body of water. The overall scene depicts a well-managed agricultural environment.

For more information about the  
Murray-Darling Basin, visit the  
**Dairy Australia website.**

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# INTRODUCTION

Dairy businesses – both farms and processing – are the backbone of the economy and community in many regions of the Murray-Darling Basin. These communities have faced challenges in recent decades from a myriad of factors, but shown themselves to be innovative and resilient, maintaining confidence and positivity. This document provides an overview of the Australian dairy industry operating in the Murray-Darling Basin, providing data on its size and economic contribution and describing the transition underway in many dairy farming businesses to adapt to a changing climate and in particular to manage access to water.

## The dairy industry in the Murray-Darling Basin

The Murray-Darling Basin (the Basin) contains several important dairying regions – including areas of northern Victoria, southern New South Wales and smaller numbers of farms around Forbes and Wagga Wagga in New South Wales, Toowoomba and Warwick in Queensland, and Murray Bridge in South Australia. Unlike dairy along Australia's coastline, where pasture growth depends on natural rainfall, most dairy farms in the Basin, with the exception of some in the Queensland Downs region, rely on irrigation schemes to produce feed requirements.

Dairy production and processing in the Basin underpins Australia's food security, producing 22% of Australia's milk, and is a key source of nutrition in the Australian diet, benefiting the wider Australian community. The region also affords dairying some key competitive advantages. It is ideally located for both export and domestic markets, with efficient connectivity through road, port and telecommunications infrastructure. Logistics access to Melbourne, Sydney and Brisbane has become increasingly important in recent years as adverse conditions such as drought and land-use change impact milk production elsewhere.<sup>1</sup>



Multiple factors including affordable land prices, modernised water infrastructure, excellent herd genetics and an ability to grow and access a wide variety of forages for dairy production due to a long growing season are also advantageous.

Irrigation, access to grain and cropping enable flatter milk production in the Basin than in southern Victoria and Tasmania. This allows for more efficient year-round use of milk processing infrastructure. Milk produced in the Basin is processed within the Basin through 24 milk processing facilities located in the region. Jobs and economic benefits are realized in Basin regions.

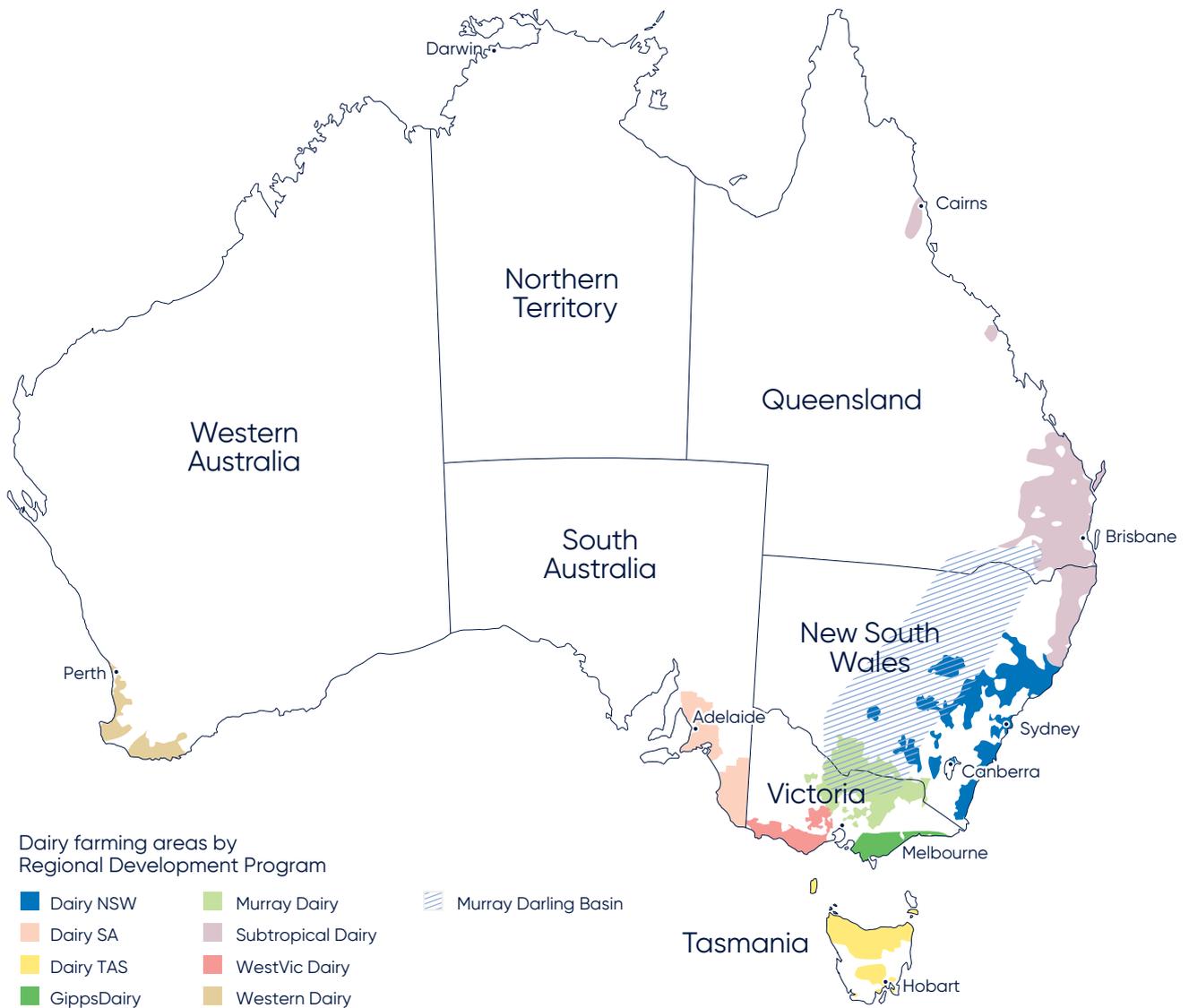
Beyond producing essential nutrition for the community, irrigated dairy farm businesses play an important role in the Basin water infrastructure landscape and complement rather than just compete with other irrigation users, buying and selling inputs with local businesses. Water authorities report that dairy farms are an important component of maintaining the viability of irrigation infrastructure for all irrigators. Indeed, agricultural diversity (diverse consumptive water uses) is key to resilience and prosperity in Basin communities and regional economies.<sup>2,3</sup>

1 Marsden Jacobs and Associates (2019), **Dairy in Northern Victoria Prepared for the Independent Murray-Darling Basin Social and Economic Assessment Panel**

2 Independent Assessment of Social and Economic Conditions in the Basin (2020), **Final Report: Independent assessment of social and economic conditions in the Murray-Darling Basin**,

3 Regional Development Victoria (2020), **Goulburn Murray Resilience Strategy: ADAPT TRANSFORM THRIVE**,

**Figure 1** Australian dairying regions, showing the Murray-Darling Basin <sup>4</sup>



<sup>4</sup> Dairy Australia (2019). *Australian Dairy Industry in Focus 2019*. Melbourne, 52pp. See Appendix 1 p. 33.

# SNAPSHOT OF DAIRY IN THE MURRAY-DARLING BASIN FY2019-20<sup>5</sup>

Anecdotally, water entitlements make up approximately

**25%**

of capital assets for dairy farm businesses in the Basin.



**1159**

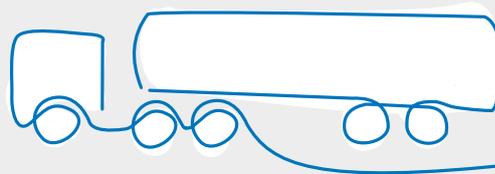
dairy farms across four states

**78%**

of which are in Victoria

**22%**

split between South Australia, New South Wales and Queensland.



**24**

milk processing companies operating in the Basin.

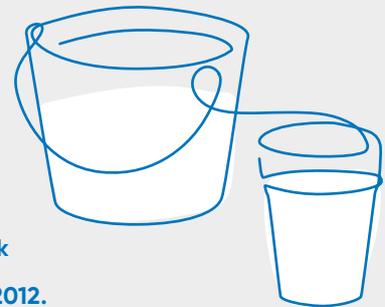
The highest number of farms relying on irrigation are in the Southern Basin region, which includes Southern NSW, Northern Victoria and South Australia. Very few Queensland dairy farms rely on irrigation.

**37%**

reduction in dairy farm numbers and a

**30%**

reduction in total milk production since the Basin Plan began in 2012.



Farm gate value of

**\$906 million**

resulting in

**\$2.3 billion**

of value to the local community.



**1.66 billion**

litres of milk produced, representing

**22%**

of the total national volume.



Approximately

**\$527 million**

has been invested by dairy farm businesses in on-farm infrastructure during the past five years in the Victorian Murray region alone

Much of this farmer investment is to enable **increased feedbase production, harvesting, storing and feeding back to the herd.** Much of this investment is for risk-management measures, helping farms to become more resilient in the face of challenges to productivity.

<sup>5</sup> Dairy Australia, multiple sources.

## CHALLENGES

Dairy profitability in the Basin has historically been based on a cost-effective farming system that grazes cattle on irrigated pastures, and this been a major comparative advantage in Basin milk production. However, drier conditions and climate variability over several decades, the documented variable impacts of the Basin Plan at the local community level, other agricultural development in the Basin, and the cost pressures these combined factors have produced on the water markets, as well as commodity prices and input costs, have eroded that comparative advantage for many dairy businesses.<sup>67</sup>

Australian average temperatures have increased by about 1°C since 1950<sup>8</sup> and median annual inflow to the Basin over the past 20 years is now approximately half that of the preceding century, with the frequency of drier years increasing.<sup>9</sup> Recent decades have also seen a changing trend in seasonality of inflows, towards lower average winter season rainfall in the southwest and southeast of Australia.<sup>10</sup>

Water cost and changing water ownership profiles have been major contributors to shrinking margins for dairy businesses. Competition for water shares has increased. The horticulture sector in Victoria has purchased large amounts of Victorian High Reliability Water Shares (HRWS) in recent years, and now holds around 40 per cent of the total.

Water ownership amongst dairy businesses has changed significantly in the last 10–15 years, following participation in previous Commonwealth water buyback programs. These programs were one of the major initiatives undertaken to achieve the Basin Plan's water recovery targets, and targeted HRWS. The price of HRWS has now risen to historic levels, making their re-purchase un-viable for many dairy businesses. The result is that dairy farms now have lower levels of HRWS ownership and are much more reliant on purchasing from the temporary market to fulfill their water requirements than previously. Victorian Government research suggests that many dairy farms are now needing to purchase 60% of all the water they need on the temporary market, leaving them exposed to significant water market risk.<sup>11</sup>

In some instances, dairy farmers have been priced out of the water market altogether. Aither reports the annual average southern Basin allocation prices for 2019–20 ranged from \$304 per ML in the NSW Murray (above Barmah) to \$644 per ML in Vic 7 Murray (Barmah to SA). Water prices in the lower Murray peaked at approximately \$970 per ML (weekly volume weighted average price) in November 2019.<sup>12</sup> The majority (56%) of dairy irrigators in the Goulburn Murray irrigation District region surveyed in 2016 indicated water prices over \$200 per ML were not viable for their businesses. Only 5% of dairy irrigators in that survey said they could afford to pay more than \$250 per ML.<sup>13</sup>



6 Marsden Jacobs and Associates (2019), **Literature review: Supporting the Independent Assessment of Economic and Social Conditions in the Murray–Darling Basin**

7 Marsden Jacobs and Associates (2019), **Dairy in Northern Victoria Prepared for the Independent Murray–Darling Basin Social and Economic Assessment Panel**

8 Bureau of Meteorology and CSIRO (2018), **State of the climate report 2018**,

9 Inspector General of the MDB Water Resources (2020), **Impact of lower inflows on state shares under the Murray–Darling Basin Agreement**

10 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.

11 <https://www.water.vic.gov.au/mdb/mdbp/social-and-economic-impacts-of-the-basin-plan-in-victoria>

12 AITHER Water Markets Report 2019–20 Review and 2020 21 Outlook: <https://www.aither.com.au/report>

13 [http://www.gbcma.vic.gov.au/downloads/GMID\\_studies/RILWUM\\_TechnicalReportFinal2017\\_LowRes\\_30\\_3\\_2017.pdf](http://www.gbcma.vic.gov.au/downloads/GMID_studies/RILWUM_TechnicalReportFinal2017_LowRes_30_3_2017.pdf)

## A RESILIENT INDUSTRY

The industry in the region is in transition, driven largely by access to water. The industry has recognised that adaptation, change, and innovation are fundamental to improving agricultural productivity, maintaining Australia's competitiveness in world markets; and providing attractive and financially sustainable opportunities for farm households.<sup>14</sup>

Since the Millennium drought, dairy farms and milk processors have continued to consolidate. This is consistent with national trends since 2000 toward fewer but larger and more efficient dairy farms and increasing milk yields per cow. Dairy farm systems in irrigation districts are also diversifying away from a historical reliance on intensively irrigated pastures in response to national water policy reforms and climate change. Rising input costs, volatile seasonal conditions, and challenging commodity market trends have somewhat dampened farmer confidence. The future operating environment is likely to be characterised by increasing variability and volatility, requiring adaptive management at all industry levels.

This has prompted many Murray Dairy farmers, particularly those in the irrigation areas of the Goulburn Murray Irrigation District and southern Riverina, to seek alternative farming systems to meet the challenges brought by rising costs of irrigation water and feed costs. This has seen the introduction of more Total Mixed Ration (TMR), Partial Mixed Ration (PMR) and Total Component-fed Ration (TCR) systems being adopted. It has also seen the increase in infrastructure and equipment investment to support these types of systems, including feed-pads and other feeding infrastructure, housing and shade and shelter.

This has corresponded with the introduction of a whole range of alternative feed crop options to drive great flexibility and increased water use efficiency.

Dairy businesses are active and knowledgeable participants in water markets, opting in and out of the irrigation market depending on water availability and price and using a wide range of water products to manage risk. A recent **survey** commissioned by Dairy Australia found that dairy farmers have a high level of 'water literacy' and are either utilising or considering a range of newer, more complex water market products going forward. This is a key skill required to manage water markets effectively in the face of competition and price increases.

Dairy Australia and the Regional Development Programs provide a range of programs and extension services to assist farmers, with priorities and outcomes detailed in Dairy Australia's **Strategic Plan 2020-25**. Particularly relevant to businesses and communities in the Basin, is the focus on supporting dairy farmers to adapt to changes in the natural environment, and achieve sustainable, efficient and profitable use of land, water, carbon and energy resources.

Despite the challenges, the dairy industry within the Murray Darling Basin has good reason to be optimistic about its future. While the key competitive advantages of dairy in the region remain, it's through the ongoing support and investment in adaptation and change that the industry will continue to meet and overcome challenges. Because of this, dairy industry confidence in dairy in the Murray-Darling Basin continues to grow, ensuring an ongoing dairy footprint in the region, and safeguarding local jobs and communities, as well as supply of a key source of the nation's nutrition.

A full range of **Dairy Australia** programs and projects delivered in the Basin by our regional development programs **Murray Dairy**, **Dairy NSW** and **Subtropical Dairy**, can be found on our websites (click the linked copy above).

14. 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



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