



# DAIRY FARM MONITOR PROJECT

NEW SOUTH WALES ANNUAL REPORT 2021/22



# ACKNOWLEDGEMENTS

## Participants

The participant farmers are thanked for their efforts in supplying data for the Dairy Farm Monitor Project in 2022. A hybrid of face-to-face and remote data collection required additional efforts this year and is greatly appreciated. For continuing participants and those new to the project, thank you for your participation.

Project participants were selected based on a distribution of farm size, feeding system, herd size and geographical location within each region and results should not be viewed as a representation of the entire New South Wales dairy farm population.

## Report

The report was prepared by Sheena Carter, Development Officer (Farm Business Management) with the NSW Department of Primary Industries (NSW DPI) in conjunction with Dairy Australia.

Sincere thanks to Agriculture Victoria for the redesign of the presentation of the data in the Annual Report.

## Contributors/Data collectors

Julie Dart (North Coast Land Services); Alicia Richters (Dairy NSW); contractors Kerry Kempton, Cameron Smith and Tom Farran (Farmanco), Scott Barnett, Rob Cooper, Andrew Ellem (A.E. Consultancy), Anetta Williams and, Fiona Smith (F. Smith Agribusiness Consulting).

NSW Department of Primary Industries Staff: Juan Gargiulo, Nicolas Lyons, Zita Ritchie and Sheena Carter.

These people collected farm data and provided feedback and validation to ensure the accuracy and integrity of the information.

The diligent work of Dairy Australia's consultant analysts Fiona Smith and Kerry Kempton, who conducted data checking, validation and analysis is much appreciated.

## Industry Partners

The Dairy Farm Monitor Project is a collaboration between NSW DPI and Dairy Australia. Now in its eleventh year, the project provides industry and government with farm-level data to inform targeted strategy and decision making.

## Appendix Tables

The appendices at the end of this report provide detailed metrics on the physical and financial performance and efficiency for individual participants.

## Further information

### Sheena Carter

Development Officer – Dairy Farm Business Management  
NSW Department of Primary Industries  
c/- Hunter LLS Office  
2 Flemington Drive  
Scone NSW 2337

[sheena.carter@dpi.nsw.gov.au](mailto:sheena.carter@dpi.nsw.gov.au)

### Helen Quinn

Program Manager – Farm Business Management  
Dairy Australia  
Level 3, HWT Tower  
40 City Road, Southbank, Victoria 3006

[helen.quinn@dairyaustralia.com.au](mailto:helen.quinn@dairyaustralia.com.au)

# CONTENTS

---

List of figures and tables	2
Executive Summary	4
Part One: State Overview	7
Part Two: The North	17
Part Three: The South	24
Part Four: Business Confidence	32
Part Five: 2021/22 Greenhouse Gas Emissions	36
Part Six: How does 2021/22 compare?	38
<b>Appendices</b>	<b>41</b>
Appendix A Statewide summary tables	42
Appendix B North summary tables	46
Appendix C South summary tables	58
Appendix D Glossary of terms, abbreviations and standard values	70

# LIST OF FIGURES AND TABLES

## Figures

1	Monthly rainfall 2021/22	10
2	Estimated tonnes of homegrown feed removed	11
3	Type of feeding systems	11
4	Nutrient application	11
5	Monthly distribution of milk sold	12
6	Monthly distribution of calving	12
7	Distribution of farms by EBIT	16
8	Distribution of farms by ROTA	16
9	Distribution of farms by ROE	16
10	Average EBIT per kg ms – North	22
11	2021/22 Average returns – North*	22
12	Average homegrown feed removed – North	23
13	Feeding system types – North	23
14	Average nutrient application – North	23
15	Average EBIT per kg ms – South	30
16	2021/22 Average returns – South	30
17	Average homegrown feed removed – South	31
18	Feeding system types – South	31
19	Average nutrient application – South	31
25	Expected change to farm business profit in 2022/23	33
26	Producer expectations of milk prices and production in 2022/23	33
27	Producer expectations of fodder production in 2022/23	33

28	Producer expectations of costs for the dairy industry in 2022/23	34
29	Major issues for individual businesses – 12-month outlook	35
30	Major issues for individual businesses – 5-year outlook	35
31	Estimated average GHG emissions between 2017/18 and 2021/22 (CO <sub>2</sub> equivalent)	37
32	Farm profitability between 2011/12 and 2021/22 – the North	39
33	Whole farm performance between 2011/12 and 2021/22 – the North	39
34	Farm profitability between 2011/12 and 2021/22 – the South	40
35	Whole farm performance between 2011/12 and 2021/22 – the South	40

## Tables

1	Estimated average GHG emissions and intensity between 2017/18 and 2021/22 (CO <sub>2</sub> equivalent)	37
---	--	----







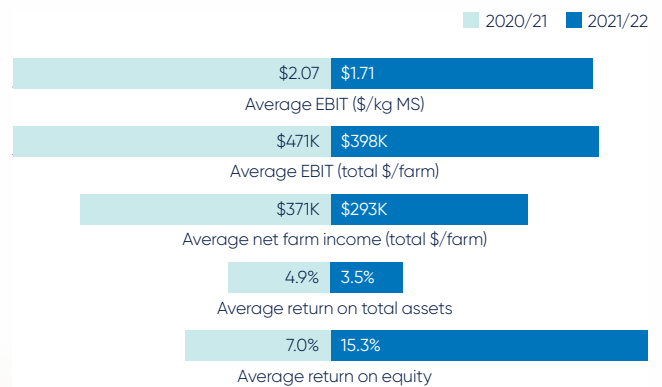
# EXECUTIVE SUMMARY

In 2021/22 the average NSW Farm Monitor profitability declined on the previous year however it was the second highest in the 11-years of the project (accounting for inflation), reflecting the strong performance of many participants with continued high milk prices and strong livestock trading conditions.

The milk price increased to \$9.13 per kilograms of milk solids (\$/kg MS), however higher input costs and supply constraints, including for labour, feed and fertiliser impacted farm business margins in 2021/22.

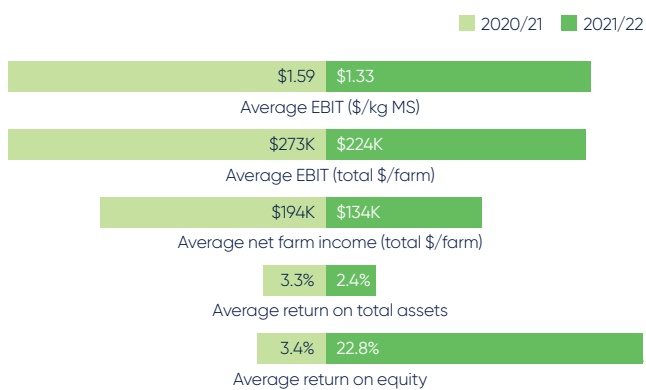
Widespread flooding and prolonged wet conditions throughout much of NSW impacted pasture consumption, fodder conservation and milk production on some farms.

## New South Wales



Despite the very challenging seasonal conditions, many businesses were still able to manage their cashflows to expand and improve their business, by purchasing land, investing in infrastructure and machinery, and increasing business equity (30 of the 36 farm businesses were able to improve their equity position in the last 12 months).

## The North

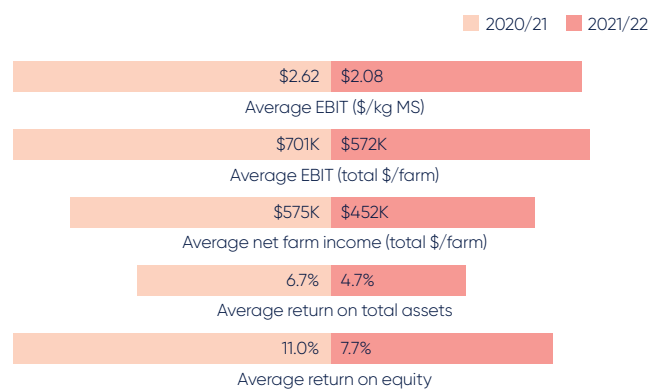


Extremely challenging seasonal conditions with prolonged wet periods and severe and repeated flooding in many areas, meant that despite strong milk incomes and good livestock trading conditions, increases in herd, feed and overhead costs resulted in a decrease in average profit compared to the previous year for participating farms. Gross farm income was the second highest over the 11 years and profitability (average EBIT per kilogram of milk solids) was second highest (accounting for inflation).

Timing of flooding and wet conditions meant many were unable to conserve fodder coming into autumn, sowing was delayed, or impossible or stored silage/hay was lost. Consequently, there was heavy reliance on purchased fodder in much of the region to replace homegrown feed sources. Feed costs increased as a result, but the extent of the increase measured has been tempered due to government grants which are netted off the relevant feed purchases.

Herd costs increased by 14% predominantly as a result of herd health issues due to wet conditions. Increases in overhead costs were primarily due to paid labour costs. Repairs and maintenance costs increased, but due to the availability of government grants provided to assist flood and wet weather affected businesses, the true increase isn't captured in the data due to grants being netted off the relevant expense such as laneway or fencing repairs, where appropriate.

## The South

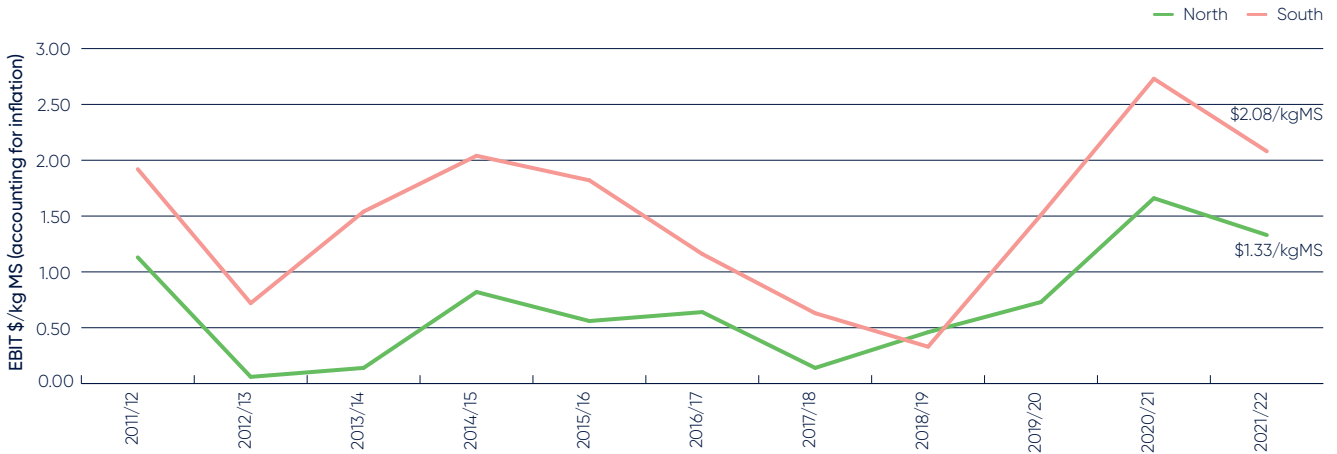


Much of the south experienced flooding and prolonged wet conditions throughout the year, similar to the north. Again, despite strong milk incomes and a 29% increase to livestock trading profit, large increases in costs saw a decline in profit compared to the previous year for participating farms. Gross farm income was the second highest over the 11 years and profitability (average EBIT per kilogram of milk solids) was second highest (accounting for inflation).

Increased use of supplements at higher per unit prices for concentrates and silage were used to manage conditions and the lower homegrown feed production. These costs combined with greater expenditure on overheads saw the third highest total costs in 11-years, which were not covered by higher incomes in 2021/22.

## How does 2021/22 compare?

### Historical Profitability



Average profit (per kg milk solids) for each region in 2021/22 was above the long-term average for the respective regions.

Strong profit results per farm (average \$398,340) across the state, were above the 11-year long term average of \$243,558, but down on the average of \$491,237 (adjusted for inflation) in 2020/21.

### Expectations for profit in 2022/23

Participant farmers were generally optimistic in their outlook for farm business returns in the coming 12 months. Participants in the South were the most optimistic about better returns in 2022/23 (72%), with the North farmers not as optimistic (56%). Seasonal conditions were identified by participants as the greatest risk to their business followed by input costs and labour.

### Milk Price

Milk price increased two per cent on average from 2020/21. Milk income contributed on average, 87% of gross farm income with a slight increase in livestock trading contribution on the previous year.



**New South Wales ↑ 2.1%**  
to \$9.13/kg MS



**The North ↑ 2.9%**  
to \$9.58/kg MS



**The South ↑ 2.0%**  
to \$8.68/kg MS

### Greenhouse gas emissions

The average carbon footprint for New South Wales dairy farm participants was 3,146 tonnes of carbon dioxide equivalents per farm in 2021/22. Over the last five years, larger herd sizes and greater milk production per farm have contributed to increasing average greenhouse gas emissions while emissions intensity has decreased since 2019/20.



---

# Part One: State Overview





State-wide, average profitability in New South Wales was positive and above the 11-year long term average. Strong prices received for milk and livestock generally enabled farm businesses to manage the impact of very wet conditions and higher costs.

Profitability in the North and South was constrained by severe flooding and prolonged wet conditions predominantly along the coastal regions. Inland regions also experienced very wet conditions however not to the extremes of the coastal areas.

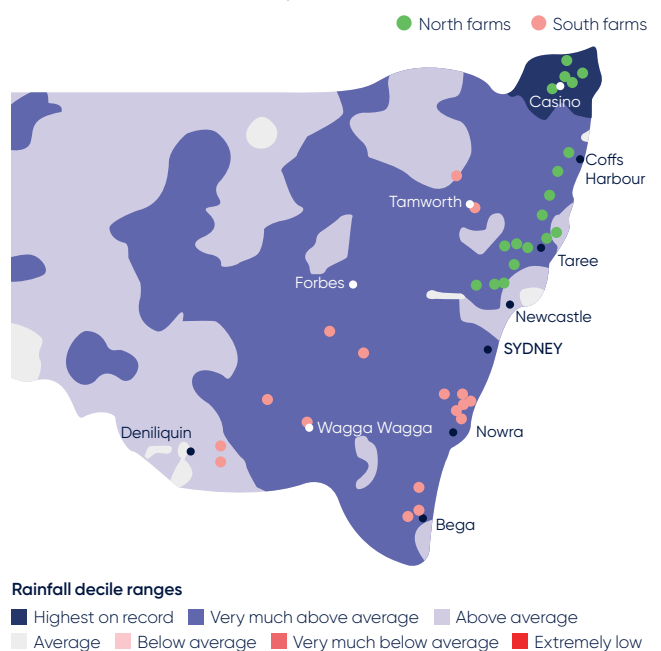
Flooding and extended wet periods resulted in increases in herd costs and feed costs, as a result of loss of pastures and fodder crops as well as an inability to sow at crucial periods during the year. Consequently, there was a greater reliance on purchased feed in many instances to replace homegrown feed. The proportion of direct grazed feed reduced, and farmers replaced this with higher priced and greater quantities of fodder and concentrates.

## Dairying in New South Wales



There were approximately **494** dairy farm businesses in NSW that produced **1.07 billion litres** or **12.5%** of Australia's national milk production in 2021/22.

## Dairy Farm Monitor Project farm locations and rainfall in 2021/22





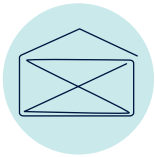
## In 2021/22 farm profitability for the state has been influenced by:



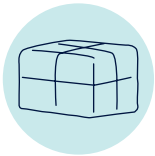
**↑ 2%**  
in average milk price to **\$9.31/kg MS**



**↑ 12%**  
in herd costs to **\$0.47/kg MS**



**↑ 3%**  
in shed costs to **\$0.30/kg MS**



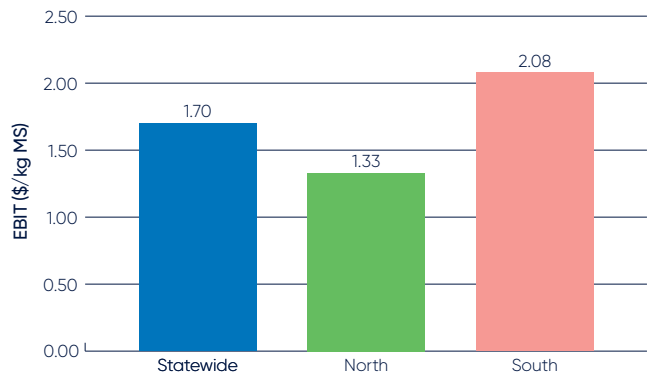
**↑ 8%**  
in total feed costs to **\$4.24/kg MS**



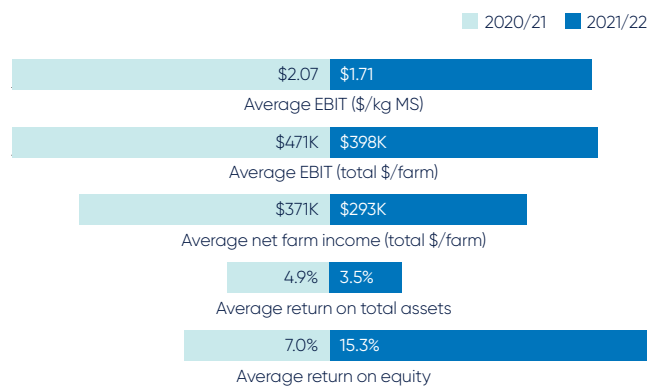
**↑ 10%**  
in overhead costs to **\$3.76/kg MS**

## Profitability

Increased costs across the state in all areas of the business reduced the benefit of positive livestock trading conditions and a higher milk price for the season. Extreme and prolonged wet conditions across much of the state impacted profitability. The state-wide average EBIT per farm was the 2nd highest on record, accounting for inflation.



## In 2021/22, 92% of all NSW participants had a positive profit (33 out of 36)





# PHYSICAL PARAMETERS AND SEASONAL CONDITIONS

Every participating farm received above average rainfall in 2021/22. The timing and volumes of rainfall had severe impacts for farms in NSW, particularly those along the coastal strip and for farms in the far northeast corner who experienced unprecedented flood levels.

Seasonal conditions in the inland regions (north and south) were less severe than along the coastal strip and this was reflected in their farm profitability, although they also experienced some flooding. Seven of the nine farms in the top 25% group were from the inland regions.

The proportion of homegrown feed in the diet declined on average, compared to the 2021/22 year.

## NSW pasture based dairy production

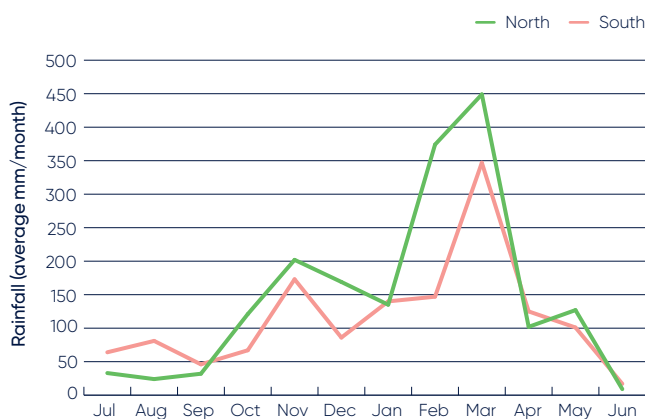
Dairying in NSW is predominantly pasture based. In the north, it is spread along the coastal and hinterland regions and in irrigated inland river valleys. Farms in the north are generally characterised as having moderate to high rainfall, limited irrigation, and a kikuyu/annual ryegrass pasture base with some use of summer forage crops. In the south, farms are located along the coast and inland river systems. They are generally characterised by lower rainfall, mainly irrigated perennial and annual pastures, greater use of forage crops, larger herds and bigger farms.

Whilst this grouping reflects general similarities among farm systems and influences on milk pricing across NSW, there is a wide range of farm characteristics within each group.

## Rainfall

Extreme and prolonged wet conditions influenced the physical and financial performance in each of the regions. The preceding conditions as well as the conditions prevalent in a particular month influence feed availability and conditions to harvest pastures and crops as well as their timely renovation or sowing.

Figure 1 Monthly rainfall 2021/22



Significant and extreme rainfall events in late spring through to the end of autumn (Figure 1) provided challenges for harvesting pasture either by direct grazing or for fodder conservation in the north and south. In many instances it meant loss of a fodder crop in the paddock or loss of stored fodder due to flooding. It also resulted in farmers unable to sow autumn pastures at the usual time, resowing multiple times or sowing extremely late. Access to paddocks for grazing was limited in some regions due to the prolonged wet. Flooding and continued wet weather impacted animal health issues such as lameness and mastitis as well as farm infrastructure such as laneways and fences.

The rainfall deciles map on page 8 shows dairying regions in NSW experienced 'average' to 'highest on record' annual rainfall across the year. Extreme events and a full soil moisture profile meant much of this rain was not 'effective' rain, however it resulted in increased water storage levels across the state.

## Feed consumption and harvest

With wetter conditions and lower homegrown feed availability in each region, the average tonnes of homegrown feed reduced by 0.8t DM/ha across the state (Figure 2). Many farms supplemented dairy herds with additional concentrates and fodder (at relatively higher prices) to maintain milk production.

The ability to grow and harvest feed may have also been impacted by lower fertiliser applications due to cost and restricted ability to utilise feed if it was grown (wet soils, potentially poorer quality and pasture damage).

## Feeding system

Moderate to high bail feeding systems were the most popular feeding system in 21/22 (Figure 3). There is an increasing trend across NSW to farmers investigating and transitioning towards more intensive feeding systems, particularly in the south/inland regions. The north has 61% with a moderate-high bale system and 28% using a partial mixed ration (PMR) system. The south has no farms in the dataset with a low bail feeding system with 67% using a moderate-high bale system and a combined 23% using a hybrid or total mixed ration system.

Information on feeding systems was first collected in 2020/21 and the purpose is to capture the intensification of dairy feeding systems in NSW over time. The type of feeding system employed reflects a longer-term decision made by the business operator to manage a certain type of feeding system, rather than a short term one to manage adverse seasonal conditions in a given year, i.e., wet soils management.

## Fertiliser application

Total nutrient application on the milking area reduced considerably in 2021/22. The significant increase in fertiliser prices and adverse (wet) seasonal conditions saw farmers decide to apply lower quantities of fertiliser. The level of nutrient applied on some individual farms may seem comparatively high. This was generally a result of wet conditions where farmers had to resow crops and pasture multiples times and thus doubled up on fertiliser applications or where they made a strategic decision to rejuvenate pasture and re-establish homegrown pasture as quickly and effectively as possible.

In comparison to the previous year, Figure 4 shows that in 2021/22:

- Nitrogen applied was 173kg/ha, a 25% reduction
- Phosphorous applied was 18kg/ha, a 10% reduction
- Potassium applied was 23kg/ha, a 39% reduction
- Sulphur applied was 18kg/ha, a 31% reduction

Figure 2 Estimated tonnes of homegrown feed removed

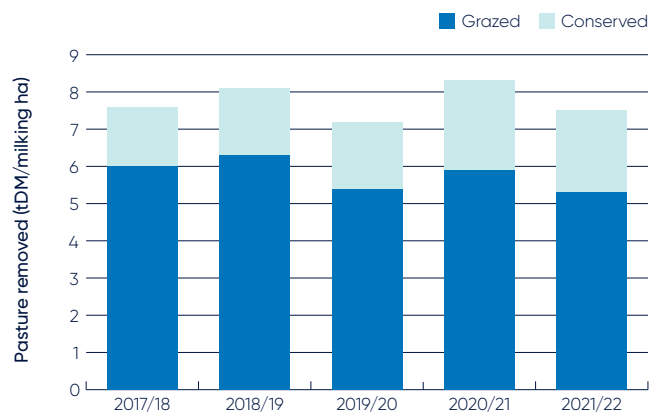


Figure 3 Type of feeding systems

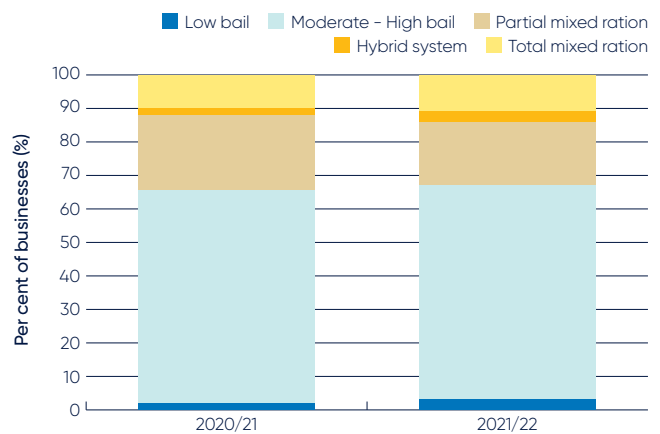
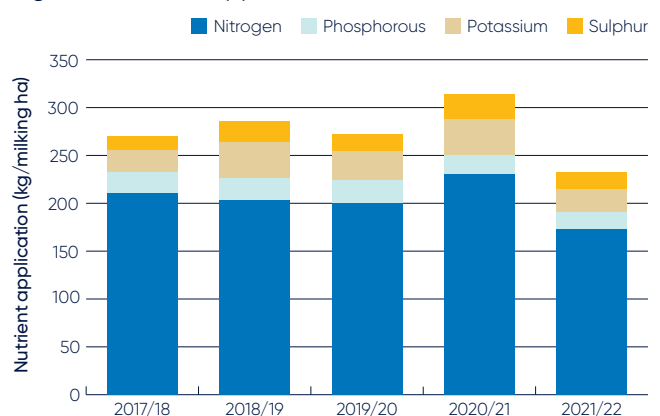
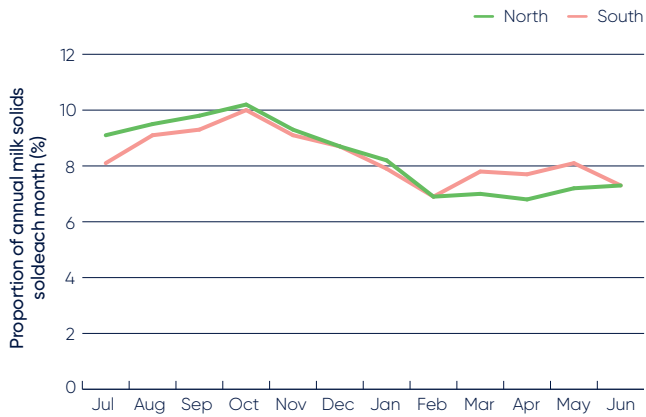


Figure 4 Nutrient application



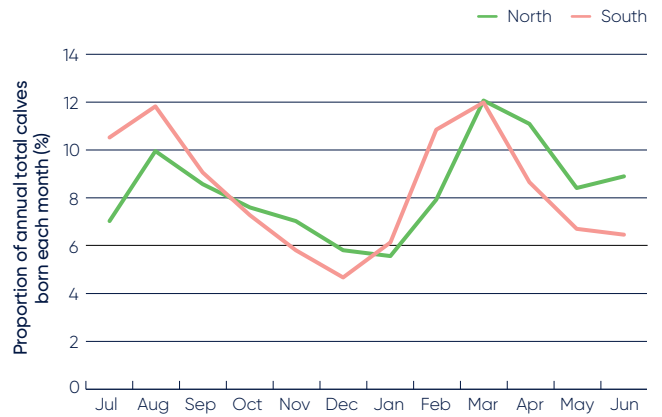
**Figure 5** Monthly distribution of milk sold



### Milk solids sold

Monthly distribution of milk sold across the two regions in NSW reflects a flatter milk supply requirement required by processors for the liquid milk market (Figure 5). Production across the two regions is very similar across the year. Similar to 2020/21, another relatively wet year, resulted in a dip in Autumn production in the north with the impact of flooding on herds.

**Figure 6** Monthly distribution of calving



### Calving pattern

Calving pattern for each region is shown in Figure 6. It reflects that most herds in NSW calve year-round, with slightly more calving occurring during the Spring and Autumn periods (related to feed availability). There is slightly less calving in the hotter summer period, which is becoming a strategic and conscious decision on some farms.





# WHOLE FARM ANALYSIS

On average, farm profitability at a state-wide level decreased in 2021/22 – reflected in a lower average Earnings Before Interest and Tax (EBIT) in both regions. EBIT was positive on 33 out of the 36 participating farms (92%).

The highest average milk price (nominal) in 11 years of NSW DFMP did not necessarily lead to increased profitability across all NSW participants. State-wide, milk income and gross farm income was higher than 2020/21.

State-wide, variable costs increased by 8% (primarily due to feed costs), with overhead costs higher by 10%, however there is considerable variation between the regions in these increases.

## Physical parameters

Number of milkers (hd)	2020/21	2021/22
State	371	375
North	309	312
South	442	437

WUE (t DM/100mm/ha)	2020/21	2021/22
State	0.5	0.4
North	0.4	0.3
South	0.6	0.6

Usable area (ha)	2020/21	2021/22
State	365	381
North	321	365
South	416	398

Milking cows per usable ha	2020/21	2021/22
State	1.3	1.3
North	1.3	1.2
South	1.3	1.3

Milk solids sold (kg MS/cow)	2020/21	2021/22
State	522	518
North	531	461
South	569	575

Milk solids sold (kg MS/ha)	2020/21	2021/22
State	649	644
North	596	557
South	710	731

Homegrown feed as % of ME consumed	2020/21	2021/22
State	57	55
North	62	58
South	52	51

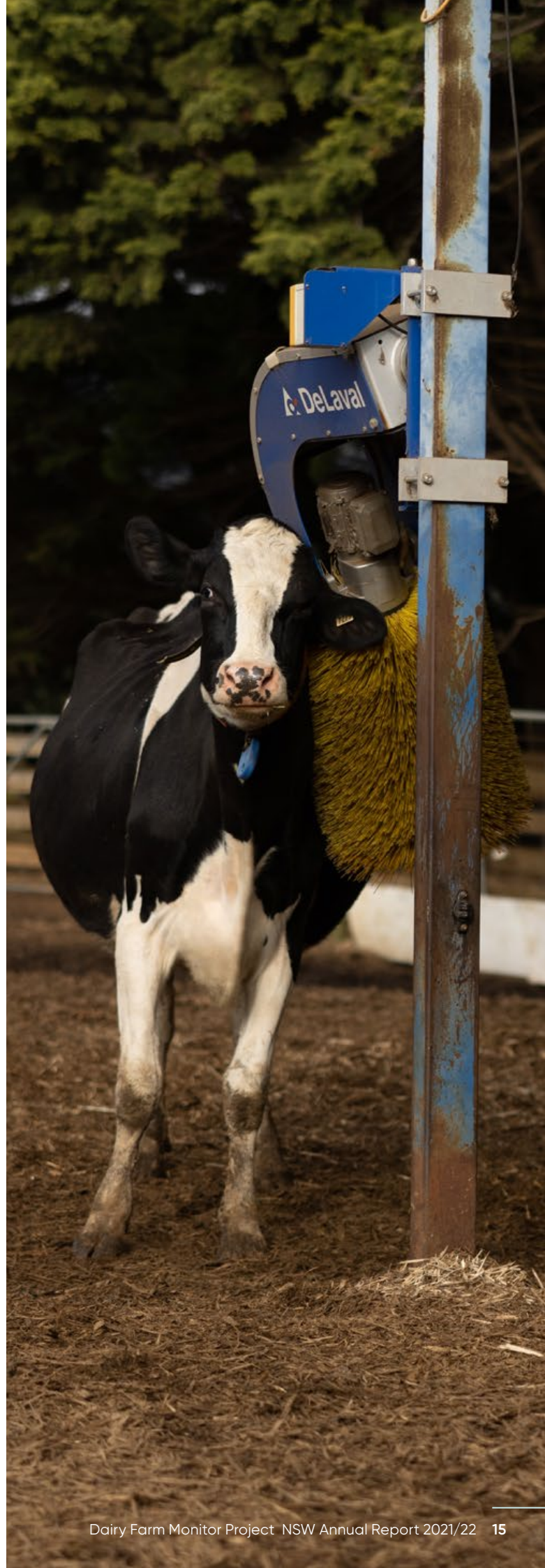
Labour efficiency (cows/FTE)	2020/21	2021/22
State	74	71
North	67	64
South	83	78

Labour efficiency (kg MS/FTE)	2020/21	2021/22
State	38,438	36,747
North	31,372	29,378
South	46,621	44,115



## Financial parameters

Income \$/kg MS	2020/21	2021/22
<b>Milk income (net)</b>		
State	8.94	9.13
North	9.31	9.58
South	8.51	8.68
<b>Livestock trading profit and other income</b>		
State	1.19	1.35
North	1.32	1.48
South	1.03	1.22
<b>Gross farm income</b>		
State	10.12	10.48
North	10.63	11.06
South	9.53	9.90
<b>Costs \$/kg MS</b>		
<b>Variable Costs</b>		
State	4.63	5.01
North	5.15	5.46
South	4.03	4.56
<b>Overhead costs</b>		
State	3.43	3.76
North	3.90	4.27
South	2.88	3.26
<b>Earnings before interest and tax</b>		
State	2.07	1.71
North	1.59	1.33
South	2.62	2.08





## Earnings before interest and tax

Higher costs and challenging seasonal conditions contributed to the lower average farm profitability (measured by earnings before interest and tax, EBIT) in 2021/22, compared to the previous year. In both regions, the prolonged and extreme wet constrained some farmers' ability to take advantage of the highest milk price received in 11 years of the DFMP and the strong livestock trading conditions. These conditions led to increased herd and feed costs that negatively impacted profitability, as did increases in labour costs (Figure 7).

## Return on total assets

A positive return on total assets (ROTA) was recorded for 33 of the 36 participants (Figure 8). In 2021/22 average ROTA reduced to 3.5% compared to 4.9% the previous year. The graph shows a wide range in performances within the two regions with flooding and prolonged wet conditions dramatically impacting the performance of several of the North farms.

## Return on Equity

A wide range in return on equity (ROE) performance was observed across the regions, with 30 of the 36 participants achieving a positive ROE. Average ROE was 15.3% in 2021/22, up from 5.1% in 2020/21.

Business structure will impact return on equity and in the NSW DFMP dataset there are a number of farms that operate with significant amounts of leased assets that can drive a very high ROE.

Figure 7 Distribution of farms by EBIT

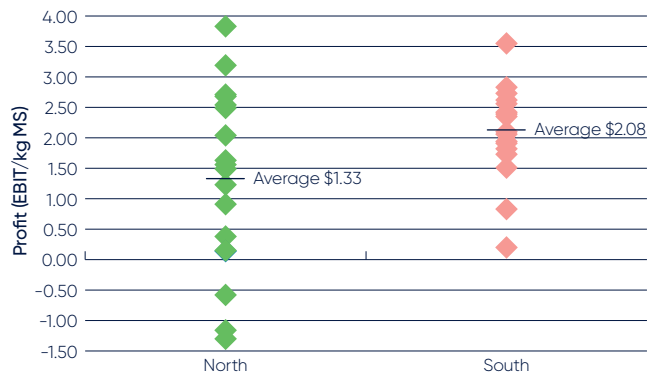


Figure 8 Distribution of farms by ROTA

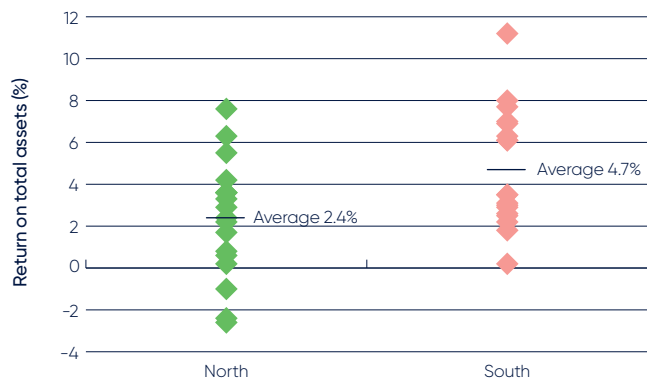
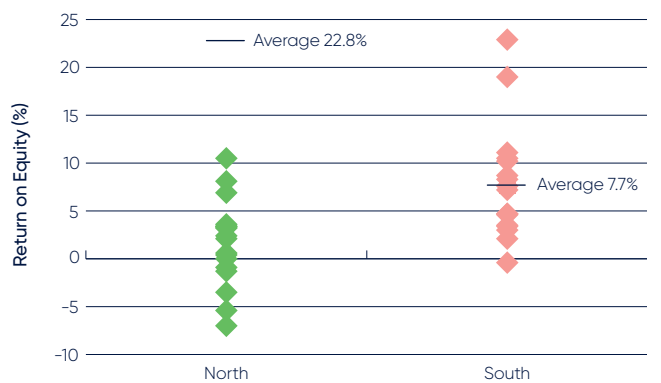


Figure 9 Distribution of farms by ROE



\* One farm in the North operates with all leased assets and has a very high ROE. Dot point is not represented on graph due to scaling.

---

## Part Two: The North



# PERFORMANCE

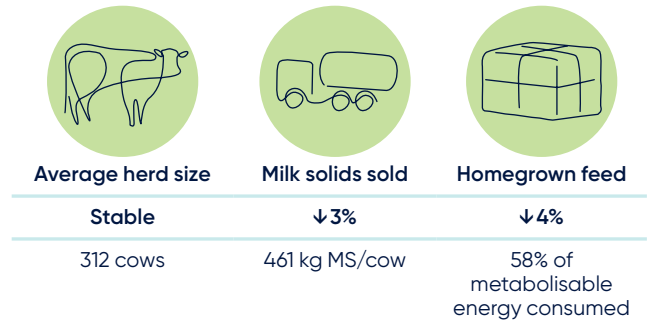
## Dairying in the North

There were 18 participating farms in the North dataset, down from 22 the year before. Seasonal conditions were extremely challenging due to 'above average' to 'highest on record' rainfall, significant flooding and prolonged wet periods on the back of a very wet 2020/21 year.

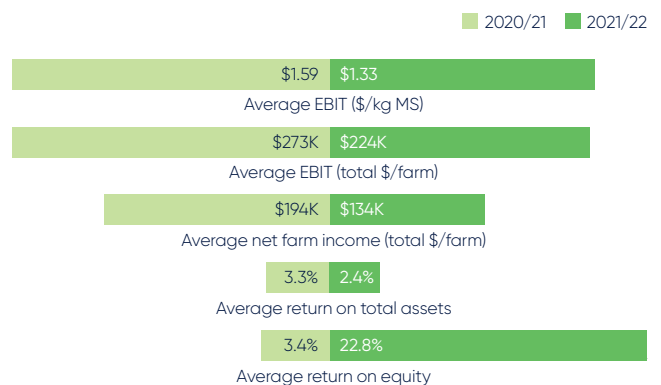
The timing of these events and duration meant fodder conservation and pasture/crop sowing was impacted and some stored fodder lost due to floods, resulting in a reliance on purchased fodder for many businesses. Infrastructure damage (laneways, fences etc) was also an issue of significance on many farms. Impact on herd health saw significant drops in the North Coast region's milk supply with a 13.8% and 15.3% decline in year on year monthly production for May and June respectively. Government grants assisted many farms purchase fodder and undertake repairs and maintenance due to the flooding.

## Physical farm characteristics

While the average herd size of the North dataset increased minimally to 312 cows, milk produced per cow declined from 474kg MS/cow to 461kg MS/cow. Farms were dependant on more imported feed relative to the previous year because of wet conditions.



## In 2021/22, 15 of the 18 participants recorded a positive return on total assets



### Farm profitability was influenced by:



**↑ 3%**  
in average milk price to **\$9.58/kg MS**



**↑ 12%**  
in herd and shed costs to **\$0.93/kg MS**

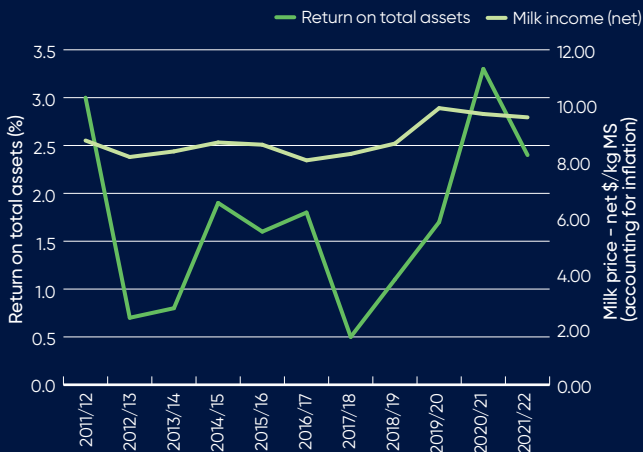


**↑ 5%**  
in total feed costs to **\$4.54/kg MS**



**↑ 9%**  
in total overhead costs to **\$4.27/kg MS**

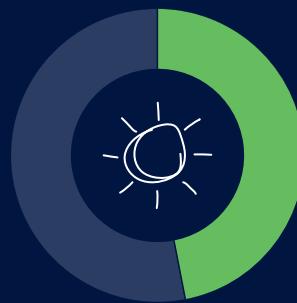
### Return on total assets and milk price:



### FUTURE EXPECTATIONS 2022/23

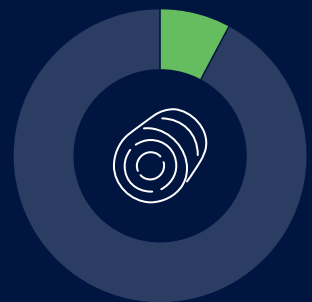
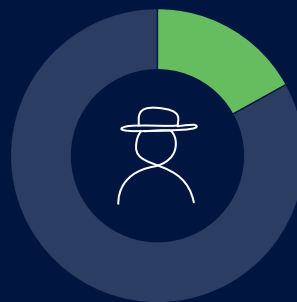
Of the participant farms in the North, 84% expect returns to improve or remain stable. The remaining farmers are expecting declining returns.

### Concerns as reported by farm businesses:



Climate/seasonal conditions  
**47%**

Input costs  
**25%**



Labour  
**17%**

Pasture/fodder  
**8%**



# WHOLE FARM ANALYSIS

Gross farm income (nominal) increased from the previous year with higher milk income and increased livestock trading income.

Increased use of purchased feed (concentrates, silage and hay) to manage challenging (wet) seasonal conditions and lower homegrown feed production across the year.

Increased costs, particularly herd, feed and labour costs impacted farm profitability.

## Gross farm income

Higher gross farm income (nominal) was recorded in 2021/22 than the previous year. When accounting for inflation, it is the second highest for the North over the 11 years of the DFMP. The key drivers were a higher milk price and increased livestock trading income.

## Variable costs

Variable costs increased by \$0.31/kg MS, with higher total feed costs being the largest component followed by increases to herd costs.

Feed costs increased by \$0.21/kg MS. While the cost of all purchased feed was lower on average on a \$/tDM basis there was an increase in the proportion of purchased feed in the herd diet, thus an increase reflected in total costs. On a \$/kgMS basis the cost of purchased feed and agistment increased 7.5%. Grants provided to flood and wet weather affected farmers have been netted off feed costs where applicable, consistent with DFMP methodology. Although fertiliser use reduced significantly (20%), the total money spent on fertiliser increased by around 3% – reflecting the historically high prices for fertilisers per unit of product. Fuel and oil costs saw a 39% increase in cost per kgMS, reflective of higher pricing per litre.

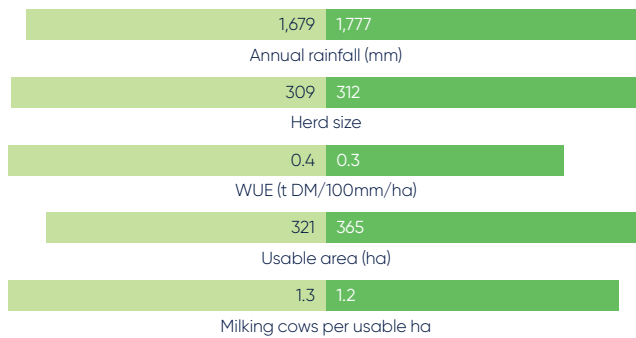
The challenging conditions saw half of the farms drawing down on fodder reserves over the course of the year, while the other half were able to build feed inventory by the end of the year.

Herd and shed costs accounted for the remaining \$0.10/kg MS increase in variable costs. Higher herd costs included increased spending in AI & Herd testing (including sexed semen use), animal health (due mainly to wet conditions) and calf rearing. Shed costs increased due to increased cost of dairy supplies. Energy efficient technology (mostly solar) has been adopted on some farms to mitigate increasing grid energy costs, which will potentially impact shed power costs.

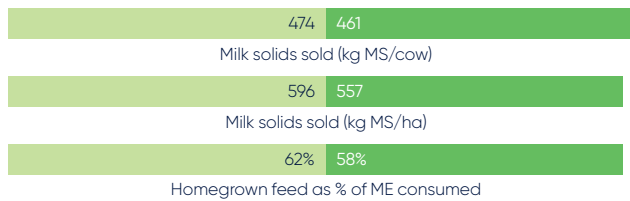
## Physical parameters

2020/21 2021/22

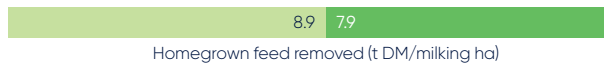
### Rainfall, area and cows



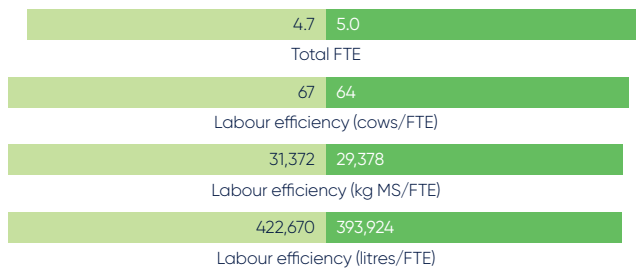
### Milk production



### Pasture production



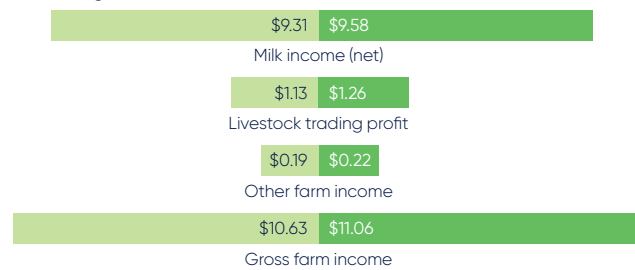
### Labour use and efficiency



## Financial parameters

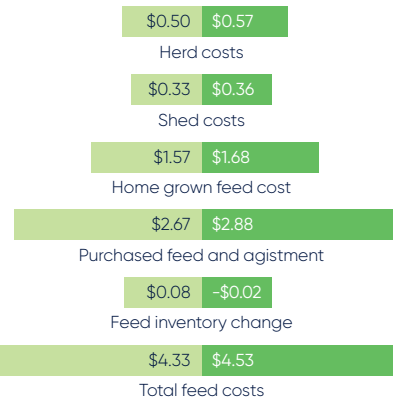
2020/21 2021/22

### Income (\$/kg MS)

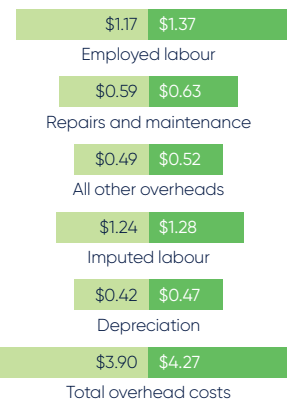


### Costs (\$/kg MS)

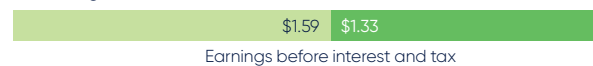
#### Variable costs



#### Overhead costs



### Profit (\$/kg MS)



## Overhead costs

Total overhead costs increased on average by 9% in the North in 2021/22.

Increased spending on employed labour was the largest component of the increase in cash costs. Almost all farms increased the hourly rate for employed labour. Repairs and maintenance costs increased in many instances due to the impact of flooding, although for the non-flood affected farms, higher milk prices have facilitated opportunity in this area. It should also be noted that where farmers have received grants for flood damage and this has been spent on R&M, the grants have been netted off the cost, consistent with DFMP methodology. All other cash and non-cash overhead costs saw increases with the high value of assets on some farms driving an increase in the non-cash cost of depreciation.

## Earnings before interest and tax

In 2021/22, 15 of the 18 participants in the North had a positive EBIT (Figure 10). Average EBIT per farm (total dollars) was the second highest in the 11-years of the DFMP, accounting for inflation. Average EBIT (\$/kg MS) was lower year-on-year, and again the second highest on record, accounting for inflation.

## Return on total assets and equity

Average ROTA decreased slightly to 2.4% in 2021/22 from 3.3% 2020/21. The lower returns were largely a function of the lower total EBIT rather than being impacted by increasing values on total assets managed across participant farms.

Average ROE in 2021/22 increased relative to the previous year. Equity levels increased on the majority of farms during the last 12 months.

With the cost of financing lower than the returns from accessing additional assets (e.g., land, dairy upgrades, and major infrastructure), 6 of the 18 participants recorded higher ROE than ROTA (Figure 11). These farmers have been able to grow their business.

Figure 10 Average EBIT per kg ms – North

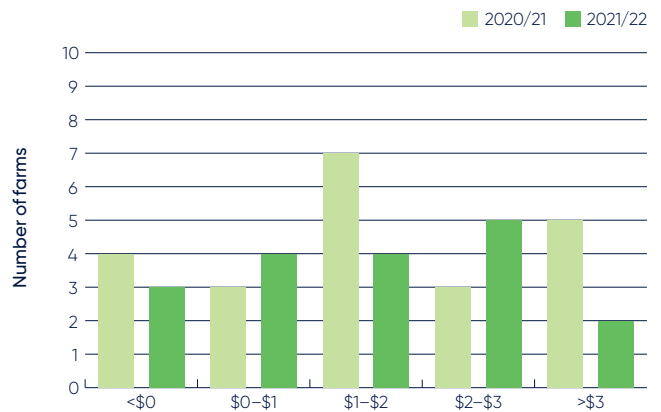
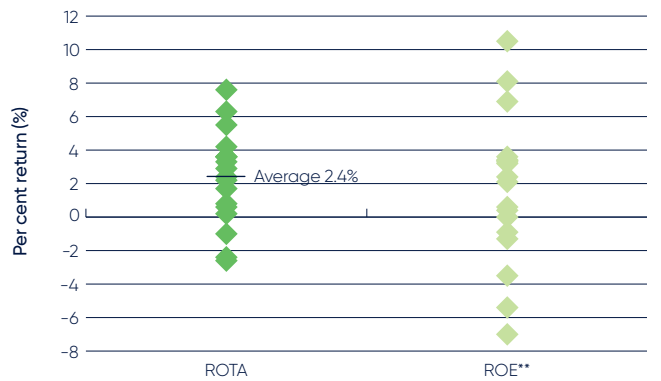


Figure 11 2021/22 Average returns – North\*



\* One farm operates with all leased assets and has a very high ROE. Dot point is not represented on graph due to scaling.

\*\* Average ROE of 22.8% is not represented on graph due to scaling.



# FEED CONSUMPTION AND FERTILISER

## Feed consumption and pasture harvested

Direct grazing on the milking area (on average) reduced by around 0.6t DM/milking ha. The amount of pasture conserved reduced by 0.4 tDM/milking ha compared to the previous year, consequently the total tonnes of dry matter harvested on the milking area decreased by 1 tDM/ha (Figure 12).

With the North experiencing rainfall that was 'above average' to 'the highest on record' many farms were unable to conserve fodder or graze pastures as planned. This was particularly so in the coastal and hinterland regions. Several of the more inland farms experienced very good conditions for fodder conservation and grazing, with less irrigation required.

On average, these challenging wet conditions saw an increase in the use of purchased hay and silage. As a proportion of the diet, homegrown feed (grazed and conserved pasture) accounted for 58% of the metabolisable energy consumed, lower than the previous year's average of 62%.

## Feeding system

11 farms (61%) in the North employed a moderate to high bail feeding system and 5 farms (28%) operate a partial mixed ration (PMR) system. The remaining farms were a low bail and total mixed ration (TMR) feeding system in 2021/22 (Figure 13).

## Fertiliser

With the challenging wet conditions in the North and high fertiliser prices (per unit of nutrient), the amount of fertiliser applied on the milking area (Figure 14) was lower than the previous year and the fourth lowest over the last five years. The 2019/20 year was a year impacted by severe drought conditions and consequently lower nutrient usage as well.

The amount of money spent on fertiliser in 2021/22 increased by 2% despite farms applying 27% less of total nutrient on average per usable hectare. As a reflection of the wet conditions and many farms unable to undertake 'normal' autumn sowing and get on paddocks to conserve fodder throughout the year there was a noticeable decline of 40% in potassium application on average across the usable area. Nitrogen application on average was down 24% across the usable area.

Figure 12 Average homegrown feed removed – North

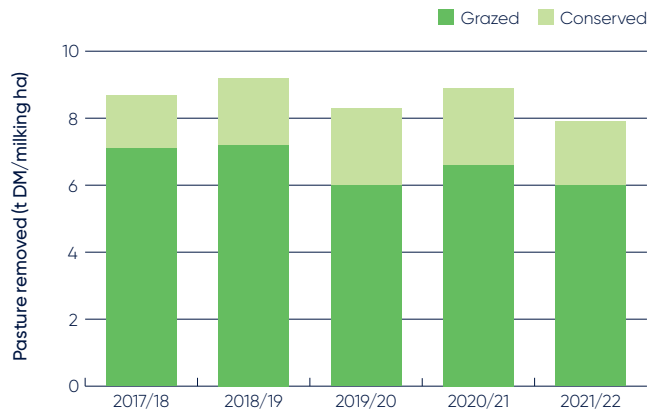


Figure 13 Feeding system types – North

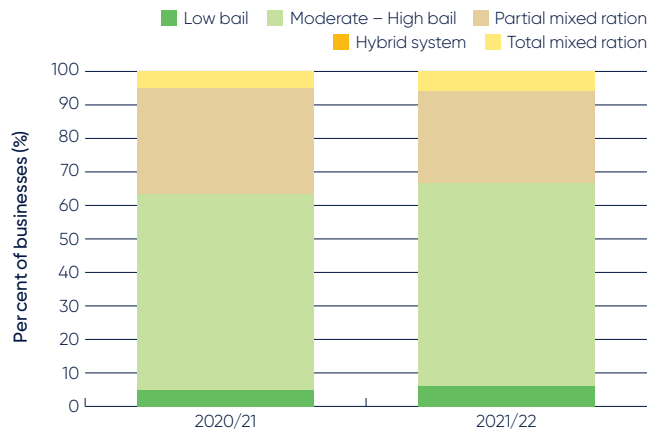
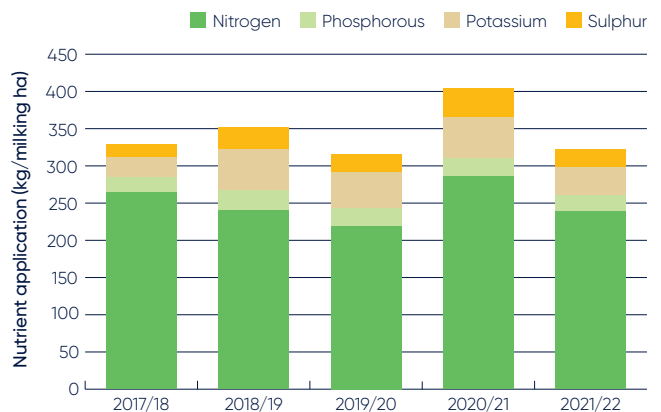
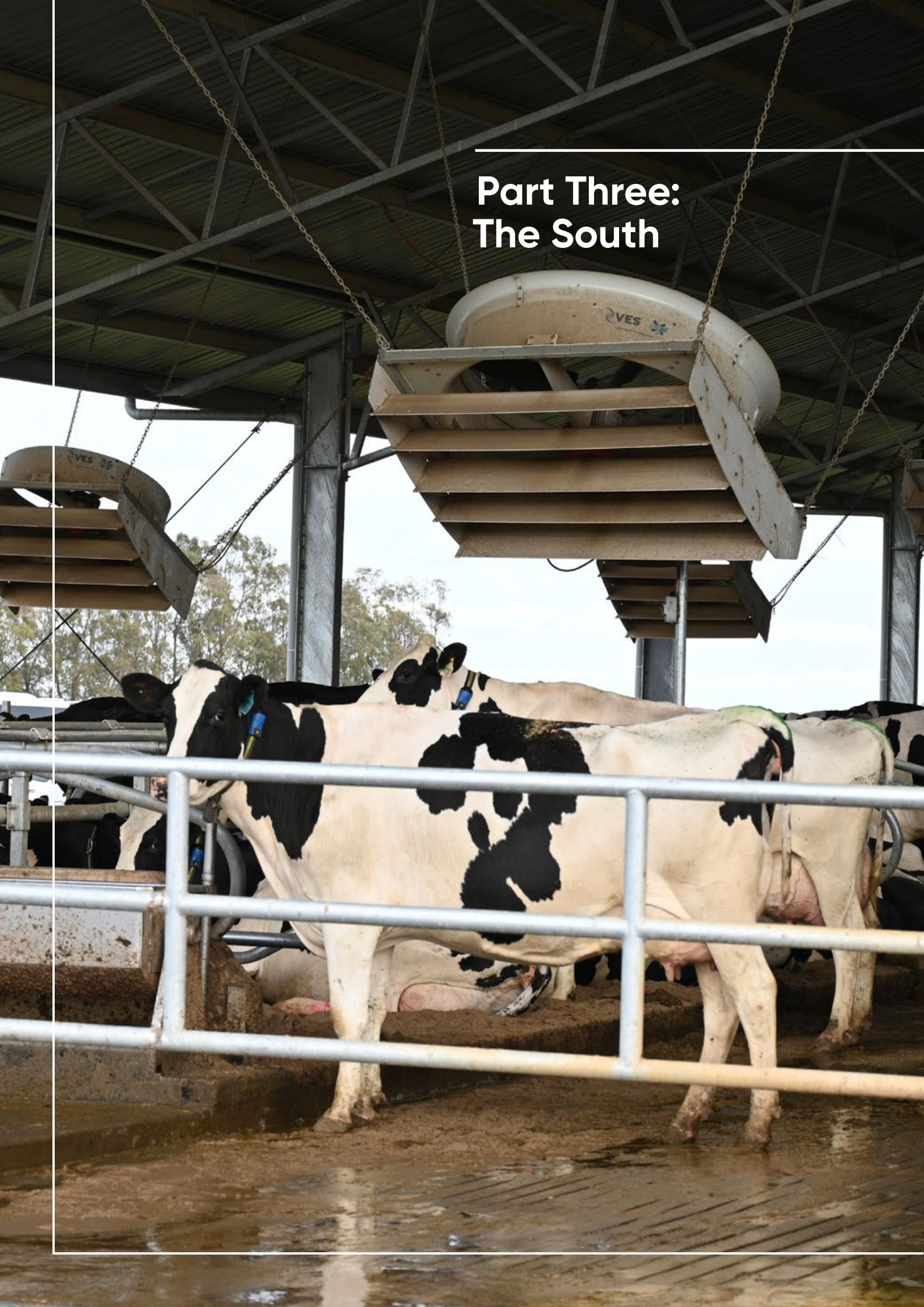


Figure 14 Average nutrient application – North



## Part Three: The South





# PERFORMANCE

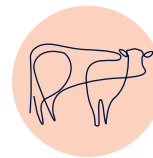
## Dairying in the South

There were 18 participating farms in the South dataset, down from 19 the year before. Seasonal conditions in the 2021/22 year were extremely challenging due to 'above average' to 'very much above average' rainfall, flooding in many areas and prolonged wet periods on the back of a very wet 2020/21 year.

The timing of these events and duration meant fodder conservation and pasture/crop sowing was impacted, with some businesses requiring more purchased fodder to meet the feed deficit. Infrastructure damage (laneways, fences etc) was also an issue of significance on many farms. Government grants assisted many farms purchase fodder and undertake repairs and maintenance due to the flooding.

## Physical farm characteristics

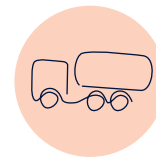
The average herd size in the dataset declined marginally to 437 cows and milk produced per cow was relatively stable going from 578 to 575kg MS/cow. On average a similar amount of feed was imported to the previous year.



Average herd size

Stable

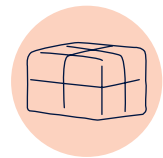
437 cows



Milk solids sold

Stable

575 kg MS/cow

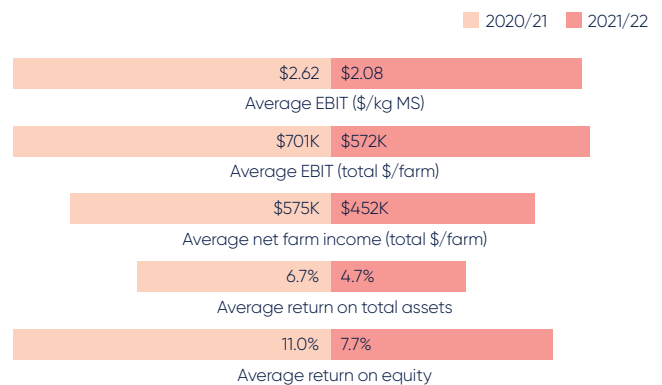


Homegrown feed

↓

51% of metabolisable energy consumed

## In 2021/22, all participants (18 out of 18) recorded a positive return on total assets



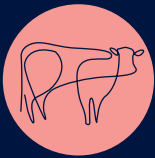


In 2021/22 farm profitability has been influenced by:



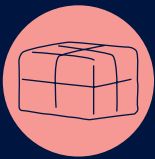
**↑ 2%**

in average milk price to **\$8.68/kg MS**



**↑ 7%**

in herd and shed costs to **\$0.61/kg MS**



**↑ 14%**

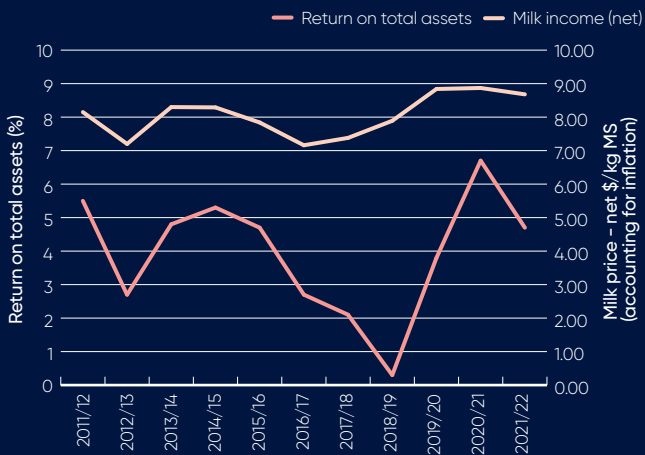
in total feed costs to **\$3.95/kg MS**



**↑ 13%**

in overhead costs to **\$3.26/kg MS**

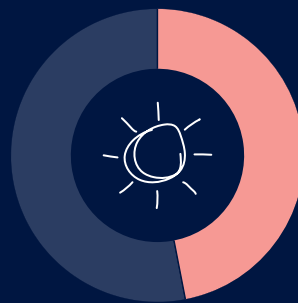
### Return on total assets and milk price:



### FUTURE EXPECTATIONS 2022/23

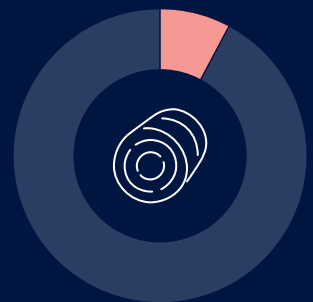
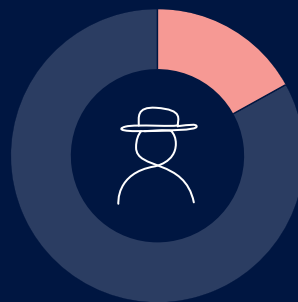
72% of farmers expect business returns to improve with 22% expecting returns to remain stable and 6% expecting a decline in returns.

### Concerns as reported by farm businesses:



Climate/seasonal conditions  
**47%**

Input costs  
**25%**



Labour  
**17%**

Pasture/fodder  
**8%**



# WHOLE FARM ANALYSIS

Gross farm income increased in the South from the previous year with a higher milk price and increased livestock trading income.

Homegrown and purchased feed costs increased on the 2020/21 year on a \$/kgMS basis. Total feed costs were offset by a negative feed inventory change, indicating farms had more stored feed on hand at the end of the year, on average. However, the increase in total feed costs for the year impacted on profitability.

Increasing labour costs had a continued impact on driving up overhead costs for most businesses.

## Gross farm income

Higher gross farm income was recorded in 2021/22 than the previous year and was the second highest on record in the 11-year history of DFMP (\$/kg MS), accounting for inflation. This was due to increased milk income and livestock trading profit. Increased income did not fully offset higher costs.

## Variable costs

Higher purchased feed and agistment costs were the main reason for the increased variable costs in 2021/22 (a \$0.22/kg MS increase from 2020/21), with higher homegrown feed costs contributing an extra \$0.17/kgMS on the previous year. On average, there was only slightly more purchased feed fed per cow (concentrates, hay, silage and 'other feed'), however the average per unit price of the purchased feeds (particularly concentrates) increased the average cost per kgMS.

While the amount of fertiliser applied decreased, high fertiliser prices meant the per unit cost of homegrown feed increased. There were also general increases in costs across hay & silage making, pasture improvements, fuel and oil, but decreased irrigation costs due to less irrigation required due to the season.

Fodder conservation and use was mixed in the South in 2021/22. Five farms used their fodder reserves to manage the challenging seasonal conditions, while 13 farms were able to build reserves over the course of the year.

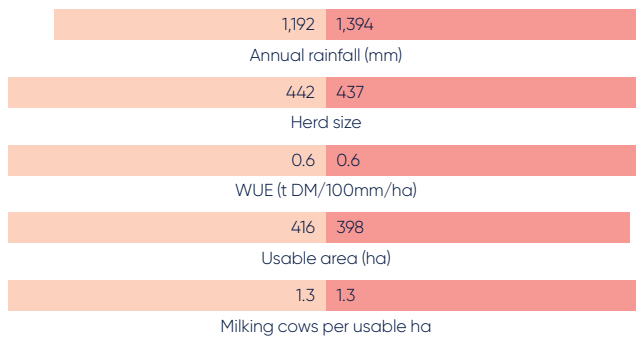
There were slightly higher costs for AI and herd testing with increased use of genomics and sexed semen. Shed power also increased on average. Energy efficient technology (mostly solar) has been adopted on some farms to mitigate increasing grid energy costs.



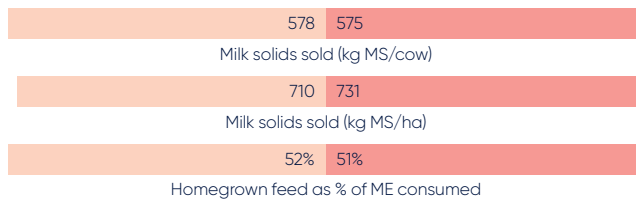
## Physical parameters

2020/21 2021/22

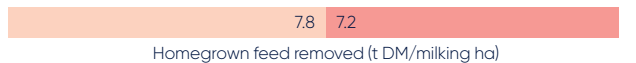
### Rainfall, area and cows



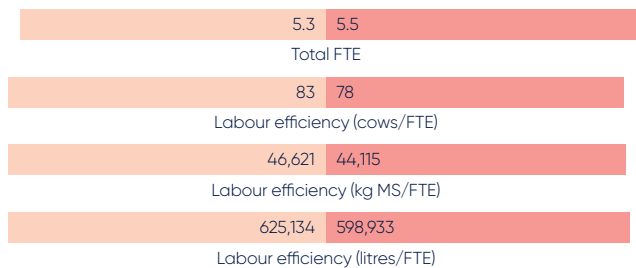
### Milk production



### Pasture production



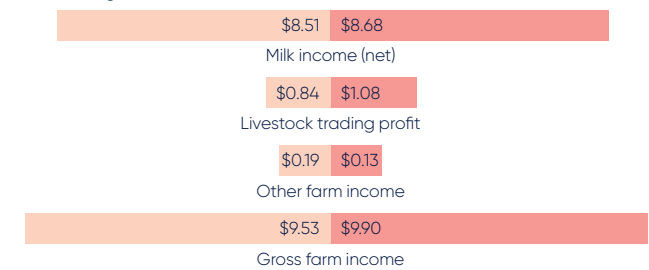
### Labour use and efficiency



## Financial parameters

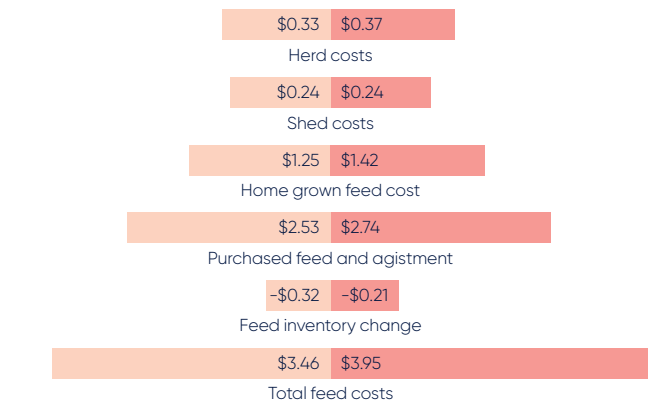
2020/21 2021/22

### Income (\$/kg MS)

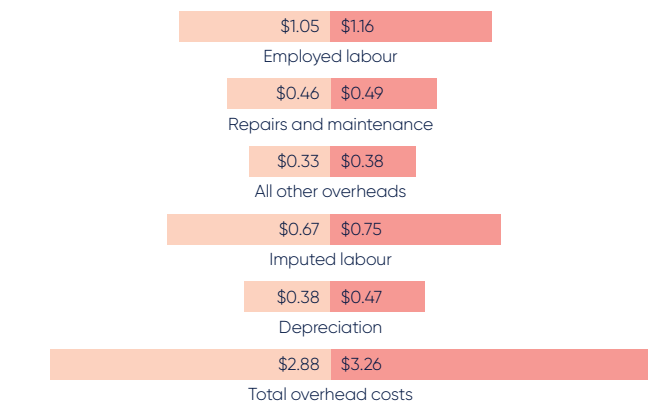


### Costs (\$/kg MS)

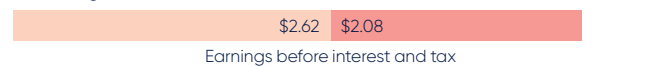
#### Variable costs



#### Overhead costs



### Profit (\$/kg MS)



## Overhead costs

Increased spending on employed and imputed labour (non-cash cost) of a combined \$0.19/kg MS had the greatest impact on the increase in overhead costs. The high value of assets on some farms has seen an increase in the non-cash cost of depreciation. Some of this increase is due to the separation of significant buildings on farms in 2021/22 to ensure depreciation is being captured accurately and allowing sufficient allocation to asset replacement in the future.

## Earnings before interest and tax

In 2021/22, average EBIT (per farm) was lower on the South farms than the previous year, but all 18 were positive.

The average EBIT/kg MS in the South remains above the long-term average and ranks third in the 11 years of the DFMP, accounting for inflation.

## Return on total assets and equity

The lower EBIT performance, combined with the higher asset values observed on the majority of farms, contributed to the lower ROTA in 2021/22. Asset values increased due to growth in the value of land and building assets, farmers holding onto more livestock and increased capital expenditure on infrastructure and machinery.

Equity levels increased on most farms during the last 12 months. The higher asset valuations were greater than the increased liabilities resulting in higher equity levels (total \$ and percentage terms).

The cost of financing was lower than the returns from accessing the additional assets (e.g., land), and 15 of the 18 participants recorded higher ROE than ROTA (Figure 16). These farmers have been able to grow their business.

Figure 15 Average EBIT per kg ms – South

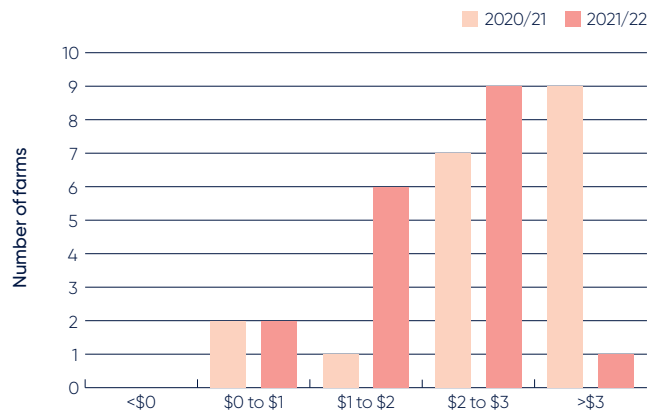
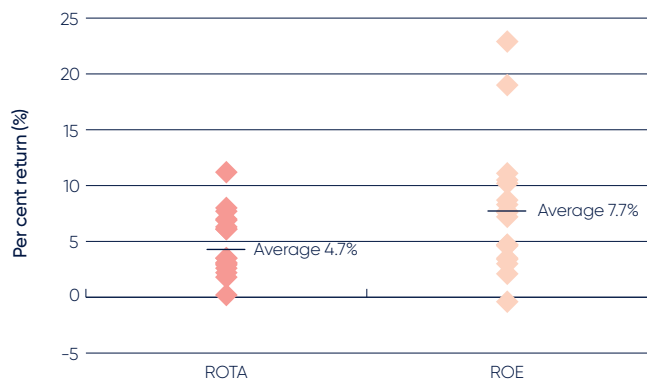


Figure 16 2021/22 Average returns – South



# FEED CONSUMPTION AND FERTILISER

## Feed consumption and pasture harvested

Farms in the South show a wide range of feeding systems. In 2021/22, directly grazed pasture was not the main source of metabolisable energy on all farms in this region with twenty-three percent of farms operating a more intensive feeding system, being hybrid or total mixed ration (TMR) systems. Only 2 farms had 50% or more of their energy sourced from directly grazed pasture.

Direct grazing on the milking area (on average) reduced by 0.4 tDM/ha and the amount of pasture conserved reduced by 0.2 tDM/milking ha. Consequently, the total tonnes of dry matter harvested from the milking area decreased by 0.6 tDM//ha (Figure 17).

As a proportion of the diet, homegrown feed (grazed and conserved pasture) accounted for 51% of the metabolisable energy consumed, compared to 52 per in the previous year.

This region covers a large area (Murray, Riverina, Far South Coast, South Coast and Central Inland areas) which often experience very different seasonal conditions. On the whole it was a very wet year with all dairying areas receiving 'above average' to 'very much above average' rainfall. During Spring, the southern coastal regions generally experienced good conditions enabling silage making, while inland there was flooding in the Cowra/Forbes region which hampered silage production some of which tended to be of lower quality. In the late summer, early autumn period extremely wet conditions including flooding provided very challenging conditions along the coast. Late autumn saw these challenging conditions spread to the inland regions.

On average, the conditions saw farmers increase fodder purchases with some farms also increasing the quantity of concentrates purchased to maintain milk production during this period.

## Feeding system

Moderate to high bail was the dominant feeding system (12 farms) of surveyed farms. The remainder of the farms were a mix of partial mixed ration (11%), hybrid (6%) and total mixed ration (17%). The majority of these more intensive feeding systems are in the inland regions of the south (Figure 18).

## Fertiliser

The total amount of fertiliser applied per milking hectare (Figure 19) was 32% lower as a result of the wet conditions. The cost of fertiliser per unit of nutrient increased, and participants responded by using less fertiliser but the amount spent still increased by 33% compared to the previous year.

Figure 17 Average homegrown feed removed – South

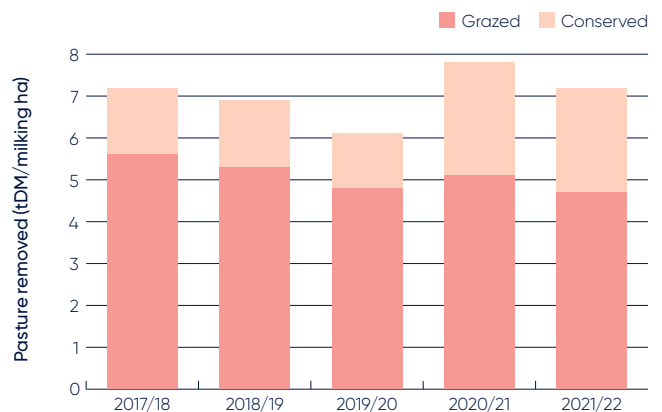


Figure 18 Feeding system types – South

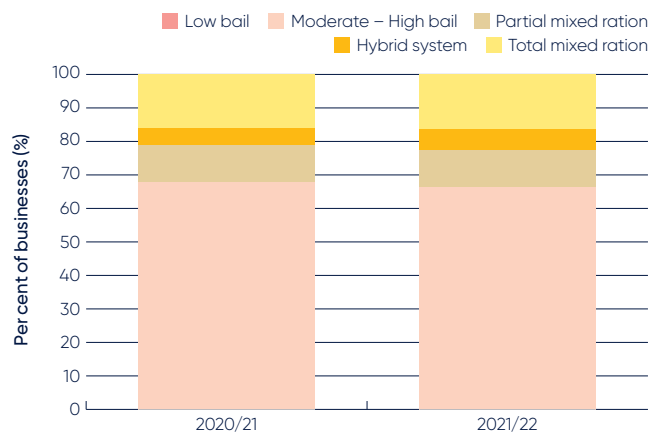
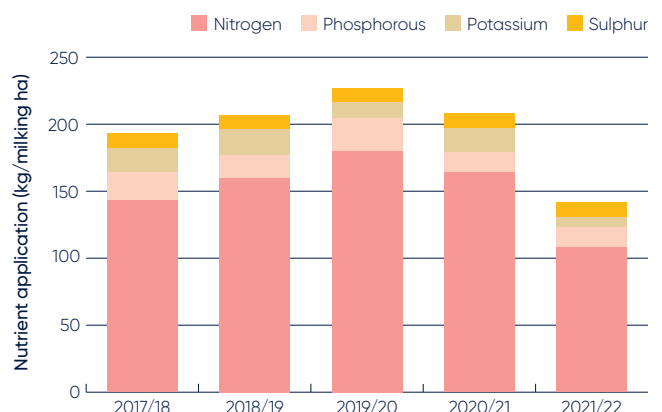


Figure 19 Average nutrient application – South



---

## Part Four: Business Confidence





Participant farmers were confident in their outlook for farm business returns in the coming 12 months (2022/23).

More respondents in the South expected milk price to increase than in the North, while there was no expectation of a decline in either region.

Following a very challenging 2021/22 year, milk production is expected to increase more in the North than the South, however North and South both have strong expectations for milk production to increase or remain stable overall.

In 2022/23 costs were expected to increase across most categories except irrigation, which is anticipated to remain stable.

## Expectations for business profit 2022/23

The participant survey considers different aspects of farming, from climate outlook to expectations about market conditions for dairy products. While expectations for business profit in the coming year were generally positive, there were slight regional differences (Figure 25). Farms in the north were less optimistic, likely to be influenced by the incredibly tough year experienced by many, with the impact of severe flooding and a prolonged wet period.

## Price and production expectations – milk

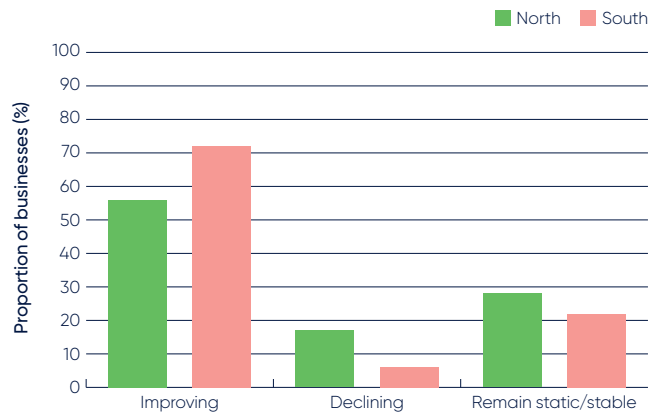
Participants were confident in their outlook for milk price, and milk production for 2022/23. This is mainly due to the timing of milk price announcements (1 June), with farmers having more informed choices on their milk factory at the time of the DFMP survey (July/August 2022). Respondents were expecting milk price to increase or to remain the same in 2022/23, with farmers in the South more optimistic about increasing prices than those in the North (Figure 26). None were expecting a decrease. In the North, 67% were expecting to increase milk production in the 2022/23 year, possibly as a result of a potential improvement in seasons and recovery from the impact of the wet conditions. Seventeen percent of respondents in each region expect their milk production to decrease.

## Production expectations – fodder

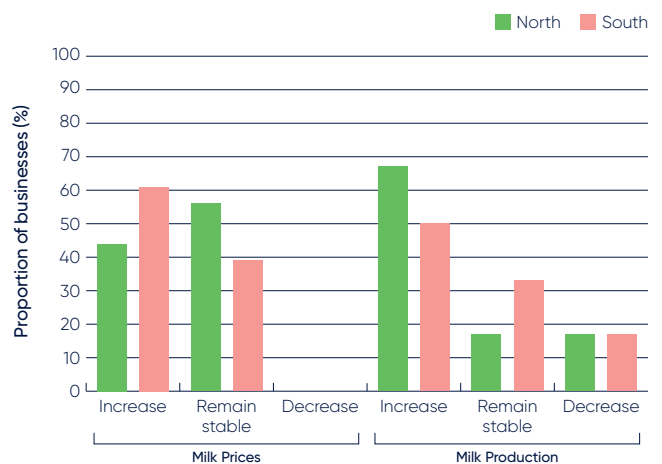
The expectations for fodder production in 2022/23 were more positive in the North. When looked at in the context of the very wet 2021/22 season where fodder production was severely impacted, this again reflects optimism towards a return to better seasons during the year. More than 50% of farms in the South expect fodder production to remain stable, with 28% expecting to increase fodder production (Figure 27).

Despite farmer intentions, as was seen in 2021/22, the ability for farmers to reach their goals of increasing fodder is highly seasonal dependent.

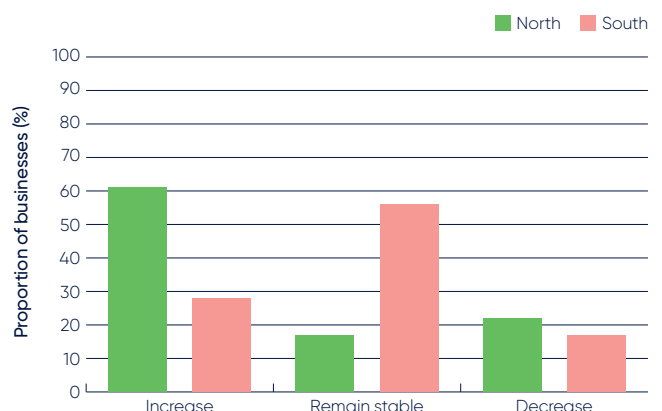
**Figure 25** Expected change to farm business profit in 2022/23



**Figure 26** Producer expectations of milk prices and production in 2022/23



**Figure 27** Producer expectations of fodder production in 2022/23

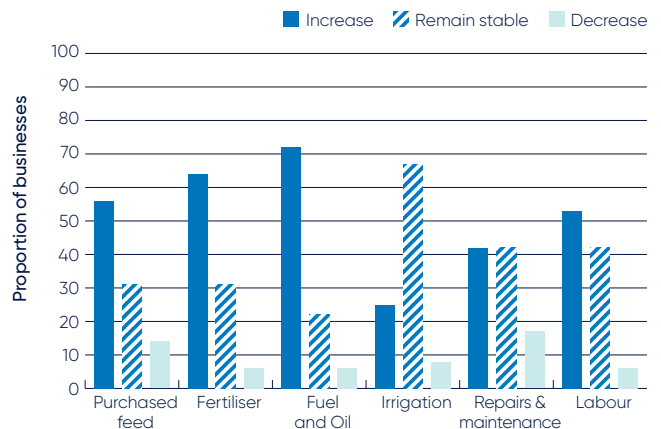




## Cost expectations

The cost category that was expected to be the most likely to increase in 2022/23 was fuel and oil (Figure 28), on the back of increases seen last year. There was strong sentiment that most costs will increase, except for irrigation where expectations are for costs to remain stable.

**Figure 28** Producer expectations of costs for the dairy industry in 2022/23



## Comments from participants

Respondents indicated concern for biosecurity in 2022/23, with reference to Foot and Mouth Disease and Lumpy Skin Disease in particular, given their current proximity to Australia and the likely impact on their business should they eventuate. Concern was also raised around the impacts of the Russia/Ukraine conflict and the uncertainty it creates. Some flagged motivation issues as a result of the floods and wet weather and the intention to transition out of full-time dairying.

The ability to attract service providers was also raised as a reflection of the decreasing critical mass of dairy farmers.

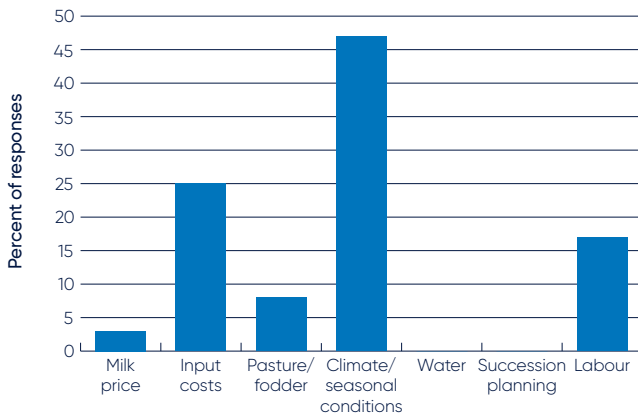
# ISSUES OF IMPORTANCE TO DAIRY BUSINESSES

Participants were asked to rank issues based on the level of importance to their business – with a ranking of (1) being most important and (7) being least important. The results are shown in Figure 29 for the short-term issues and Figure 30 for medium term issues.

## Short term issues – Next 12 months

The most important issue in the coming 12 months was seasonal conditions, reflective of the very challenging and wet year faced across the State in 2021/22, with 47% of respondents ranking this as number one. Managing input costs (ranked number 2 by 25% of respondents) was then ahead of labour (at 17%) as being a major issue.

**Figure 29** Major issues for individual businesses – 12-month outlook

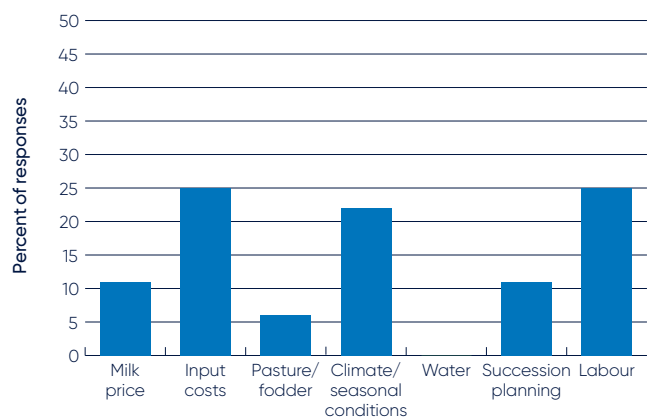


## Medium to long term issues – Next five years

The ranking order for concerns over the medium term (five years) has changed between 2021/22 and 2022/23 with input and labour costs now of equal importance, compared to seasonal conditions and milk price ranking first and second previously.

Input and labour costs were ranked as the greatest concern with 25% ranking these of equal concern. These were closely followed by seasonal conditions (22%) and then milk price (11%).

**Figure 30** Major issues for individual businesses – 5-year outlook





---

# Part Five: 2021/22 Greenhouse Gas Emissions





The average carbon footprint for New South Wales farm monitor farms was 3,146 tonnes of carbon dioxide equivalents (t CO<sub>2</sub>-e) per farm in 2021/22.

Methane from cow rumination (enteric) accounted for an average of 69% of on-farm emissions.

Larger herd sizes and greater milk production have contributed to the trend of increased greenhouse gas (GHG) emitted per farm over the last 5-years.

## Total emissions

Over the last five years, average GHG emissions have been trending upwards, mostly due to larger herd sizes and greater milk production per farm. In 2021/22, the average carbon footprint (net GHG emissions) for NSW participants was estimated to be 3,146t CO<sub>2</sub>-e/farm (Figure 31).

In 2021/22, there was an increase in methane emissions per farm, however this was offset by decreases in pre-farm emissions (fertiliser manufacture, production of purchased fodder, grain and concentrates), nitrous oxide emissions (gas produced from wastes – dung/urine, applied fertiliser and effluent ponds), reduced carbon dioxide emissions from fossil fuel consumption (electricity or petrochemicals) and carbon capture from trees.

Enteric methane accounted for approximately 69% of emissions and is sensitive to changes in livestock weights and numbers on individual farms.

The wet seasonal conditions (a continuation for many areas of the State from 2020/21) across NSW saw the reduced use of fertiliser on farm, due to less pasture renovation and cropping. Farms are also increasing their adoption of alternative energy sources such as solar power. All these factors have played a role in the declining trend for farm emissions since 2019/20.

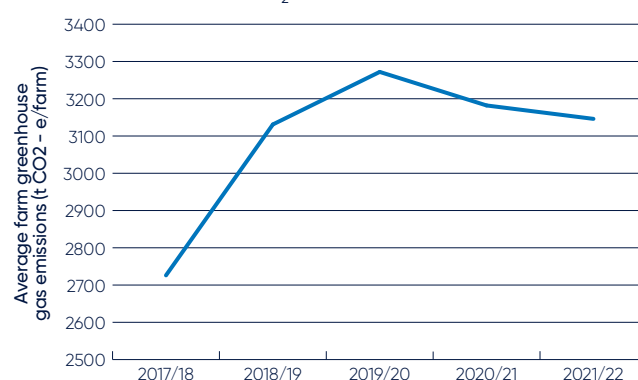
**Table 1** Estimated average GHG emissions and intensity between 2017/18 and 2021/22 (CO<sub>2</sub> equivalent)

Emission source	units	2017/18	2018/19	2019/20	2020/21	2021/22
<b>Sample size</b>		<b>32</b>	<b>32</b>	<b>35</b>	<b>41</b>	<b>36</b>
Methane	t CO <sub>2</sub> -e/farm	1801	2149	2158	2113	2179
Pre-farm	t CO <sub>2</sub> -e/farm	346	358	439	399	381
Nitrous oxide	t CO <sub>2</sub> -e/farm	313	347	355	360	349
Carbon dioxide	t CO <sub>2</sub> -e/farm	267	276	320	310	251
Tree carbon	t CO <sub>2</sub> -e/farm	0	0	0	0	-15
Net GHG emissions	t CO <sub>2</sub> -e/farm	2726	3131	3272	3182	3146
Emissions intensity	t CO <sub>2</sub> -e/FPCM (milk)	0.99	1.02	1.00	0.98	0.98
Emissions intensity	t CO <sub>2</sub> -e/t MS (milk)	14.0	14.4	14.1	13.8	13.8
Emissions intensity	t CO <sub>2</sub> -e/kg lwt (meat)	4.4	4.6	4.4	4.4	4.7

## Emissions intensity

The emissions intensity allocated to milk production (once meat production is considered), has decreased since 2018/19 (Table 1). Although GHG emissions have increased over this period, emissions intensity has declined as average milk production has increased. Regional and farm variation was also observed over this period. **These averages reflect the profiles of the participating farms and should not be taken as representative of the dairy industry.**

**Figure 31** Estimated average GHG emissions between 2017/18 and 2021/22 (CO<sub>2</sub> equivalent)



NOTE: Greenhouse gas emission estimates are calculated using the Australian Dairy Carbon Calculator embedded within DairyBase.

Changes to the emission accounting framework in 2021/22 include new factors for methane, nitrous oxide, fertiliser, purchased feeds, electricity and fuel. The scope considered other livestock on dairy farms (dairy beef) and the allocated proportion of GHG to meat production. Carbon capture and storage from trees was recorded more accurately in 2021/22. Data from all five years was analysed using the 2021/22 accounting framework.

---

## Part Six: How does 2021/22 compare?



Higher milk prices in 2021/22 and favourable livestock trading conditions helped buffer the impact of higher costs.

Strong profit results per farm (average \$398,340) across the state, well above the 11-year long term average of \$243,558.

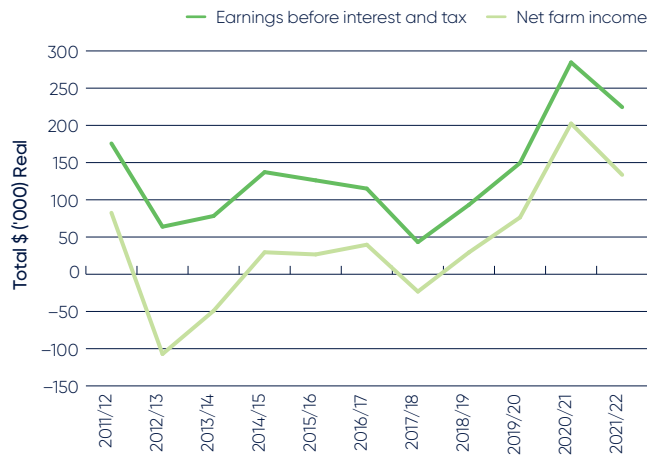
The comparatively lower EBIT (compared to 2020/21) over a larger asset base decreased the resulting return on total assets in both regions.

## The North

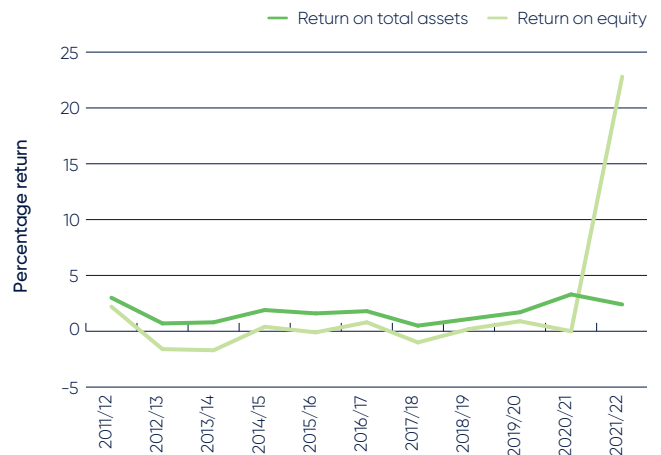
Farm profit (EBIT) in the North 2021/22 was the second highest (accounting for inflation) since the start of the DFMP in 2011/12 (Figure 32). Average EBIT was \$224,478 in 2021/22, compared to the long-term average of \$135,556. Net farm income was \$133,532 in 2021/22, compared to the long-term average of \$40,031.

Average ROTA was 2.4% in 2021/22, decreasing from 3.3% the previous year (Figure 33), which is the third highest in the last 11 years. The average ROE in the North increased to 22.8% in 2021/22 from 0.0% in 2020/21. Business structure impacts ROE, particularly with a high proportion of leased assets as seen in some businesses. The 2021/22 year has been impacted by a farm operating with the vast majority of assets leased which has impacted the average ROE for the North.

**Figure 32** Farm profitability between 2011/12 and 2021/22 – the North



**Figure 33** Whole farm performance between 2011/12 and 2021/22 – the North

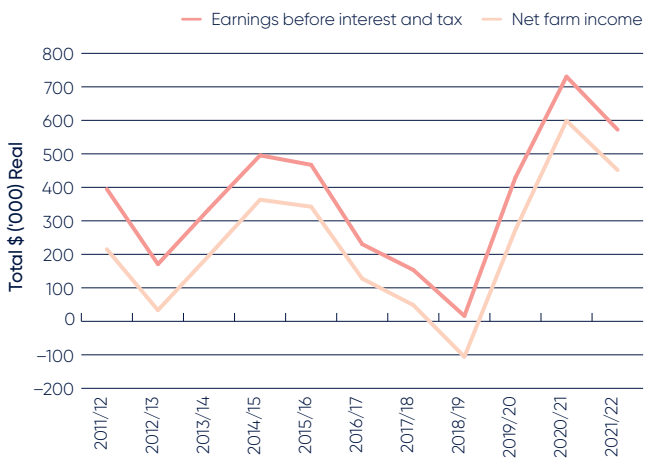




## The South

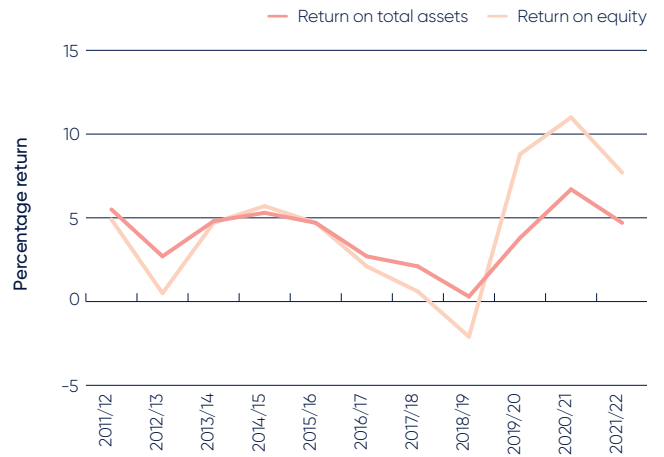
Farm profit (EBIT) in the South in 2021/22 was the second highest (accounting for inflation) since the start of the DFMP in 2011/12 (Figure 34). Average EBIT was \$572,202 in 2021/22, compared to the long-term average of \$363,224. Net farm income was \$451,564 in 2021/22, compared to the long-term average of \$231,295.

**Figure 34** Farm profitability between 2011/12 and 2021/22 – the South



Average ROTA was 4.7% in 2021/22, decreasing from 6.7% the previous year (Figure 35), compared to the long-term average of 3.9%. The average ROE in the South decreased to 7.7% in 2021/22 from 11.0% in 2020/21, compared to the long-term average of 4.4%.

**Figure 35** Whole farm performance between 2011/12 and 2021/22 – the South



---

# Appendices



# APPENDICES

## Appendix A Statewide summary tables

**Table A1** Main financial indicators

	Milk income (net)	All other income	Gross farm income	Total variable costs	Total overhead costs	Cost structure (variable costs/total costs)	Earnings Before Interest & Tax	Return on total assets (excl. capital apprec.)	Interest & lease charges	Debt servicing ratio	Net farm income	Return on equity
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	%	\$/kg MS	%	\$/kg MS	% of income	\$/kg MS	%
Average	9.13	1.35	10.48	5.01	3.76	57	1.71	3.5	0.57	5	1.14	15.3
Top 25%	8.53	1.40	9.93	4.36	2.93	60	2.65	7.5	0.35	4	2.30	10.4

**Table A2** Physical information

	Total usable area	Milking area	Total water use efficiency	Number of milking cows	Milking cows per usable area	Milk sold	Milk sold	Fat	Protein
	ha	ha	tDM/100mm/ha	hd	hd/ha	kg MS/cow	kg MS/ha	%	%
Average	381	139	0.4	375	1.3	518	644	4.1	3.3
Top 25%	523	241	0.7	540	1.1	605	655	4.2	3.4

	Estimated grazed pasture**	Estimated conserved feed**	Home grown feed as % of ME consumed	Nitrogen application**	Phosphorous application**	Potassium application**	Sulphur application**	Labour efficiency	Labour efficiency
	t DM/ha	t DM/ha	% of ME	kg/ha	kg/ha	kg/ha	kg/ha	hd/FTE	kg MS/FTE
Average	5.3	2.2	55	173	18	23	18	71	36,747
Top 25%	4.7	2.4	58	172	34	14	24	84	48,871

\*\*on milking area

**Table A3** Purchased feed

	Purchased feed per milker	Concentrate price	Silage price	Hay price	Other feed price	Average purchased feed price	Percent of total energy imported
	t DM/hd	\$/t DM	\$/t DM	\$/t DM	\$/t DM	\$/t DM	% of ME
Average	3.5	454	278	311	361	411	45
Top 25%	3.7	456	218	262	324	417	42

Calculation of average price of silage, hay and other feed excludes zero values.

**Table A4** Variable costs

	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd and shed costs	Fertiliser	Irrigation	Hay and silage making
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS
Average	0.15	0.24	0.08	0.14	0.15	0.77	0.58	0.08	0.32
Top 25%	0.14	0.16	0.04	0.13	0.13	0.60	0.63	0.12	0.38

	Fuel and oil	Pasture improvement/cropping	Other feed costs	Fodder purchases	Grain/concentrates/other	Agistment costs	Feed and water inventory change	Total feed costs	Total variable costs
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS
Average	0.21	0.37	0.03	0.44	2.30	0.04	-0.11	4.24	5.01
Top 25%	0.20	0.38	0.01	0.34	1.85	0.05	-0.20	3.75	4.36

**Table A5** Overhead costs

	Rates	Farm Insurance	Motor Vehicle Expenses	Repairs and maintenance	Other overheads	Employed labour	Total cash overheads	Depreciation	Imputed owner/operator & family labour	Total overheads
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS
Average	0.07	0.13	0.05	0.56	0.21	1.27	2.28	0.47	1.02	3.76
Top 25%	0.03	0.10	0.03	0.50	0.14	1.08	1.88	0.42	0.63	2.93

**Table A6** Variable costs – percentage

	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd and shed costs	Fertiliser	Irrigation	Hay and silage making
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
Average	1.7	2.7	0.9	1.7	1.7	8.7	6.8	1.0	3.8
Top 25%	1.9	2.2	0.6	1.8	1.7	8.2	9.2	1.9	5.4

	Fuel and oil	Pasture improvement/cropping	Other feed costs	Fodder purchases	Grain/concentrates/other	Agistment costs	Feed and water inventory change	Total feed costs	Total variable costs
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
Average	2.4	4.4	0.3	4.9	26.1	0.5	-1.7	48.5	57.2
Top 25%	2.8	5.4	0.2	4.6	25.0	0.7	-3.8	51.5	59.7

**Table A7** Overhead costs – percentage

	Rates	Farm Insurance	Motor Vehicle Expenses	Repairs and maintenance	Other	Employed labour	Total cash overheads	Depreciation	Imputed owner/operator & family labour	Total
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
Average	0.7	1.5	0.6	6.5	2.3	14.4	26.0	5.4	11.4	42.8
Top 25%*	0.5	1.3	0.5	7.1	1.9	14.5	25.8	5.7	8.8	40.3



**Table A8** Capital structure

Farm assets					Other farm assets (per usable hectare)				
	Land value	Land value	Permanent water value	Permanent water value	Plant and equipment	Livestock	Hay and grain	Other assets	Total assets
	\$/ha	\$/cow	\$/ha	\$/cow	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha
Average	18,252	14,921	2,639	2,367	2,129	3,855	500	631	25,968
Top 25%	11,587	10,389	4,244	3,995	2,061	3,592	771	398	20,378

Liabilities			Equity	
	Liabilities per usable hectare		Equity per usable hectare	Average equity
	\$/ha	Liabilities per milking cow	\$/ha	%
		\$/cow		
Average	6,576	5,695	19,757	74
Top 25%	4,139	3,830	16,239	81

Calculation of average values of land, water asset and equity excludes zero values

**Table A9** Historical data – average farm income, costs and profit per kilogram of milk solids

Year	Income				Variable costs							
	Milk income (net)		Gross farm income		Herd costs		Shed costs		Feed costs		Total variable costs	
	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)
2011/12	6.88	8.45	7.76	9.53	0.33	0.41	0.27	0.33	3.02	3.70	3.62	4.45
2012/13	6.43	7.68	7.20	8.60	0.33	0.39	0.28	0.34	3.18	3.80	3.79	4.53
2013/14	7.15	8.33	8.00	9.32	0.31	0.36	0.30	0.35	3.46	4.03	4.06	4.73
2014/15	7.46	8.50	8.44	9.62	0.32	0.37	0.29	0.33	3.55	4.04	4.16	4.74
2015/16	7.34	8.26	8.23	9.26	0.35	0.39	0.27	0.30	3.33	3.75	3.94	4.43
2016/17	6.89	7.61	7.94	8.77	0.38	0.42	0.26	0.29	3.27	3.61	3.91	4.32
2017/18	7.27	7.88	8.00	8.67	0.36	0.40	0.28	0.31	3.89	4.22	4.53	4.91
2018/19	7.74	8.28	8.68	9.29	0.31	0.33	0.31	0.33	4.49	4.81	5.11	5.47
2019/20	8.88	9.39	9.85	10.41	0.37	0.39	0.28	0.29	4.79	5.07	5.44	5.75
2020/21	8.94	9.32	10.12	10.55	0.42	0.44	0.29	0.30	3.92	4.08	4.63	4.82
2021/22	9.13	9.13	10.48	10.48	0.47	0.47	0.30	0.30	4.24	4.24	5.01	5.01
<b>Average</b>		<b>8.44</b>		<b>9.50</b>		<b>0.40</b>		<b>0.32</b>		<b>4.12</b>		<b>4.83</b>

Note: 'Real' dollar values are the nominal values converted to 2021/22 dollar equivalents by the consumer price index (CPI) to allow for inflation. From 2016/17 Gross farm income does not include feed inventory changes and changes to the value of carry-over water. These are included in feed costs.

Table A9 (continued)

Year	Overhead costs						Profit							
	Cash overhead costs		Non-cash overhead costs		Total overhead costs		Earnings before interest and tax		Interest and lease charges		Net farm income			
	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Return on total assets (%)	Return on equity (%)
2011/12	1.56	1.92	1.24	1.52	2.80	3.44	1.34	1.65	0.59	0.72	0.75	0.92	4.3	3.6
2012/13	1.71	2.04	1.19	1.42	2.90	3.46	0.51	0.61	0.62	0.74	-0.10	-0.12	1.7	-0.5
2013/14	1.80	2.10	1.25	1.46	3.05	3.55	0.88	1.03	0.62	0.73	0.26	0.30	2.6	1.3
2014/15	1.71	1.95	1.25	1.42	2.96	3.37	1.32	1.50	0.60	0.68	0.72	0.82	3.5	2.8
2015/16	1.75	1.97	1.41	1.59	3.16	3.55	1.12	1.26	0.54	0.61	0.58	0.65	3.0	2.1
2016/17	1.80	1.99	1.31	1.45	3.11	3.44	0.92	1.02	0.51	0.57	0.41	0.45	2.2	1.4
2017/18	1.70	1.84	1.44	1.56	3.14	3.40	0.33	0.36	0.51	0.56	-0.18	-0.20	1.2	-0.3
2018/19	1.88	2.01	1.32	1.41	3.19	3.42	0.38	0.40	0.54	0.58	-0.16	-0.17	0.7	-0.8
2019/20	1.98	2.10	1.37	1.45	3.35	3.55	1.05	1.11	0.59	0.62	0.46	0.49	2.7	4.7
2020/21	2.05	2.14	1.37	1.43	3.43	3.57	2.07	2.16	0.57	0.59	1.50	1.56	4.9	7.0
2021/22	2.28	2.28	1.48	1.48	3.76	3.76	1.71	1.71	0.57	0.57	1.14	1.14	3.5	15.3
<b>Average</b>		<b>2.03</b>		<b>1.47</b>		<b>3.50</b>		<b>1.16</b>		<b>0.63</b>		<b>0.53</b>	<b>2.8</b>	<b>3.3</b>

Table A10 Historical data – average farm physical information

Year	Total usable area	Milking area	Total water use efficiency	Number of milking cows	Milking cows per useable area	Milk sold	Milk sold	Estimated grazed pasture*	Estimated conserved feed*	Home grown feed as % of ME consumed	Concentrate price	
	ha	ha	t DM/100mm/ha	hd	hd/ha	kg MS/cow	kg MS/ha	t DM/ha	t DM/ha	% of ME	Nominal (\$/t DM)	Real (\$/t DM)
2011/12	300	133	0.49	375	1.4	478	663	6.4	1.3	57	304	373
2012/13	329	140	0.55	349	1.2	492	608	6.9	1.3	56	323	386
2013/14	301	119	0.60	309	1.1	504	569	6.0	1.1	57	412	480
2014/15	287	128	0.51	338	1.2	506	602	6.5	1.8	58	413	471
2015/16	287	126	0.55	351	1.3	504	618	6.2	2.1	55	392	441
2016/17	263	120	0.56	326	1.3	498	646	6.9	1.6	59	357	394
2017/18	251	118	0.67	337	1.4	488	683	6.0	1.6	56	423	459
2018/19	342	144	0.74	373	1.3	491	610	6.3	1.8	60	567	607
2019/20	365	143	0.57	384	1.2	512	625	5.4	1.8	51	555	587
2020/21	365	135	0.46	371	1.3	522	649	5.9	2.4	57	456	475
2021/22	381	139	0.43	375	1.3	518	644	5.3	2.4	55	454	454
<b>Average</b>	<b>316</b>	<b>131</b>	<b>0.56</b>	<b>353</b>	<b>1.3</b>	<b>501</b>	<b>629</b>	<b>6.2</b>	<b>1.7</b>	<b>56</b>		<b>466</b>

\*From 2006/07 to 2010/11 estimated grazed pasture and conserved feed was calculated per usable hectare  
 From 2011/12 estimated grazed pasture and conserved feed was calculated per hectare of milking area

## Appendix B North summary tables

**Table B1** Main financial indicators

Farm number	Milk income (net)	All other income	Gross farm income	Total variable costs	Total overhead costs	Cost structure (variable costs /total costs)	Earnings Before Interest & Tax	Return on assets (excl. capital apprec.)	Interest & lease charges	Debt servicing ratio	Net farm income	Return on equity
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	%	\$/kg MS	%	\$/kg MS	% of income	\$/kg MS	%
NN0002	9.64	1.62	11.26	4.82	4.40	52	2.04	3.3	0.06	1	1.98	3.4
NN0003	9.79	0.50	10.29	6.17	5.42	53	-1.30	-2.6	0.63	6	-1.93	-7.0
NN0005	9.76	0.87	10.63	4.75	4.40	52	1.49	3.6	-	0	1.49	3.6
NN0008	9.67	1.68	11.35	7.55	3.65	67	0.15	0.6	-	0	0.15	0.6
NN0021	8.96	1.13	10.09	4.91	3.55	58	1.63	2.4	0.14	1	1.49	2.4
NN0023	9.44	1.55	10.99	4.14	5.29	44	1.56	2.2	0.22	2	1.34	2.1
NN0024	9.71	2.34	12.05	5.08	3.78	57	3.19	7.6	0.15	1	3.04	10.5
NN0027	10.64	0.73	11.38	6.26	3.88	62	1.23	2.9	0.34	3	0.90	3.3
NN0030	9.84	1.77	11.60	5.92	4.78	55	0.91	1.7	0.81	7	0.10	0.4
NN0031	9.18	0.54	9.72	4.38	2.80	61	2.54	6.3	0.30	3	2.24	6.9
NN0032	9.79	2.03	11.82	5.86	3.29	64	2.68	3.6	1.40	12	1.28	3.4
NN0033	8.76	2.50	11.26	5.99	5.13	54	0.14	0.2	0.53	5	-0.39	-0.9
NN0036	9.84	1.95	11.78	5.37	3.93	58	2.49	3.6	1.35	11	1.13	3.2
NN0037	10.29	1.89	12.19	5.04	4.44	53	2.71	5.5	0.59	5	2.12	8.1
NN0038	9.98	1.19	11.18	6.48	5.86	53	-1.16	-2.4	0.49	4	-1.65	-5.4
NN0041	9.01	1.09	10.10	5.98	4.69	56	-0.58	-1.0	0.91	9	-1.49	-3.5
NN0042	9.39	0.94	10.33	5.96	3.99	60	0.38	0.8	0.76	7	-0.37	-1.3
NN0043	8.82	2.28	11.09	3.68	3.58	51	3.83	4.2	1.16	10	2.67	380.6
<b>Average</b>	<b>9.58</b>	<b>1.48</b>	<b>11.06</b>	<b>5.46</b>	<b>4.27</b>	<b>56</b>	<b>1.33</b>	<b>2.4</b>	<b>0.55</b>	<b>0.05</b>	<b>0.78</b>	<b>22.8</b>



**Table B2** Physical information

Farm number	Total usable area	Milking area	Total water use efficiency	Number of milking cows	Milking cows per usable area	Milk sold	Milk sold	Fat	Protein
	ha	ha	tDM/100mm/ha	hd	hd/ha	kg MS/cow	kg MS/ha	%	%
NN0002	116	50	0.29	89	0.77	512	393	3.8	3.1
NN0003	223	89	0.24	370	1.66	367	609	4.3	3.4
NN0005	193	80	0.36	295	1.53	524	801	4.2	3.3
NN0008	260	130	0.38	345	1.33	560	742	4.1	3.2
NN0021	88	60	0.74	150	1.70	471	803	4.8	3.7
NN0023	85	36	0.40	92	1.08	439	475	3.9	3.2
NN0024	271	120	0.36	275	1.01	495	502	3.9	3.1
NN0027	240	93	0.27	380	1.58	542	859	4.1	3.3
NN0030	117	70	0.37	232	1.99	434	864	3.9	3.3
NN0031	343	188	0.37	485	1.41	446	630	4.8	3.5
NN0032	1,423	450	0.20	728	0.51	545	279	3.7	3.2
NN0033	1,378	1	0.09	520	0.38	388	146	4.6	3.6
NN0036	250	55	0.13	260	1.04	440	458	4.0	3.1
NN0037	227	92	0.30	341	1.50	445	669	3.9	3.1
NN0038	217	52	0.17	146	0.67	485	327	3.8	3.3
NN0041	218	61	0.15	188	0.86	413	356	4.7	3.7
NN0042	125	73	0.42	300	2.39	376	899	4.3	3.3
NN0043	792	430	0.29	412	0.52	408	212	4.2	3.3
<b>Average</b>	<b>365</b>	<b>118</b>	<b>0.31</b>	<b>312</b>	<b>1.2</b>	<b>461</b>	<b>557</b>	<b>4.1</b>	<b>3.3</b>

Table B2 (continued)

Farm number	Estimated grazed pasture**	Estimated conserved feed**	Home grown feed as % of ME consumed	Nitrogen application**	Phosphorous application**	Potassium application**	Sulphur application**	Labour efficiency	Labour efficiency
	t DM/ha	t DM/ha	% of ME	kg/ha	kg/ha	kg/ha	kg/ha	hd/FTE	kg MS/FTE
NN0002	5.57	1.70	65	215	30	93	25	48	24,755
NN0003	5.39	–	72	39	–	28	46	49	17,923
NN0005	10.19	0.99	64	373	39	62	30	53	27,673
NN0008	2.30	4.31	52	492	73	96	61	57	32,164
NN0021	2.33	7.80	52	192	9	76	18	83	39,251
NN0023	9.99	1.67	68	190	4	18	5	52	22,900
NN0024	6.92	1.27	60	250	22	35	76	70	34,418
NN0027	8.59	0.98	48	335	9	–	35	62	33,455
NN0030	4.50	0.54	40	131	8	20	9	62	27,021
NN0031	7.86	3.18	77	416	110	41	11	94	41,769
NN0032	2.86	0.26	62	95	9	10	14	62	34,056
NN0033	0.01	–	46	–	–	–	–	60	23,239
NN0036	10.54	–	56	463	–	36	10	65	28,654
NN0037	8.85	0.50	54	262	23	96	36	53	23,607
NN0038	5.15	–	50	128	18	56	24	45	22,029
NN0041	4.78	2.23	47	339	–	–	1	64	26,323
NN0042	8.00	0.64	47	290	7	16	8	96	36,046
NN0043	4.48	0.15	78	85	12	10	25	82	33,524
<b>Average</b>	<b>6.0</b>	<b>1.9</b>	<b>58%</b>	<b>239</b>	<b>21</b>	<b>38</b>	<b>24</b>	<b>64</b>	<b>29,378</b>

\*\*on milking area

Calculation of the average for conserved feed excludes zero values

**Table B3** Purchased feed

Farm number	Purchased feed per milker	Concentrate price	Silage price	Hay price	Other feed price	Average purchased feed price	Percent of total energy imported
	t DM/hd	\$/t DM	\$/t DM	\$/t DM	\$/t DM	\$/t DM	% of ME
NN0002	2.48	655	–	–	–	655	35
NN0003	1.53	585	–	–	–	585	28
NN0005	2.46	435	485	431	–	436	36
NN0008	3.73	447	244	405	–	332	48
NN0021	2.95	307	–	–	–	307	48
NN0023	2.61	357	–	422	–	382	32
NN0024	3.10	455	–	314	–	437	40
NN0027	4.03	562	–	392	718	536	52
NN0030	3.40	535	137	471	–	481	60
NN0031	1.63	581	–	–	758	581	23
NN0032	3.29	392	–	331	–	387	38
NN0033	4.87	392	249	349	174	318	54
NN0036	3.23	480	–	–	441	283	44
NN0037	3.54	417	260	268	–	370	46
NN0038	3.94	622	388	494	304	465	50
NN0041	3.24	446	–	21	422	340	53
NN0042	3.38	326	411	153	285	290	53
NN0043	1.54	359	–	268	–	326	22
<b>Average</b>	<b>3.05</b>	<b>464</b>	<b>311</b>	<b>332</b>	<b>443</b>	<b>417</b>	<b>42</b>

Calculation of average price of silage, hay and other feed excludes zero values



**Table B4** Variable costs

Farm number	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd and shed costs	Fertiliser	Irrigation	Hay and silage making
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS
NN0002	0.13	0.13	0.05	0.15	0.17	0.62	0.75	–	0.06
NN0003	0.19	0.20	0.40	0.28	0.08	1.14	0.54	–	0.55
NN0005	0.19	0.32	0.01	0.12	0.14	0.78	0.83	0.18	0.24
NN0008	0.24	0.51	0.01	0.06	0.13	0.94	1.40	0.21	0.88
NN0021	0.08	0.50	0.06	0.15	0.19	0.98	0.74	0.13	0.33
NN0023	0.15	0.23	–	0.20	0.24	0.81	0.51	0.12	0.19
NN0024	0.14	0.25	0.05	0.12	0.19	0.76	0.74	0.01	0.27
NN0027	0.04	0.26	0.03	0.09	0.13	0.56	0.68	0.11	0.08
NN0030	0.08	0.23	0.09	0.11	0.21	0.73	0.67	–	0.16
NN0031	0.22	0.14	0.11	0.15	0.20	0.82	0.44	0.00	0.06
NN0032	0.08	0.29	0.02	0.11	0.22	0.72	0.81	0.00	0.12
NN0033	0.02	0.27	–	0.21	0.19	0.69	0.04	–	0.17
NN0036	0.17	0.46	0.43	0.13	0.24	1.43	0.75	0.13	0.14
NN0037	0.30	0.26	–	0.16	0.09	0.81	0.86	–	0.07
NN0038	0.42	0.34	0.23	0.10	0.17	1.26	0.48	0.07	0.26
NN0041	0.24	0.24	0.41	0.16	0.18	1.23	0.58	0.35	0.33
NN0042	0.16	0.37	0.00	0.34	0.48	1.34	0.95	0.11	0.34
NN0043	0.18	0.28	0.06	0.31	0.20	1.04	0.46	–	0.06
<b>Average</b>	<b>0.17</b>	<b>0.29</b>	<b>0.11</b>	<b>0.16</b>	<b>0.19</b>	<b>0.93</b>	<b>0.68</b>	<b>0.08</b>	<b>0.24</b>

Farm number	Fuel and oil	Pasture improvement/cropping	Other feed costs	Fodder purchases	Grain/concentrates/other	Agistment costs	Feed and water inventory change	Total feed costs	Total variable costs
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS
NN0002	0.14	0.16	0.02	-	3.08	-	-0.02	4.20	4.82
NN0003	0.20	1.00	-	-	2.30	-	0.44	5.03	6.17
NN0005	0.09	0.46	-	0.54	1.62	-	0.00	3.97	4.75
NN0008	0.15	0.62	-	0.31	2.23	-	0.81	6.61	7.55
NN0021	0.38	0.27	0.13	-	2.14	0.08	-0.27	3.93	4.91
NN0023	0.27	0.22	-	1.04	1.44	-	-0.47	3.33	4.14
NN0024	0.17	0.40	0.00	0.25	2.34	-	0.14	4.33	5.08
NN0027	0.25	0.47	0.07	0.59	3.39	0.02	0.05	5.70	6.26
NN0030	0.19	0.37	0.18	0.90	2.97	0.01	-0.25	5.19	5.92
NN0031	0.43	0.63	-	-	2.20	-	-0.21	3.55	4.38
NN0032	0.29	0.61	-	0.16	2.29	-	0.84	5.14	5.86
NN0033	0.79	0.29	-	0.30	3.69	-	0.03	5.30	5.99
NN0036	0.34	0.44	0.09	-	2.11	-	-0.04	3.94	5.37
NN0037	0.12	0.25	-	0.69	2.32	-	-0.07	4.23	5.04
NN0038	0.07	0.25	0.10	2.04	3.47	-	-1.53	5.22	6.48
NN0041	0.25	0.33	-	0.04	2.64	-	0.23	4.76	5.98
NN0042	0.23	0.28	-	0.39	2.41	-	-0.09	4.61	5.96
NN0043	0.09	0.79	0.01	0.36	0.84	-	0.04	2.64	3.68
<b>Average</b>	<b>0.25</b>	<b>0.44</b>	<b>0.03</b>	<b>0.42</b>	<b>2.41</b>	<b>0.01</b>	<b>-0.02</b>	<b>4.54</b>	<b>5.46</b>

**Table B5** Overhead costs

Farm number	Rates	Farm Insurance	Motor Vehicle Expenses	Repairs and maintenance	Other overheads	Employed labour	Total cash overheads	Depreciation	Imputed owner/operator & family labour	Total overheads
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS
NN0002	0.11	0.30	0.09	0.45	0.35	0.51	1.81	0.66	1.93	4.40
NN0003	0.10	0.15	0.05	0.61	0.39	2.80	4.10	0.30	1.02	5.42
NN0005	0.06	0.08	0.06	0.91	0.09	1.88	3.09	0.42	0.88	4.40
NN0008	0.03	0.06	0.01	0.88	0.02	2.36	3.37	0.28	–	3.65
NN0021	0.07	0.25	0.04	0.61	0.11	0.67	1.76	0.64	1.15	3.55
NN0023	0.10	0.21	0.08	0.57	0.32	0.10	1.37	0.43	3.49	5.29
NN0024	0.05	0.11	0.02	0.60	0.25	1.68	2.71	0.43	0.64	3.78
NN0027	0.07	0.14	0.09	0.61	0.28	1.30	2.49	0.58	0.81	3.88
NN0030	0.16	0.12	0.08	0.69	0.33	0.66	2.05	0.71	2.02	4.78
NN0031	0.03	0.10	0.01	0.13	0.05	0.90	1.22	0.49	1.09	2.80
NN0032	0.17	0.10	0.04	0.40	0.15	1.75	2.60	0.33	0.35	3.29
NN0033	0.14	0.16	0.01	0.85	0.11	2.78	4.05	0.63	0.44	5.13
NN0036	0.11	0.15	0.06	0.99	0.12	1.34	2.76	0.32	0.85	3.93
NN0037	0.06	0.11	0.09	0.21	0.30	1.96	2.73	0.48	1.23	4.44
NN0038	0.11	0.12	0.17	0.53	0.82	1.17	2.91	0.60	2.36	5.86
NN0041	0.10	0.16	0.03	0.96	0.22	0.85	2.32	0.36	2.02	4.69
NN0042	0.03	0.16	0.01	0.62	0.18	0.26	1.26	0.71	2.02	3.99
NN0043	–	0.05	0.03	0.72	0.36	1.65	2.81	0.08	0.69	3.58
<b>Average</b>	<b>0.08</b>	<b>0.14</b>	<b>0.05</b>	<b>0.63</b>	<b>0.25</b>	<b>1.37</b>	<b>2.52</b>	<b>0.47</b>	<b>1.28</b>	<b>4.27</b>



**Table B6** Variable costs – percentage

Farm number	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd and shed costs	Fertiliser	Irrigation	Hay and silage making
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
NN0002	1.4	1.5	0.5	1.6	1.8	6.8	8.2	0.0	0.6
NN0003	1.6	1.7	3.4	2.4	0.7	9.9	4.7	0.0	4.7
NN0005	2.1	3.5	0.1	1.4	1.5	8.5	9.1	2.0	2.6
NN0008	2.1	4.5	0.1	0.5	1.2	8.4	12.5	1.9	7.8
NN0021	1.0	5.9	0.7	1.8	2.3	11.6	8.7	1.5	3.9
NN0023	1.6	2.4	0.0	2.1	2.5	8.6	5.4	1.3	2.1
NN0024	1.6	2.8	0.5	1.4	2.2	8.5	8.4	0.1	3.0
NN0027	0.4	2.6	0.3	0.9	1.3	5.5	6.7	1.0	0.8
NN0030	0.8	2.1	0.8	1.1	2.0	6.8	6.2	0.0	1.5
NN0031	3.0	2.0	1.6	2.1	2.8	11.5	6.1	0.0	0.8
NN0032	0.9	3.2	0.2	1.2	2.4	7.9	8.9	0.0	1.4
NN0033	0.2	2.4	0.0	1.9	1.7	6.2	0.3	0.0	1.5
NN0036	1.8	4.9	4.6	1.4	2.6	15.3	8.1	1.4	1.5
NN0037	3.1	2.7	0.0	1.7	0.9	8.5	9.1	0.0	0.7
NN0038	3.4	2.8	1.9	0.8	1.4	10.2	3.9	0.6	2.1
NN0041	2.2	2.3	3.8	1.5	1.6	11.5	5.4	3.3	3.1
NN0042	1.6	3.7	0.0	3.4	4.8	13.5	9.5	1.1	3.4
NN0043	2.5	3.9	0.8	4.3	2.7	14.3	6.3	0.0	0.9
<b>Average</b>	<b>1.7</b>	<b>3.1</b>	<b>1.1</b>	<b>1.8</b>	<b>2.0</b>	<b>9.6</b>	<b>7.1</b>	<b>0.8</b>	<b>2.4</b>

Table B6 (continued)

Farm number	Fuel and oil	Pasture improvement/cropping	Other feed costs	Fodder purchases	Grain/concentrates/other	Agistment costs	Feed and water inventory change	Total feed costs	Total variable costs
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
NN0002	1.5	1.8	0.2	0.0	33.4	0.0	-0.2	45.5	52.3
NN0003	1.7	8.6	0.0	0.0	19.8	0.0	3.8	43.4	53.2
NN0005	1.0	5.0	0.0	5.9	17.7	0.0	0.0	43.4	51.9
NN0008	1.4	5.5	0.0	2.8	19.9	0.0	7.2	59.0	67.4
NN0021	4.5	3.2	1.5	0.0	25.2	0.9	-3.1	46.5	58.1
NN0023	2.9	2.4	0.0	11.0	15.3	0.0	-5.0	35.3	43.9
NN0024	1.9	4.5	0.1	2.8	26.4	0.0	1.6	48.8	57.4
NN0027	2.4	4.6	0.7	5.8	33.4	0.2	0.5	56.2	61.8
NN0030	1.8	3.4	1.7	8.4	27.8	0.1	-2.4	48.6	55.3
NN0031	6.0	8.7	0.0	0.0	30.7	0.0	-2.9	49.5	60.9
NN0032	3.2	6.7	0.0	1.8	25.0	0.0	9.2	56.2	64.0
NN0033	7.1	2.6	0.0	2.7	33.2	0.0	0.3	47.7	53.9
NN0036	3.7	4.7	0.9	0.0	22.6	0.0	-0.5	42.4	57.8
NN0037	1.3	2.7	0.0	7.2	24.5	0.0	-0.8	44.7	53.2
NN0038	0.5	2.0	0.8	16.5	28.1	0.0	-12.4	42.3	52.5
NN0041	2.4	3.1	0.0	0.4	24.8	0.0	2.1	44.6	56.0
NN0042	2.3	2.8	0.0	3.9	24.2	0.0	-0.9	46.4	59.9
NN0043	1.3	10.9	0.1	4.9	11.5	0.0	0.5	36.4	50.7
<b>Average</b>	<b>2.6</b>	<b>4.6</b>	<b>0.3</b>	<b>4.1</b>	<b>24.6</b>	<b>0.1</b>	<b>-0.2</b>	<b>46.5</b>	<b>56.1</b>

**Table B7** Overhead costs – percentage

Farm number	Rates	Farm Insurance	Motor Vehicle Expenses	Repairs and maintenance	Other	Employed labour	Total cash overheads	Depreciation	Imputed owner/operator & family labour	Total
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
NN0002	1.2	3.3	1.0	4.9	3.8	5.5	19.6	7.2	21.0	47.7
NN0003	0.8	1.3	0.5	5.3	3.4	24.2	35.4	2.6	8.8	46.8
NN0005	0.7	0.9	0.7	10.0	1.0	20.6	33.8	4.6	9.6	48.1
NN0008	0.3	0.6	0.1	7.9	0.2	21.0	30.1	2.5	0.0	32.6
NN0021	0.8	3.0	0.5	7.2	1.3	7.9	20.8	7.5	13.6	41.9
NN0023	1.0	2.3	0.9	6.0	3.4	1.0	14.6	4.5	37.0	56.1
NN0024	0.6	1.2	0.3	6.8	2.8	19.0	30.6	4.8	7.2	42.6
NN0027	0.7	1.3	0.9	6.0	2.8	12.8	24.5	5.7	8.0	38.2
NN0030	1.5	1.2	0.8	6.4	3.1	6.2	19.1	6.6	18.9	44.7
NN0031	0.4	1.4	0.2	1.8	0.7	12.5	17.0	6.9	15.2	39.1
NN0032	1.9	1.1	0.4	4.4	1.6	19.1	28.5	3.6	3.9	36.0
NN0033	1.3	1.4	0.1	7.7	1.0	25.0	36.4	5.7	4.0	46.1
NN0036	1.1	1.6	0.7	10.7	1.3	14.4	29.7	3.4	9.1	42.2
NN0037	0.6	1.2	0.9	2.2	3.2	20.7	28.8	5.1	13.0	46.8
NN0038	0.9	1.0	1.3	4.3	6.6	9.5	23.6	4.8	19.1	47.5
NN0041	0.9	1.5	0.3	9.0	2.0	7.9	21.7	3.4	18.9	44.0
NN0042	0.3	1.6	0.1	6.3	1.8	2.6	12.7	7.1	20.3	40.1
NN0043	0.0	0.7	0.4	10.0	4.9	22.7	38.7	1.1	9.5	49.3
<b>Average</b>	<b>0.8</b>	<b>1.5</b>	<b>0.6</b>	<b>6.5</b>	<b>2.5</b>	<b>14.0</b>	<b>25.9</b>	<b>4.8</b>	<b>13.2</b>	<b>43.9</b>

**Table B8** Capital structure

Farm assets					Other farm assets (per usable hectare)				
	Land value	Land value	Permanent water value	Permanent water value	Plant and equipment	Livestock	Hay and grain	Other assets	Total assets
	\$/ha	\$/cow	\$/ha	\$/cow	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha
Average	17,440	15,256	1,479	1,041	1,916	3,695	392	584	24,848
Liabilities					Equity				
	Liabilities per usable hectare		Liabilities per milking cow		Equity per usable hectare				Average equity
	\$/ha		\$/cow		\$/ha				%
Average	5,846		5,369		19,652				75

Calculation of average values of land,water asset and equity excludes zero values



**Table B9** Historical data – average farm income, costs and profit per kilogram of milk solids

Income					Variable costs							
Milk income (net)		Gross farm income			Herd costs		Shed costs		Feed costs		Total variable costs	
Year	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)
2011/12	7.13	8.76	8.04	9.87	0.35	0.43	0.29	0.36	3.17	3.89	3.81	4.68
2012/13	6.83	8.16	7.46	8.91	0.33	0.40	0.32	0.39	3.34	4.00	4	4.78
2013/14	7.17	8.36	8.01	9.34	0.30	0.35	0.37	0.44	3.68	4.29	4.35	5.07
2014/15	7.62	8.68	8.61	9.81	0.35	0.39	0.36	0.41	3.78	4.30	4.48	5.10
2015/16	7.65	8.60	8.46	9.51	0.34	0.38	0.31	0.35	3.61	4.06	4.26	4.79
2016/17	7.28	8.04	8.25	9.11	0.35	0.39	0.31	0.34	3.46	3.82	4.12	4.55
2017/18	7.62	8.26	8.39	9.10	0.38	0.41	0.33	0.36	4.09	4.43	4.79	5.19
2018/19	8.07	8.64	9.16	9.80	0.33	0.35	0.35	0.38	4.45	4.76	5.13	5.49
2019/20	9.37	9.91	10.35	10.94	0.43	0.45	0.32	0.34	4.91	5.19	5.65	5.98
2020/21	9.31	9.70	10.63	11.08	0.50	0.52	0.33	0.34	4.33	4.51	5.15	5.37
2021/22	9.58	9.58	11.06	11.06	0.57	0.57	0.36	0.36	4.54	4.54	5.46	5.46
<b>Average</b>		<b>8.79</b>		<b>9.87</b>		<b>0.42</b>		<b>0.37</b>		<b>4.35</b>		<b>5.13</b>

Overhead costs							Profit							
Cash overhead costs		Non-cash overhead costs		Total overhead costs			Earnings before interest and tax		Interest and lease charges		Net farm income			
Year	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Return on total assets (%)	Return on equity (%)
2011/12	1.76	2.17	1.44	1.77	3.20	3.93	1.03	1.26	0.45	0.55	0.58	0.71	3.0	2.2
2012/13	2.01	2.40	1.26	1.51	3.25	3.88	0.22	0.26	0.58	0.69	-0.36	-0.43	0.7	-1.6
2013/14	2.02	2.36	1.34	1.56	3.36	3.92	0.29	0.34	0.64	0.74	-0.34	-0.40	0.8	-1.7
2014/15	1.87	2.13	1.45	1.65	3.31	3.77	0.82	0.93	0.63	0.72	0.19	0.22	1.9	0.4
2015/16	1.96	2.21	1.62	1.82	3.58	4.03	0.62	0.70	0.53	0.60	0.09	0.10	1.6	-0.1
2016/17	1.92	2.12	1.46	1.61	3.38	3.73	0.75	0.83	0.52	0.57	0.23	0.25	1.8	0.8
2017/18	1.86	2.01	1.61	1.75	3.46	3.75	0.13	0.14	0.46	0.50	-0.33	-0.36	0.5	-1.0
2018/19	2.16	2.32	1.43	1.53	3.59	3.85	0.43	0.46	0.47	0.51	-0.04	-0.04	1.1	0.2
2019/20	2.18	2.30	1.82	1.93	4.00	4.23	0.69	0.73	0.50	0.53	0.19	0.20	1.7	0.9
2020/21	2.24	2.33	1.64	1.71	3.90	4.06	1.59	1.66	0.53	0.55	1.06	1.10	3.3	0.0
2021/22	2.52	2.52	1.75	1.75	4.27	4.27	1.33	1.33	0.55	0.55	0.78	0.78	2.4	22.8
<b>Average</b>		<b>2.26</b>		<b>1.69</b>		<b>3.95</b>		<b>0.79</b>		<b>0.59</b>		<b>0.20</b>	<b>1.7</b>	<b>2.1</b>

Note: 'Real' dollar values are the nominal values converted to 2021/22 dollar equivalents by the consumer price index (CPI) to allow for inflation. From 2016/17 Gross farm income does not include feed inventory changes and changes to the value of carry-over water. These are included in feed costs.

**Table B10** Historical data – average farm physical information

Year	Total usable area	Milking area	Total water use efficiency	Number of milking cows	Milking cows per useable area	Milk sold	Milk sold	Estimated grazed pasture*	Estimated conserved feed*	Home grown feed as % of ME consumed	Concentrate price	
	ha	ha	t DM/100mm/ha	hd	hd/ha	kg MS/cow	kg MS/ha	t DM/ha	t DM/ha	% of ME	Nominal (\$/t DM)	Real (\$/t DM)
2011/12	250	109	0.45	300	1.3	461	598	5.90	1.8	62	307	377
2012/13	335	130	0.49	361	1.3	460	615	7.4	1.4	59	335	400
2013/14	231	102	0.59	272	1.2	471	590	5.8	1.2	60	444	517
2014/15	215	95	0.48	259	1.3	477	606	6.4	1.8	59	434	494
2015/16	210	95	0.53	289	1.4	463	636	5.9	2.3	52	401	451
2016/17	188	88	0.49	259	1.4	477	680	7.2	1.5	62	376	415
2017/18	188	94	0.60	288	1.5	459	698	7.1	1.6	57	442	479
2018/19	299	108	0.68	328	1.3	443	580	7.2	2.0	64	581	622
2019/20	314	106	0.50	309	1.2	472	579	6.0	2.3	55	586	620
2020/21	321	117	0.36	309	1.3	474	596	6.6	2.2	62	497	518
2021/22	365	118	0.31	312	1.2	461	557	6.0	1.9	58	464	464
<b>Average</b>	<b>265</b>	<b>106</b>	<b>0.50</b>	<b>299</b>	<b>1.3</b>	<b>465</b>	<b>612</b>	<b>6.5</b>	<b>1.8</b>	<b>59</b>		<b>487</b>

\*From 2006/07 to 2010/11 estimated grazed pasture and conserved feed was calculated per usable hectare  
 From 2011/12 estimated grazed pasture and conserved feed was calculated per hectare of milking area

## Appendix C South summary tables

Table C1 Main financial indicators

Farm number	Milk income (net)	All other income	Gross farm income	Total variable costs	Total overhead costs	Cost structure (variable costs /total costs)	Earnings Before Interest & Tax	Return on assets (excl. capital apprec.)	Interest & lease charges	Debt servicing ratio	Net farm income	Return on equity
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	%	\$/kg MS	%	\$/kg MS	% of income	\$/kg MS	%
SN0002	9.50	1.68	11.19	4.61	4.17	52	2.42	3.0	0.64	6	1.78	4.7
SN0006	8.99	1.78	10.76	4.66	4.29	52	1.82	3.1	0.77	7	1.05	3.4
SN0009	7.07	1.44	8.51	4.48	3.83	54	0.20	0.2	0.53	6	-0.32	-0.4
SN0012	9.10	1.15	10.25	4.24	3.46	55	2.56	6.9	0.66	6	1.90	8.3
SN0014	7.22	1.70	8.92	4.66	2.54	65	1.73	6.1	0.23	3	1.49	7.6
SN0021	7.58	1.12	8.70	2.68	2.47	52	3.55	11.2	0.27	3	3.28	11.1
SN0023	8.82	1.00	9.82	4.66	2.33	67	2.83	7.0	0.24	2	2.59	8.7
SN0024	9.28	0.73	10.02	4.53	3.14	59	2.35	3.5	1.08	11	1.27	7.7
SN0026	8.66	1.01	9.66	3.91	3.36	54	2.39	6.1	1.39	14	1.00	10.5
SN0028	7.89	0.84	8.73	4.72	1.95	71	2.06	8.0	0.05	1	2.02	10.2
SN0029	9.29	2.55	11.84	5.39	3.83	58	2.62	6.3	0.39	3	2.22	7.2
SN0031	9.94	0.40	10.34	5.38	3.45	61	1.51	3.5	0.62	6	0.89	3.5
SN0033	7.98	1.40	9.38	3.42	3.23	51	2.73	7.7	0.86	9	1.87	22.9
SN0034	9.37	0.69	10.06	4.82	3.14	61	2.10	2.2	0.52	5	1.58	4.7
SN0035	9.02	1.62	10.64	4.73	3.97	54	1.94	1.8	0.71	7	1.23	19.0
SN0036	7.73	0.97	8.70	4.75	3.11	60	0.83	2.9	0.37	4	0.46	2.1
SN0037	9.39	0.98	10.36	5.18	3.27	61	1.91	2.6	0.90	9	1.01	3.0
SN0038	9.46	0.84	10.30	5.24	3.13	63	1.93	2.5	0.46	5	1.46	4.6
<b>Average</b>	<b>8.68</b>	<b>1.22</b>	<b>9.90</b>	<b>4.56</b>	<b>3.26</b>	<b>58</b>	<b>2.08</b>	<b>4.7</b>	<b>0.59</b>	<b>6</b>	<b>1.49</b>	<b>7.7</b>



**Table C2** Physical information

Farm number	Total usable area	Milking area	Total water use efficiency	Number of milking cows	Milking cows per usable area	Milk sold	Milk sold	Fat	Protein
	ha	ha	tDM/100mm/ha	hd	hd/ha	kg MS/cow	kg MS/ha	%	%
SN0002	311	95	0.2	354	1.1	594	675	4.0	3.3
SN0006	325	65	0.2	325	1.0	398	398	3.9	3.1
SN0009	280	3	0.6	299	1.1	446	477	4.3	3.2
SN0012	318	101	0.5	378	1.2	557	662	3.9	3.3
SN0014	392	80	0.7	400	1.0	686	700	4.5	3.4
SN0021	1,726	679	1.0	1,453	0.8	496	418	5.1	4.0
SN0023	145	82	0.8	166	1.1	583	668	3.9	3.3
SN0024	318	140	0.2	270	0.9	584	497	3.8	3.3
SN0026	210	150	1.3	258	1.2	652	801	5.2	3.8
SN0028	748	748	0.8	996	1.3	692	922	4.1	3.5
SN0029	372	1	1.0	370	1.0	892	887	3.6	3.1
SN0031	708	1	0.5	541	0.8	596	455	4.0	3.2
SN0033	389	174	0.4	333	0.9	593	508	3.8	3.4
SN0034	270	138	0.2	501	1.9	563	1,044	3.8	3.0
SN0035	236	154	0.2	375	1.6	480	763	3.7	3.3
SN0036	190	130	0.7	345	1.8	487	884	4.0	3.3
SN0037	124	72	0.3	260	2.1	456	957	3.4	3.1
SN0038	103	63	0.3	250	2.4	594	1,441	3.8	3.1
<b>Average</b>	<b>398</b>	<b>160</b>	<b>0.6</b>	<b>437</b>	<b>1.3</b>	<b>575</b>	<b>731</b>	<b>4.0</b>	<b>3.3</b>

Table C2 (continued)

Farm number	Estimated grazed pasture**	Estimated conserved feed**	Home grown feed as % of ME consumed	Nitrogen application**	Phosphorous application**	Potassium application**	Sulphur application**	Labour efficiency	Labour efficiency
	t DM/ha	t DM/ha	% of ME	kg/ha	kg/ha	kg/ha	kg/ha	hd/FTE	kg MS/FTE
SN0002	8.5	1.0	48	68	6	3	13	73	43,414
SN0006	9.8	0.2	57	46	13	–	28	66	26,123
SN0009	0.8	–	41	–	–	–	–	66	29,578
SN0012	5.0	3.4	42	95	37	–	19	67	37,300
SN0014	3.5	0.8	27	101	19	–	1	97	66,374
SN0021	7.2	–	85	172	30	–	6	136	67,371
SN0023	5.4	2.4	65	224	54	–	67	94	54,740
SN0024	4.6	1.5	56	81	21	14	2	77	45,047
SN0026	5.1	8.9	61	155	7	31	8	62	40,698
SN0028	2.4	2.9	50	84	17	19	22	91	63,085
SN0029	0.0	–	52	–	–	–	–	42	37,790
SN0031	0.0	–	47	–	–	–	–	65	38,622
SN0033	4.4	2.8	65	209	21	29	10	62	36,988
SN0034	3.4	0.8	34	149	12	2	9	77	43,423
SN0035	3.0	2.6	49	143	–	–	–	79	37,793
SN0036	3.9	7.3	55	83	12	17	7	73	35,732
SN0037	7.4	0.6	45	122	10	16	11	90	41,238
SN0038	9.5	0.2	45	204	19	9	4	82	48,753
<b>Average</b>	<b>4.7</b>	<b>2.5</b>	<b>51</b>	<b>108</b>	<b>15</b>	<b>8</b>	<b>11</b>	<b>78</b>	<b>44,115</b>

\*\*on milking area

Calculation of the average for conserved feed excludes zero values

**Table C3** Purchased feed

Farm number	Purchased feed per milker	Concentrate price	Silage price	Hay price	Other feed price	Average purchased feed price	Percent of total energy imported
	t DM/hd	\$/t DM	\$/t DM	\$/t DM	\$/t DM	\$/t DM	% of ME
SN0002	4.79	432	380	327	–	406	52
SN0006	2.93	491	–	307	–	433	43
SN0009	4.49	426	220	244	–	335	59
SN0012	5.66	352	180	286	–	259	58
SN0014	7.54	425	244	224	91	328	73
SN0021	0.90	420	–	–	–	420	15
SN0023	2.38	512	–	244	–	452	35
SN0024	3.53	479	–	442	–	474	44
SN0026	3.34	561	–	218	–	530	39
SN0028	4.64	445	229	243	122	362	50
SN0029	4.58	563	–	–	–	563	48
SN0031	3.97	449	–	–	387	447	53
SN0033	2.58	350	–	–	–	350	35
SN0034	5.31	325	249	314	265	312	66
SN0035	3.58	348	–	338	–	348	51
SN0036	2.87	418	–	233	–	378	45
SN0037	3.69	518	222	274	–	454	55
SN0038	3.84	462	–	372	–	433	55
<b>Average</b>	<b>3.92</b>	<b>443</b>	<b>246</b>	<b>291</b>	<b>216</b>	<b>405</b>	<b>49</b>

Calculation of average price of silage, hay and other feed excludes zero values

**Table C4** Variable costs

Farm number	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd and shed costs	Fertiliser	Irrigation	Hay and silage making
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS
SN0002	0.09	0.18	0.04	0.09	0.13	0.52	0.26	0.01	0.23
SN0006	0.09	0.26	0.01	0.13	0.10	0.58	0.29	0.02	0.18
SN0009	0.17	0.11	0.01	0.12	0.20	0.61	0.06	0.05	0.41
SN0012	0.14	0.19	0.01	0.18	0.03	0.54	0.20	0.09	0.49
SN0014	0.14	0.16	0.12	0.06	0.08	0.56	0.28	0.06	0.41
SN0021	0.08	0.07	0.01	0.12	0.08	0.37	1.04	0.49	0.59
SN0023	0.08	0.09	–	0.16	0.16	0.49	1.15	0.10	0.50
SN0024	0.25	0.23	0.10	0.08	0.06	0.72	0.41	–	0.08
SN0026	0.23	0.27	0.07	0.25	0.11	0.93	0.44	0.03	0.67
SN0028	0.14	0.15	0.05	0.09	0.03	0.46	0.48	0.15	0.35
SN0029	0.18	0.14	–	0.20	0.32	0.83	0.47	0.18	0.41
SN0031	0.19	0.21	0.04	0.12	0.07	0.63	0.40	0.06	0.91
SN0033	0.11	0.23	0.05	0.12	0.10	0.60	0.89	–	0.30
SN0034	0.16	0.36	0.06	0.12	0.15	0.84	0.40	0.00	0.23
SN0035	0.11	0.15	0.12	0.08	0.12	0.59	0.43	–	0.26
SN0036	0.07	0.17	0.09	0.08	0.04	0.45	0.42	0.24	0.49
SN0037	0.10	0.12	0.05	0.11	0.12	0.50	0.35	–	0.25
SN0038	0.08	0.27	0.06	0.14	0.16	0.71	0.55	–	0.27
<b>Average</b>	<b>0.13</b>	<b>0.19</b>	<b>0.05</b>	<b>0.12</b>	<b>0.11</b>	<b>0.61</b>	<b>0.47</b>	<b>0.08</b>	<b>0.39</b>



Farm number	Fuel and oil	Pasture improvement/cropping	Other feed costs	Fodder purchases	Grain/concentrates/other	Agistment costs	Feed and water inventory change	Total feed costs	Total variable costs
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS
SN0002	0.20	0.05	0.03	0.80	2.54	0.06	-0.08	4.09	4.61
SN0006	0.20	0.18	0.04	0.71	2.47	-	-0.02	4.07	4.66
SN0009	0.14	0.23	-	1.18	2.70	-	-0.91	3.87	4.48
SN0012	0.20	0.20	-	0.66	1.76	-	0.08	3.69	4.24
SN0014	0.17	0.23	-	1.30	2.34	0.07	-0.88	4.10	4.66
SN0021	0.19	0.63	-	-	0.69	-	-1.24	2.31	2.68
SN0023	0.06	0.33	-	0.22	1.62	0.37	-0.18	4.18	4.66
SN0024	0.09	0.26	0.13	0.35	2.57	-	-0.08	3.80	4.53
SN0026	0.22	0.53	-	0.08	2.07	-	-1.06	2.99	3.91
SN0028	0.13	0.30	-	0.58	1.85	-	0.30	4.26	4.72
SN0029	0.25	0.51	-	-	2.26	-	0.65	4.56	5.39
SN0031	0.29	0.38	-	-	2.94	-	-0.24	4.75	5.38
SN0033	0.22	0.19	0.10	-	1.56	-	-0.44	2.82	3.42
SN0034	0.11	0.16	0.05	0.56	2.42	0.06	-0.01	3.98	4.82
SN0035	0.13	0.27	0.00	0.09	2.48	0.21	0.26	4.14	4.73
SN0036	0.16	0.24	0.03	0.30	1.89	0.30	0.23	4.30	4.75
SN0037	0.07	0.35	-	0.56	3.11	0.03	-0.04	4.68	5.18
SN0038	0.19	0.43	-	0.80	2.18	0.21	-0.11	4.52	5.24
<b>Average</b>	<b>0.17</b>	<b>0.30</b>	<b>0.02</b>	<b>0.46</b>	<b>2.19</b>	<b>0.07</b>	<b>-0.21</b>	<b>3.95</b>	<b>4.56</b>

**Table C5** Overhead costs

Farm number	Rates	Farm Insurance	Motor Vehicle Expenses	Repairs and maintenance	Other overheads	Employed labour	Total cash overheads	Depreciation	Imputed owner/operator & family labour	Total overheads
	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS	\$/kg MS
SN0002	0.13	0.08	0.07	0.69	0.32	0.01	1.31	0.99	1.87	4.17
SN0006	0.04	0.25	0.07	0.31	0.34	2.22	3.22	0.55	0.52	4.29
SN0009	0.04	0.15	0.04	0.57	0.11	1.28	2.19	0.47	1.17	3.83
SN0012	0.03	0.13	0.05	0.57	0.14	1.34	2.25	0.59	0.62	3.46
SN0014	0.03	0.12	0.02	0.67	0.17	0.76	1.77	0.30	0.47	2.54
SN0021	0.04	0.06	0.06	0.77	0.10	0.69	1.72	0.47	0.28	2.47
SN0023	0.06	0.08	0.10	0.32	0.14	0.14	0.84	0.12	1.36	2.33
SN0024	0.08	0.11	0.05	0.57	0.26	0.78	1.84	0.52	0.78	3.14
SN0026	0.03	0.18	0.02	0.43	0.05	1.31	2.02	0.65	0.69	3.36
SN0028	0.02	0.08	0.01	0.39	0.09	1.11	1.69	0.21	0.06	1.95
SN0029	0.03	0.13	0.02	0.57	0.16	1.85	2.76	0.72	0.34	3.83
SN0031	0.04	0.12	0.05	0.46	0.16	1.73	2.56	0.60	0.29	3.45
SN0033	0.01	0.07	0.01	0.47	0.15	1.25	1.96	0.42	0.84	3.23
SN0034	0.04	0.08	0.06	0.54	0.24	1.39	2.35	0.27	0.52	3.14
SN0035	–	0.05	0.03	0.25	0.30	3.09	3.72	0.15	0.10	3.97
SN0036	0.09	0.11	0.05	0.24	0.11	0.91	1.52	0.38	1.21	3.11
SN0037	0.09	0.13	0.05	0.54	0.15	0.30	1.27	0.34	1.67	3.27
SN0038	0.08	0.13	0.04	0.52	0.16	0.77	1.69	0.63	0.81	3.13
<b>Average</b>	<b>0.05</b>	<b>0.11</b>	<b>0.04</b>	<b>0.49</b>	<b>0.17</b>	<b>1.16</b>	<b>2.04</b>	<b>0.47</b>	<b>0.75</b>	<b>3.26</b>

**Table C6** Variable costs – percentage

Farm number	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd and shed costs	Fertiliser	Irrigation	Hay and silage making
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
SN0002	1.1	2.0	0.4	1.0	1.4	5.9	2.9	0.1	2.7
SN0006	1.0	2.9	0.1	1.4	1.1	6.5	3.3	0.2	2.0
SN0009	2.1	1.3	0.1	1.4	2.4	7.3	0.7	0.6	5.0
SN0012	1.8	2.4	0.1	2.4	0.3	7.1	2.6	1.2	6.4
SN0014	2.0	2.3	1.7	0.8	1.1	7.8	3.9	0.9	5.8
SN0021	1.6	1.5	0.3	2.3	1.6	7.2	20.1	9.5	11.5
SN0023	1.1	1.3	0.0	2.3	2.3	7.0	16.4	1.4	7.2
SN0024	3.3	3.1	1.2	1.1	0.8	9.4	5.3	0.0	1.1
SN0026	3.1	3.7	0.9	3.5	1.5	12.7	6.0	0.4	9.2
SN0028	2.1	2.3	0.7	1.4	0.4	6.9	7.1	2.2	5.2
SN0029	1.9	1.5	0.0	2.1	3.5	9.0	5.1	1.9	4.5
SN0031	2.2	2.4	0.4	1.3	0.8	7.1	4.5	0.7	10.4
SN0033	1.6	3.5	0.7	1.7	1.5	9.0	13.4	0.0	4.6
SN0034	2.0	4.5	0.7	1.5	1.9	10.6	5.0	0.0	2.9
SN0035	1.3	1.8	1.4	0.9	1.4	6.8	4.9	0.0	3.0
SN0036	0.9	2.2	1.1	1.0	0.5	5.7	5.3	3.0	6.3
SN0037	1.2	1.4	0.6	1.3	1.5	5.9	4.1	0.0	3.0
SN0038	0.9	3.3	0.7	1.7	1.9	8.5	6.6	0.0	3.2
<b>Average</b>	<b>1.7</b>	<b>2.4</b>	<b>0.6</b>	<b>1.6</b>	<b>1.4</b>	<b>7.8</b>	<b>6.5</b>	<b>1.2</b>	<b>5.2</b>

Table C6 (continued)

Farm number	Fuel and oil	Pasture improvement/cropping	Other feed costs	Fodder purchases	Grain/concentrates/other	Agistment costs	Feed and water inventory change	Total feed costs	Total variable costs
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
SN0002	2.3	0.6	0.3	9.1	28.9	0.7	-0.9	46.6	52.5
SN0006	2.2	2.0	0.4	8.0	27.6	0.0	-0.2	45.6	52.1
SN0009	1.6	2.8	0.0	14.2	32.5	0.0	-10.9	46.6	53.9
SN0012	2.6	2.5	0.0	8.6	22.9	0.0	1.1	48.0	55.1
SN0014	2.3	3.2	0.0	18.1	32.6	1.0	-12.2	56.9	64.7
SN0021	3.6	12.3	0.0	0.0	13.5	0.0	-24.1	44.9	52.1
SN0023	0.9	4.7	0.0	3.2	23.2	5.3	-2.6	59.7	66.7
SN0024	1.1	3.3	1.6	4.6	33.5	0.0	-1.0	49.6	59.0
SN0026	3.0	7.4	0.0	1.1	28.5	0.0	-14.5	41.1	53.8
SN0028	2.0	4.4	0.0	8.7	27.7	0.0	4.5	63.8	70.7
SN0029	2.8	5.5	0.0	0.0	24.5	0.0	7.1	49.5	58.5
SN0031	3.3	4.3	0.0	0.0	33.3	0.0	-2.7	53.8	60.9
SN0033	3.2	2.9	1.5	0.0	23.4	0.0	-6.6	42.4	51.4
SN0034	1.4	2.1	0.6	7.1	30.4	0.8	-0.1	50.0	60.6
SN0035	1.5	3.1	0.1	1.0	28.5	2.5	3.0	47.6	54.4
SN0036	2.0	3.1	0.4	3.8	24.1	3.8	2.9	54.7	60.4
SN0037	0.9	4.2	0.0	6.6	36.8	0.3	-0.5	55.4	61.3
SN0038	2.3	5.1	0.0	9.6	26.0	2.6	-1.3	54.0	62.6
<b>Average</b>	<b>2.2</b>	<b>4.1</b>	<b>0.3</b>	<b>5.8</b>	<b>27.7</b>	<b>0.9</b>	<b>-3.3</b>	<b>50.6</b>	<b>58.4</b>



**Table C7** Overhead costs – percentage

Farm number	Rates	Farm Insurance	Motor Vehicle Expenses	Repairs and maintenance	Other	Employed labour	Total cash overheads	Depreciation	Imputed owner/operator & family labour	Total
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
SN0002	1.5	0.9	0.8	7.9	3.7	0.1	14.9	11.3	21.3	47.5
SN0006	0.4	2.8	0.8	3.5	3.8	24.8	36.0	6.1	5.8	47.9
SN0009	0.5	1.8	0.5	6.9	1.3	15.4	26.4	5.6	14.1	46.1
SN0012	0.4	1.7	0.6	7.3	1.8	17.4	29.2	7.7	8.1	44.9
SN0014	0.4	1.7	0.3	9.3	2.4	10.6	24.7	4.1	6.5	35.3
SN0021	0.7	1.2	1.1	15.0	1.9	13.5	33.4	9.2	5.4	47.9
SN0023	0.9	1.2	1.4	4.5	2.0	2.0	12.1	1.8	19.4	33.3
SN0024	1.0	1.4	0.6	7.4	3.3	10.2	24.1	6.8	10.1	41.0
SN0026	0.5	2.5	0.3	5.9	0.6	17.9	27.8	8.9	9.5	46.2
SN0028	0.2	1.2	0.1	5.9	1.3	16.6	25.3	3.1	0.9	29.3
SN0029	0.3	1.4	0.2	6.1	1.7	20.1	29.9	7.8	3.7	41.5
SN0031	0.4	1.3	0.5	5.2	1.8	19.6	29.0	6.7	3.3	39.1
SN0033	0.2	1.0	0.1	7.1	2.2	18.9	29.5	6.4	12.7	48.6
SN0034	0.5	1.0	0.8	6.8	3.0	17.5	29.5	3.3	6.5	39.4
SN0035	0.0	0.6	0.4	2.9	3.4	35.6	42.8	1.7	1.1	45.6
SN0036	1.2	1.4	0.7	3.0	1.4	11.6	19.3	4.9	15.4	39.6
SN0037	1.1	1.6	0.6	6.4	1.8	3.5	15.0	4.0	19.7	38.7
SN0038	0.9	1.5	0.5	6.2	1.9	9.2	20.2	7.6	9.6	37.4
<b>Average</b>	<b>0.6</b>	<b>1.5</b>	<b>0.6</b>	<b>6.5</b>	<b>2.2</b>	<b>14.7</b>	<b>26.1</b>	<b>5.9</b>	<b>9.6</b>	<b>41.6</b>

**Table C8** Capital structure

Farm assets					Other farm assets (per usable hectare)				
	Land value	Land value	Permanent water value	Permanent water value	Plant and equipment	Livestock	Hay and grain	Other assets	Total assets
	\$/ha	\$/cow	\$/ha	\$/cow	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha
Average	19,166	14,544	3,531	3,310	2,341	4,014	608	538	27,088
Liabilities					Equity				
	Liabilities per usable hectare		Liabilities per milking cow		Equity per usable hectare		Average equity		
	\$/ha		\$/cow		\$/ha		%		
Average	7,226		5,984		19,863		73		

**Table C9** Historical data – average farm income, costs and profit per kilogram of milk solids

Income					Variable costs							
Milk income (net)		Gross farm income			Herd costs		Shed costs		Feed costs		Total variable costs	
Year	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)
2011/12	6.64	8.15	7.48	9.19	0.31	0.39	0.25	0.30	2.86	3.51	3.42	4.20
2012/13	6.03	7.20	6.95	8.30	0.32	0.39	0.24	0.29	3.01	3.60	3.57	4.27
2013/14	7.12	8.30	7.98	9.30	0.32	0.37	0.21	0.25	3.20	3.73	3.73	4.35
2014/15	7.28	8.29	8.25	9.40	0.30	0.34	0.21	0.24	3.28	3.74	3.79	4.32
2015/16	6.97	7.84	7.94	8.93	0.35	0.40	0.21	0.24	3.01	3.39	3.57	4.02
2016/17	6.48	7.16	7.62	8.42	0.40	0.45	0.22	0.24	3.07	3.39	3.68	4.07
2017/18	6.81	7.38	7.49	8.12	0.34	0.37	0.23	0.24	3.63	3.94	4.20	4.55
2018/19	7.37	7.89	8.14	8.72	0.30	0.32	0.26	0.28	4.54	4.86	5.10	5.45
2019/20	8.36	8.85	9.32	9.85	0.31	0.33	0.24	0.25	4.67	4.94	5.22	5.52
2020/21	8.51	8.87	9.53	9.93	0.33	0.34	0.24	0.25	3.46	3.61	4.03	4.20
2021/22	8.68	8.68	9.90	9.90	0.37	0.37	0.24	0.24	3.95	3.95	4.56	4.56
<b>Average</b>		<b>8.06</b>		<b>9.10</b>		<b>0.37</b>		<b>0.26</b>		<b>3.88</b>		<b>4.50</b>

Overhead costs							Profit							
Cash overhead costs		Non-cash overhead costs		Total overhead costs			Earnings before interest and tax		Interest and lease charges		Net farm income			
Year	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Nominal (\$/kg MS)	Real (\$/kg MS)	Return on total assets (%)	Return on equity (%)
2011/12	1.35	1.66	1.05	1.29	2.40	2.95	1.66	2.04	0.73	0.89	0.93	1.15	5.5	4.9
2012/13	1.44	1.72	1.12	1.34	2.56	3.06	0.82	0.98	0.66	0.79	0.16	0.19	2.7	0.5
2013/14	1.54	1.79	1.16	1.35	2.70	3.15	1.55	1.81	0.61	0.71	0.94	1.09	4.8	4.7
2014/15	1.52	1.73	1.02	1.16	2.54	2.89	1.92	2.19	0.56	0.63	1.36	1.55	5.3	5.7
2015/16	1.49	1.68	1.17	1.32	2.66	2.99	1.71	1.92	0.55	0.62	1.16	1.30	4.7	4.7
2016/17	1.67	1.85	1.16	1.28	2.83	3.13	1.11	1.23	0.51	0.56	0.60	0.66	2.7	2.1
2017/18	1.49	1.62	1.22	1.32	2.71	2.94	0.58	0.63	0.58	0.63	0.00	-0.00	2.1	0.6
2018/19	1.55	1.66	1.19	1.27	2.74	2.93	0.31	0.33	0.61	0.65	-0.30	-0.32	0.3	-2.1
2019/20	1.78	1.88	0.89	0.95	2.67	2.83	1.43	1.51	0.68	0.72	0.74	0.79	3.8	8.8
2020/21	1.84	1.92	1.05	1.09	2.88	3.00	2.62	2.73	0.61	0.64	2.01	2.09	6.7	11.0
2021/22	2.04	2.04	1.22	1.22	3.26	3.26	2.08	2.08	0.59	0.59	1.49	1.49	4.7	7.7
<b>Average</b>		<b>1.78</b>		<b>1.24</b>		<b>3.01</b>		<b>1.59</b>		<b>0.68</b>		<b>0.91</b>	<b>3.9</b>	<b>4.4</b>

Note: 'Real' dollar values are the nominal values converted to 2021/22 dollar equivalents by the consumer price index (CPI) to allow for inflation. From 2016/17 Gross farm income does not include feed inventory changes and changes to the value of carry-over water. These are included in feed costs.

**Table C10** Historical data – average farm physical information

Year	Total usable area	Milking area	Total water use efficiency	Number of milking cows	Milking cows per useable area	Milk sold	Milk sold	Estimated grazed pasture*	Estimated conserved feed*	Home grown feed as % of ME consumed	Concentrate price	
	ha	ha	t DM/100mm/ha	hd	hd/ha	kg MS/cow	kg MS/ha	t DM/ha	t DM/ha	% of ME	Nominal (\$/t DM)	Real (\$/t DM)
2011/12	351	156	0.54	450	1.5	495	728	6.8	0.9	52	301	370
2012/13	323	151	0.61	337	1.1	523	601	6.5	1.2	55	311	372
2013/14	381	139	0.60	350	1.0	541	546	6.2	1.0	54	377	439
2014/15	372	165	0.56	430	1.1	540	597	6.7	1.8	57	389	443
2015/16	379	164	0.57	425	1.1	552	597	6.5	1.9	57	382	430
2016/17	343	153	0.63	396	1.2	520	611	6.5	1.7	57	336	371
2017/18	333	149	0.75	401	1.3	526	665	5.6	1.6	55	398	432
2018/19	390	184	0.80	424	1.2	546	643	5.3	1.6	56	552	591
2019/20	419	181	0.65	463	1.2	555	673	4.8	1.3	57	522	552
2020/21	416	156	0.58	442	1.3	578	710	5.1	2.7	52	408	425
2021/22	398	160	0.55	437	1.3	575	731	4.7	2.5	51	443	443
<b>Average</b>	<b>373</b>	<b>160</b>	<b>0.62</b>	<b>414</b>	<b>1.2</b>	<b>541</b>	<b>646</b>	<b>5.9</b>	<b>1.7</b>	<b>55</b>		<b>442</b>

\*From 2006/07 to 2010/11 estimated grazed pasture and conserved feed was calculated per usable hectare  
 From 2011/12 estimated grazed pasture and conserved feed was calculated per hectare of milking area

## Appendix D Glossary of terms, abbreviations and standard values

All other farm income	Income to the farm from all sources except milk. Includes livestock trading profit, dividends, interest payments received, and rent from farm houses.	Full time equivalent (FTE)	Standardised labour unit. Equal to 2,400 hours a year. Calculated as 48 hours a week for 50 weeks a year.
Allocation	Water that is actually available to use or trade in any given year, including new allocations and carryover. Previously known as temporary water. Full allocation means irrigators receive 100% of their HRWS.	Grazed pasture	Calculated using the back-calculation approach. Grazed pasture is calculated as the difference between total metabolisable energy required by livestock over the year and amount of metabolisable energy available from other sources (hay, silage, grain, and concentrates). Total metabolisable energy required by livestock is a factor of age, weight, growth rate, pregnancy, and lactation requirements, walking distance to shed, terrain and number of animals. Total metabolisable energy available is the sum of metabolisable energy from all feed sources except pasture, calculated as (weight (kg) x dry matter content (DM per cent) x metabolisable energy (MJ/kg DM)).
Allocation trade	The transfer of a volume of allocation water between a seller and buyer. Water is traded within a current irrigation season. Previously this was known as trading of temporary water entitlement and some irrigators still use this term.	Gross farm income	Farm income including milk sales, livestock trading and other income such as income from grants and rebates.
Appreciation	An increase in the value of an asset in the market, often only applicable to land value.	Gross margin	Gross farm income minus total variable costs.
Asset	Anything managed by the farm, whether it is owned or not. Assets include owned land and buildings, leased land, plant and machinery, fixtures and fittings, trading stock, farm investments (i.e., Farm Management Deposits), debtors, and cash.	Herd costs	Cost of artificial insemination (AI) and herd tests, animal health and calf rearing.
Cash overheads	All fixed costs that have a cash cost to the business. Includes all overhead costs except imputed labour costs and depreciation.	Imputed	An estimated amount introduced into economic management analysis to allow reasonable comparisons between years and between other businesses.
Cost structure	Variable costs as a percentage of total costs, where total costs equal variable costs plus overhead costs.	Imputed labour cost	An allocated allowance for the cost of owner/operator, family, and sharefarmer time in the business.
Concentrates	Refers to feeds with a concentrated source of energy such as grains, pellets and other grain mixes.	Interest and lease costs	Total interest plus total lease costs paid.
Debt servicing ratio	Interest and lease costs as a percentage of gross farm income.	Labour cost	Cost of the labour resource on farm. Includes both imputed and employed labour costs.
Depreciation	Decrease in value over time of capital asset, usually as a result of using the asset. Depreciation is a non-cash cost of the business but reduces the book value of the asset and is therefore a cost.	Labour efficiency	FTEs per cow and per kg MS. Measures productivity of the total labour resources in the business.
Earnings before interest and tax (EBIT)	Gross income minus total variable and total overhead costs.	Liability	Money owed to someone else, e.g., family or a financial institute such as a bank.
Employed labour cost	Cash cost of any paid employee, including on-costs such as superannuation and Workcover.	Livestock trading profit	An estimate of the annual contribution to gross farm income by accounting for the changes in the number and value of livestock during the year. It is calculated as the trading income from sales minus purchases, plus changes in the value and number of livestock on hand at the start and end of the year, and accounting for births and deaths.
Equity	Total assets minus total liabilities. Equal to the total value of capital invested in the farm business by the owner/operator(s).	Milk income	Income from the sale of milk. This is net of compulsory levies and charges.
Equity per cent	Total equity as a percentage of the total assets owned. The proportion of the total assets owned by the business.	Milking area	The area of land grazed by milking cows to produce milk.
Feed costs	Cost of fertiliser, irrigation (including effluent), hay and silage making, fuel and oil, pasture improvement, fodder purchases, grain/concentrates, agistment and lease costs associated with any of the above costs, and feed inventory change.	Net farm income	Earnings before interest and tax (EBIT) minus interest and lease costs. The amount of profit available for capital investment, loan principal repayments and tax.
Feed inventory change	An estimate of the feed on hand at the start and end of the financial year to capture feed used in the production of milk and livestock.	Nominal terms	Dollar values or interest rates that include an inflation component.
Finance costs	See interest and lease costs.		

Number of milkers	Total number of cows milked for at least three months.
Other income	Income to the farm from other farm owned assets and farm business related external sources. Includes milk factory dividends, interest payments received, and rent from farm cottages.
Overhead costs	All fixed costs incurred by the farm business that do not vary with the level of production. These include cash overhead costs such as employed labour and noncash costs such as imputed owner-operator labour, family labour and depreciation of plant and equipment. It excludes interest, lease costs, capital expenditure, principal repayments, drawings, and tax.
Real terms	Dollar values or interest rates that have no inflation component.
Return on equity (ROE)	Net farm income divided by the value of total equity.
Return on total assets (ROTA)	Earnings before interest and tax divided by the value of total assets under management, including owned and leased land.
Shed costs	Cost of shed power and dairy supplies such as filter socks, rubberware, vacuum pump oil etc.
Top 25%	Regional or State average for the Top 25% of participant farms ranked by return on total assets; can also be referred to as the top group, top performers within a region or the state.
Total income	See gross farm income.
Total usable area	Total hectares managed minus the area of land which is of little or no value for livestock production e.g., house and shed area.
Total water use efficiency	Homegrown feed consumed or harvested per 100 mm water 'applied' (rainfall and irrigation) to the usable hectares on the farm.
Variable costs	All costs that vary with the size of production in the enterprise e.g., herd, shed and feed costs (including feed and water inventory change).
Water inventory change	An estimate of the values irrigation water on hand at the start and end of the financial year to capture water used in the production of pasture and crops.

#### Feeding Systems:

Low bail	Low bail is defined by the one-tonne annual cap of grain or concentrates fed in the dairy bail – i.e. cows are fed up to one tonne of grain and concentrate in the dairy at milking time throughout lactation and livestock graze pasture all year round.
Moderate – High bail	The level of grain or concentrate fed in the bail is more significant than one tonne per annum, and livestock graze pasture all year round.
Partial mixed ration	In the partial mixed ration (PMR) system, livestock animals graze on pasture for most of the year, if not all of the year, while being fed a PMR on a feed pad.
Hybrid system	Hybrid systems are classified as grazing pasture for fewer than nine months of the year while feeding a partial mixed ration on a feed pad with grain or concentrates.
Total mixed ration	A total mixed ration or TMR is classified by zero-grazing, where cows are contained and fed a TMR throughout the year.



## List of abbreviations

AI	Artificial insemination
CH <sub>4</sub>	Methane
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> -e	Carbon dioxide equivalent
CoP	Cost of production
DFMP	Dairy Farm Monitor Project
DM	Dry matter of feed stuffs
DJPR	Department of Jobs, Precincts and Resources, Victoria
EBIT	Earnings before interest and tax
FPCM	Fat and protein corrected milk
FTE	Full time equivalent
ha	Hectare(s)
hd	Head
HRWS	High Reliability Water Shares
kg	Kilograms
LRWS	Low Reliability Water Shares.
ME	Metabolisable energy (MJ/kg DM)
MJ	Megajoules of energy
ML	Megalitres
mm	Millimetres. 1 mm is equivalent to 4 points or 1/25th of an inch of rainfall
MS	Milk solids (protein and fat)
N <sub>2</sub> O	Nitrous oxide
Q1	First quartile, i.e., the value of which one quarter, or 25%, of data in that range is less than the average
Q3	Third quartile, i.e., the value of which one quarter, or 25%, of data in that range is greater than the average
ROTA	Return on total assets
ROE	Return on equity
t	Tonne = 1,000 kg

## Standard values

### Pasture consumption

The pasture consumption calculation assumes 11 ME for homegrown feed.

### Livestock values

The standard values used to estimate the inventory values of livestock were determined by breed and liveweight. Example values for Friesians were:

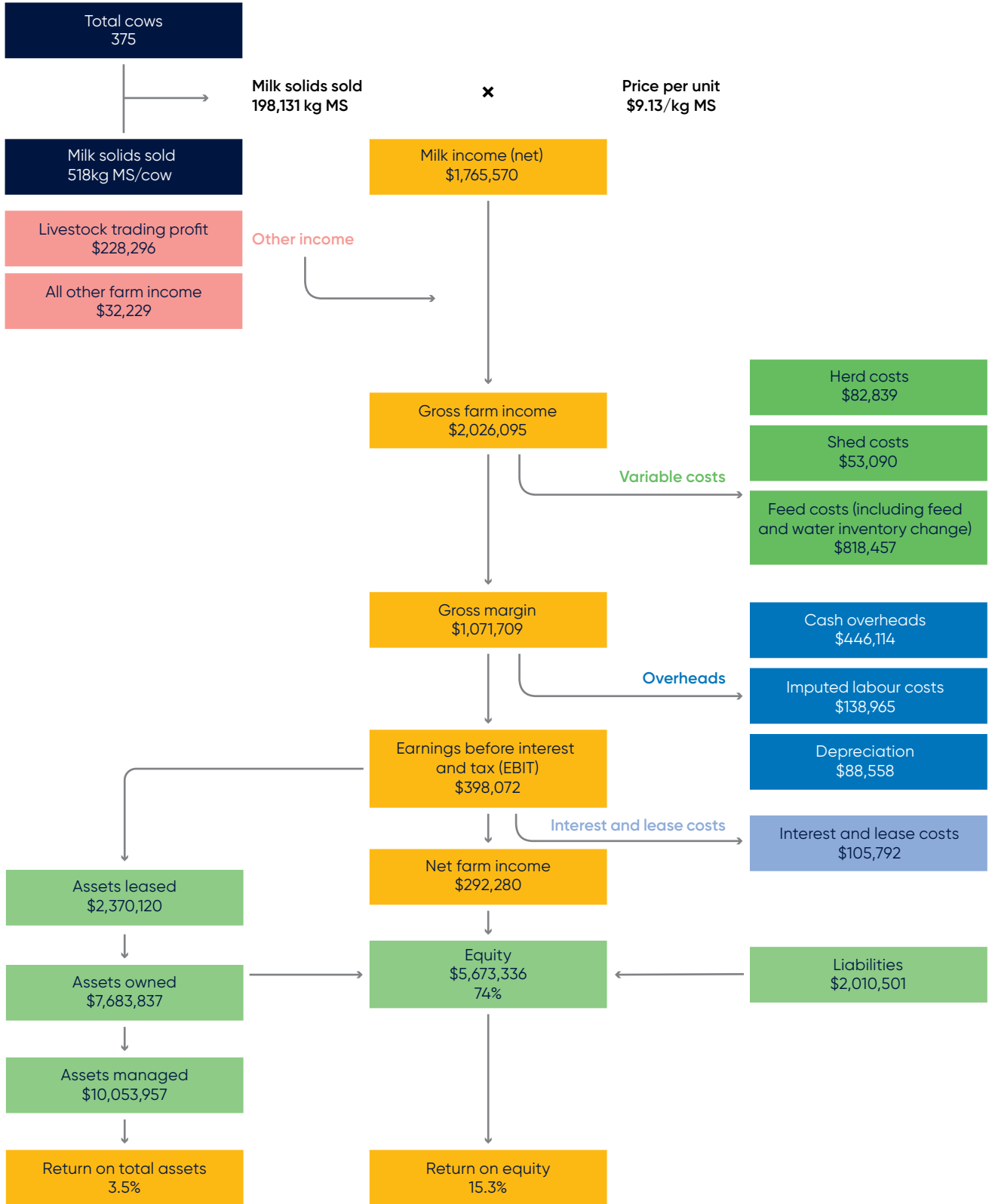
Category	Opening value (\$/hd)	Closing value (\$/hd)
Mature cows (550kg)	2,200	2,200
2-year-old heifers	1,650	2,200
1-year old heifers	825	1,650
21/22 calves		825
Mature bulls	3,300	3,300

### Imputed owner/operator and family labour

In 2021/22, the imputed owner/operator and family labour rate was \$34/hr based on a full time equivalent (FTE) working 48 hours/week for 50 weeks of the year.

Dairy Farm Monitor Project Map State average data 2021/22

All 36 farms





**Dairy Australia Limited** ABN 60 105 227 987  
Level 3, HWT Tower  
40 City Road, Southbank Vic 3006 Australia  
T +61 3 9694 3777 F +61 3 9694 3701  
E [enquiries@dairyaustralia.com.au](mailto:enquiries@dairyaustralia.com.au)  
[dairyaustralia.com.au](http://dairyaustralia.com.au)

#### Disclaimer

The content of this publication including any statements regarding future matters (such as the performance of the dairy industry or initiatives of Dairy Australia) is based on information available to Dairy Australia at the time of preparation. Dairy Australia does not guarantee that the content is free from errors or omissions and accepts no liability for your use of or reliance on this document. Furthermore, the information has not been prepared with your specific circumstances in mind and may not be current after the date of publication. Accordingly, you should always make your own enquiry and obtain professional advice before using or relying on the information provided in this publication.

#### Acknowledgement

Dairy Australia acknowledges the contribution made to Dairy Farm Monitor Project New South Wales 2021/22 by the Commonwealth government through its provision of matching payments under Dairy Australia's Statutory Funding Agreement.

© Dairy Australia Limited 2022. All rights reserved.

ISSN 2206-0014