Dairy Australia

NSW GOVERNMENT

Dairy Farm Monitor Project

New South Wales Annual Report 2023/24

Delivering *for* Dairy

Acknowledgements

Participants

To continuing and returning participants and those new to the project, thank you for your participation, including all your efforts in supplying data for the 2023/24 Dairy Farm Monitor Project.

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) and Zita Ritchie, Development Officer with the NSW Department of Primary Industries and Regional Development (NSW DPIRD) in conjunction with Dairy Australia.

Contributors/data collectors

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NSW Department of Primary Industries and Regional Development staff: Juan Gargiulo, Zita Ritchie, Blake Cheer 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 analyst Fiona Smith, who conducted data checking, validation and analysis is much appreciated.

Industry partners

The Dairy Farm Monitor Project is a collaboration between NSW DPIRD and Dairy Australia. Now in its thirteenth 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

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What's new in 2023/24

The Dairy Farm Monitor Report for 2023/24 includes some minor changes and updates from last year.

- The number of farms in the project remained the same at thirty-six, however an additional farm was recruited in the North and one farm opted out in the South.
- "Homegrown feed as % of ME consumed" is now aligned with the DairyBase calculation and is homegrown feed consumed (including wastage) + grazed feed. Historically the calculation was homegrown feed fed (no wastage included) + grazed feed.
- Changes to ADCC estimates
  - Changes in emission factors, e.g. electricity-derived emissions have come down for most states, although diesel-derived emissions have increased. Similarly, some CH_4 and N_2O emission from fertiliser and waste management have decreased, while others have increased based on the most recent scientific results.
  - More accurate allocation of purchased feed-derived emissions to milk vs meat enterprise, based on where the purchased feed is fed on the farm. Any feed fed on the milking platform is allocated to the milk enterprise. Any feed fed on the support block is proportionally allocated to both enterprises based on the ratio of milk to meat produced. This change may increase meat emissions intensity for some farms.
  - Tree sequestration was missing for some regions when selecting Radiata pine (i.e. Tasmania, Queensland, Mallee region, and the South Coast and Riverina/Inland region of NSW).
  - In 2022/23 greater detail was collected about manure management at the dairy and feeding areas, fuel usage by contractors and trees, meaning historical data may not be comparable.

Executive summary

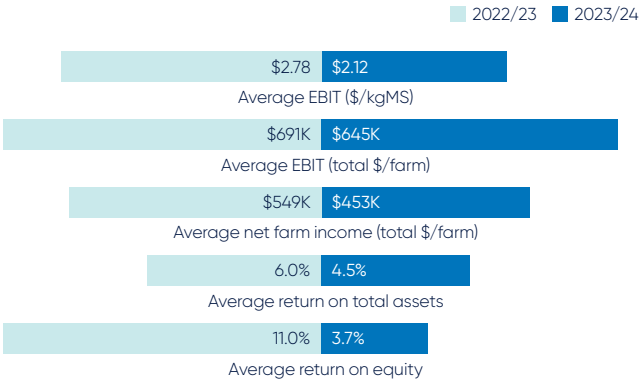
In 2023/24 the average NSW Farm Monitor profitability decreased on the previous year, whilst being the 3rd highest in the 13 years of the project (accounting for inflation). Profits remained above the long-term average for the 4th year in a row with an average Earnings Before interest and Tax (EBIT) of $2.12/kgMS.

Milk price averaged $11.88 per kilograms of milk solids ($/kgMS) and gross farm income was marginally lower for the state with the influence of lower livestock trading profits.

Seasonal conditions varied across the year depending on the region, with a relatively dry start to the financial year and then wetter autumn conditions experienced along the coastal strip, relative to inland regions.

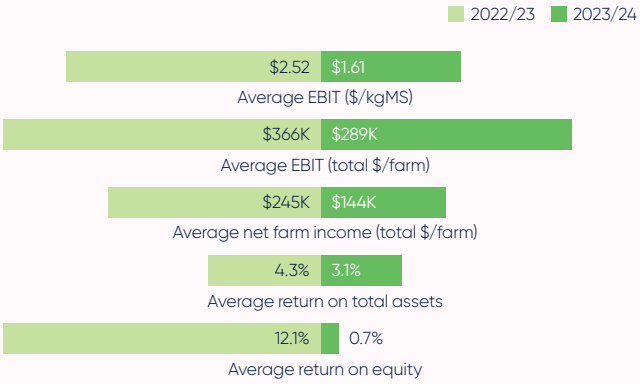
Variable and overhead costs increased on average across the state.

New South Wales



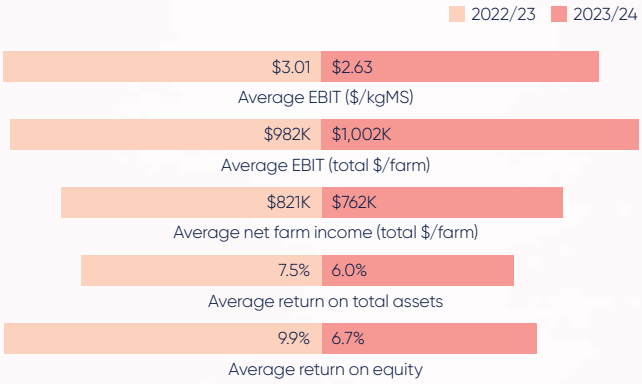
Drier seasonal conditions at the start of the financial year were experienced across much of the state. Some areas experienced welcome rain in late spring and early summer but the autumn period was challenging for coastal areas which experienced prolonged wet conditions, hampering timeliness of sowing and fodder conservation and impacting costs during this period. Despite the strong milk price, lower livestock trading profits saw a slightly weaker average gross farm income for the state compared to the previous year, however it is the second highest in the 13 years of DFMP in NSW. Interest and lease costs continue to increase as a result of higher interest and lease rates, as well as increased borrowings for on farm investments and more equipment purchases.

The North



The North farm participants received a slightly higher average milk price than the previous year (the second highest average milk price in 13 years in real terms), resulting in the second highest gross farm income. This more than offset the much lower other farm income seen this year driven by a significant reduction in livestock trading profit. While overhead costs remained relatively stable, the increase in variable costs (shed and feed costs) and decline in other farm income saw a 36 per cent decrease in profitability (average EBIT per kilogram of milk solids). However, it remains above the long-term average and was the third highest seen in the last 13 years (accounting for inflation).

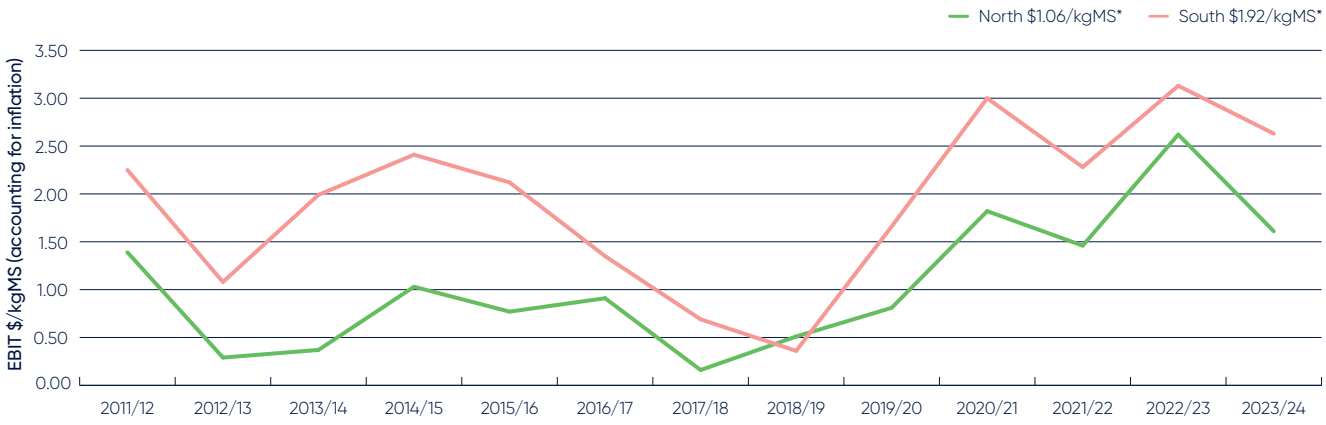
The South



The South participants received the highest average milk price in 13 years, resulting in a slightly higher gross farm income than the previous year. Similar to the North, the South saw lower other farm income with a significant decrease in livestock trading profit. Increased feed and overhead costs resulted in a 13 per cent decline in farm profitability (average EBIT per kilogram of milk solids). This was the third highest profit in the 13 years of the project (accounting for inflation) and above the long-term average.

How does 2023/24 compare?

Historical Profitability



*Long term average value

The average profit (dollars per kg milk solids) for each region in 2023/24 was above the long-term average for the respective regions.

Strong profit results per farm (average EBIT $645,097) across the state, were above the 13-year long term average of $331,684.

Milk price

Milk price increased four per cent (nominal) on average from 2022/23. Milk income contributed approximately 94 per cent of gross farm income outweighing declines seen in livestock trading and other farm income.

New South Wales ↑ 4%
to $11.88/kgMS

The North ↑ 3%
to $12.37/kgMS

The South ↑ 4%
to $11.39/kgMS

Expectations for profit in 2024/25

Participant farmers were generally of the view that returns for the 2024/25 period will remain stable or improve slightly. Only 22 per cent of North and 28 per cent of South farms are anticipating a decline in returns during this period. Input costs were identified by participants as the greatest risk to their business followed by seasonal conditions and then labour and milk price.

Greenhouse gas emissions

The average net greenhouse gas emissions for NSW dairy farm monitor participants were 3,846 tonnes of carbon dioxide equivalents per farm in 2023/2024. This was an increase on the previous year, likely due to an increase across all emission sources associated with higher average milk solids production. Emissions intensity increased slightly on the previous year but has remained relatively stable at 0.93 t CO_2-e/t FPCM.

Part One: State overview

State-wide, average profitability in New South Wales was positive and above the 13-year long term average of $1.47/kgMS (adjusted for inflation), however it declined by 24 per cent on the previous year in nominal terms. There was variability in the profitability of the project participants with the average profit decreasing more in the North (36 per cent) than in the South (13 per cent).

While gross farm incomes remained relatively stable, milk income contributed a higher percentage relative to other farm income with a significant decline in livestock trading profit across the state. On average, herd and shed costs remained stable with increases in feed costs on a $/kgMS basis, being the result of slightly more purchased feed fed at a higher average price per tonne of dry matter than the previous year in both the North and South. Total overhead costs (cash and non-cash) increased slightly which was influenced by an increase in cash overhead costs and a slight decrease in non-cash overheads.

The 2023/24 year started off generally drier through winter which continued into spring resulting in parts of the state heading into very dry conditions. These conditions eased in parts of the state with late spring and early summer rainfall events, however the impact of the dry was particularly felt in the Hunter and surrounds, the Far North Coast and Far South Coast. Compared to the previous year, farms with irrigation were able to manage conditions better than those without, with water storages at generally high levels. Moving into autumn, the Murray and Riverina regions experienced drier conditions. Conversely, while there were no significant flood events impacting farms as has occurred in recent years, many farms along the coastal strip experienced significant and prolonged wet conditions during autumn which resulted in challenging operating conditions at a crucial time of year. By the end of the year farms in both regions had increased, on average, the value of feed and water inventory relative to the previous 2022/23 year which was very challenging with extreme flooding and wet conditions.

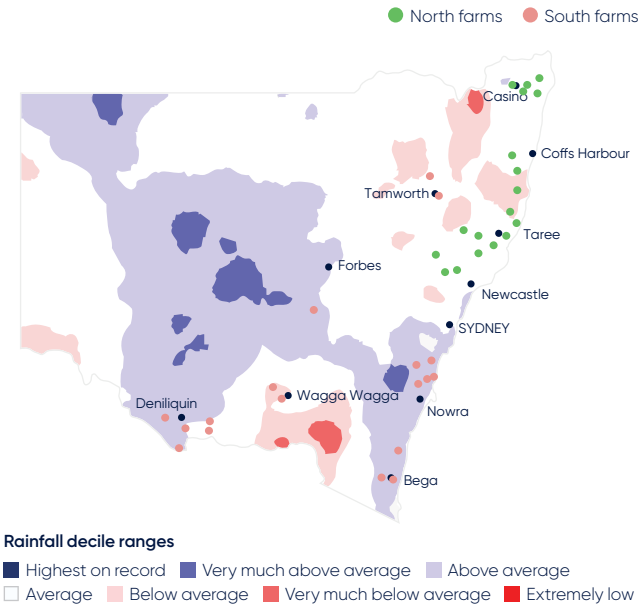
Interest and lease costs continued to increase again this year, up by 23 per cent on average with increases seen in both regions but a larger increase seen in the South this year. This appears to have been driven largely by more plant and equipment finance and increases in interest rates.

The average herd size of the farms in the project increased slightly in both regions as did per cow milk production. Milk production per cow has been influenced by slightly better conditions than the previous year, despite the challenging wet autumn conditions experienced on many of the coastal farms. The proportion of homegrown feed as a percentage of metabolisable energy consumed decreased slightly and homegrown feed costs were lower on a $/kgMS basis. Labour efficiency improved in terms of cows and milk solids produced per full time labour equivalent (FTE).

Dairying in New South Wales

There were approximately **452** dairy farm businesses in NSW that produced **1,040.2 million litres** or **12 per cent** of Australia's national milk production in 2023/24.

Dairy Farm Monitor Project farm locations and rainfall in 2023/24



In 2023/24 farm profitability for the state has been influenced by:

↑4%
increase in average milk price to **$11.88/kgMS**

↑2%
in herd costs to **$0.51/kgMS**

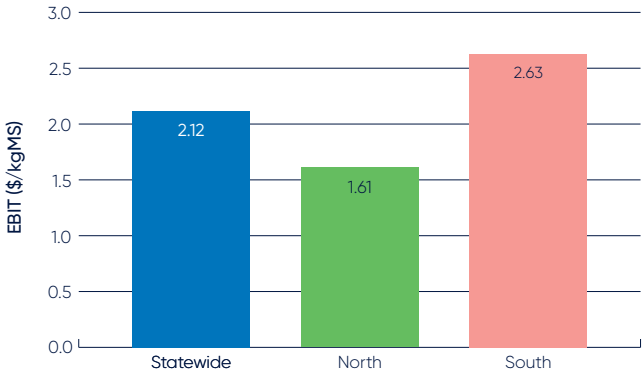
↑10%
in shed costs to **$0.34/kgMS**

↑10%
in total feed costs to **$5.53/kgMS**

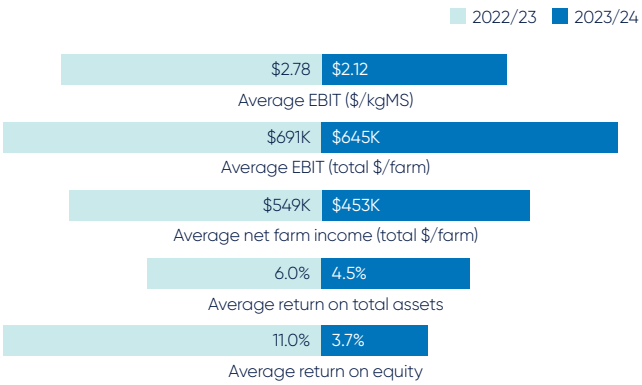
↑2%
in overhead costs to **$4.10/kgMS**

Profitability

The state-wide average profit per kilogram milksolids (earnings before interest and tax, EBIT) was the third highest on record, accounting for inflation. Profitability was mixed across the state and while both the North and South recorded their third highest average profit, profitability decreased by 36 per cent in the North compared to 13 per cent in the South.



In 2023/24, 89 per cent of all NSW participants had a positive profit (32 out of 36).



Physical parameters and seasonal conditions

Seasonal conditions were very mixed across the state. Drier winter conditions continued into early spring for some regions, although there were timely rainfall events in spring/summer in some regions. The coastal strip experienced a very wet period moving into autumn which presented challenges to operating conditions.

The trend of declining homegrown feed on the milking platform (grazed and conserved) experienced over the previous two financial years was reversed in 2023/24, given less extreme weather events.

NSW pasture based dairy production

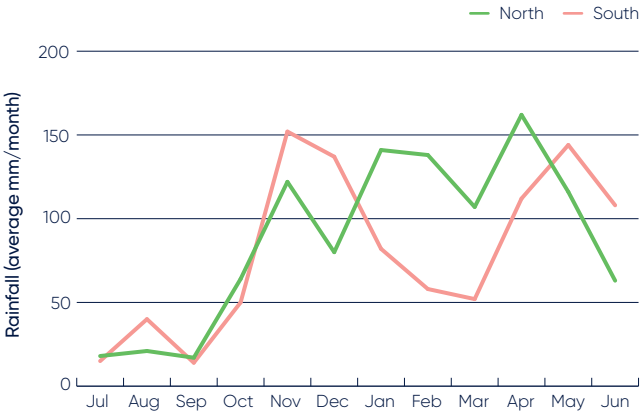
Dairying in NSW is predominantly pasture based. In the North, it is spread along the coastal and hinterland regions and in irrigated inland river valleys. Farms in the North are generally characterised as having moderate to high rainfall, limited irrigation, and a kikuyu/annual ryegrass pasture base 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 and there is a trend towards increasing intensification across farm systems driven by different motivators including the impact of a more variable climate with extremes in wet weather and hot conditions, water policy in some regions and other business owner goals.

Rainfall

Seasonal conditions were mixed across the year, influencing 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 2023/24



The year commenced with continued dry conditions across the State (Figure 1). Spring and summer rainfall events were experienced in some regions which eased conditions. More irrigation water was able to be used than in the previous wet year, also assisting in pasture/crop production. However, there were locations that had drier conditions develop in this period such as the Hunter, Far North Coast and Far South Coast. As autumn approached, the Murray and Riverina regions were experiencing much drier conditions. Conversely, while there were no significant flood events impacting farms as has occurred in recent years, many farms along the coastal strip experienced significant and prolonged wet conditions during autumn which resulted in challenging operating conditions at a crucial time of year.

The rainfall deciles map on page six illustrates the wide range of variability across the State within the year.

Feed consumption and harvest

This year saw a reversal of the declining trend in pasture removed through grazing and fodder conservation, experienced since the 2020/21 year. While there was an average increase of 1.2 tDM/ milking ha utilised, this was driven by an increase in directly grazed pasture of 1.3tDM/ milking hectare (Figure 2).

Feeding system

Moderate to high bail feeding systems were the most common feeding system in 2023/24 (Figure 3). While all feeding systems are represented within the group of farms, there is an increasing trend in NSW to farmers investigating and transitioning towards more intensive feeding systems. All the total mixed ration (TMR) farms were located in the South group. The graph illustrates the trend towards more intensive feeding systems within the NSW DFMP group of farms.

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, e.g. wet soils management.

Fertiliser application

Total nutrient application on the milking area increased on the 2022/23 year. The level of nutrient applied on some individual farms may seem comparatively high. This is generally a result of wet conditions where farmers have 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 2023/24:

- Nitrogen applied was 229kg/ha, a 22 per cent increase
- Phosphorous applied was 22kg/ha, an 8 per cent decrease
- Potassium applied was 27kg/ha, a 7 per cent decrease
- Sulphur applied was 31kg/ha, a 41 per cent increase.

Figure 2 Estimated tonnes of homegrown feed removed

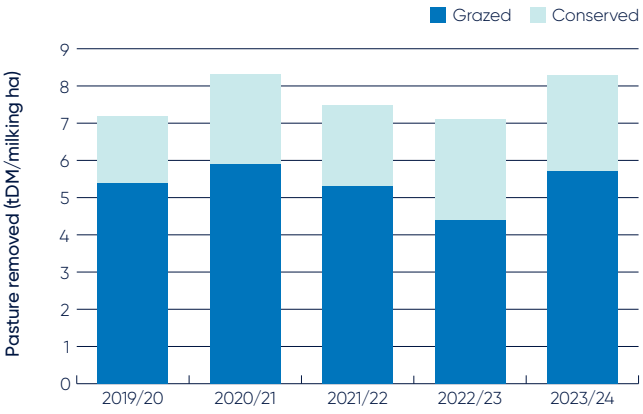


Figure 3 Type of feeding systems

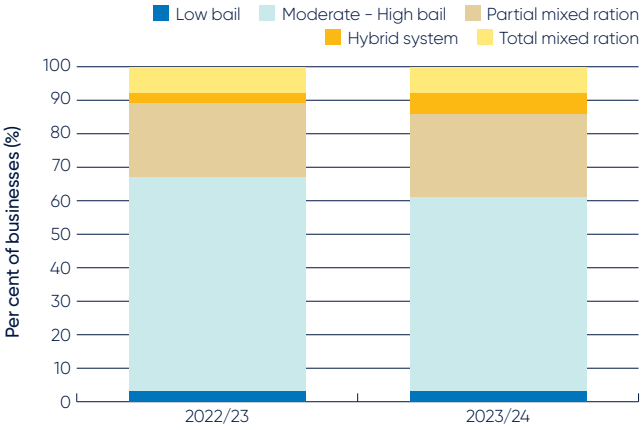


Figure 4 Nutrient application

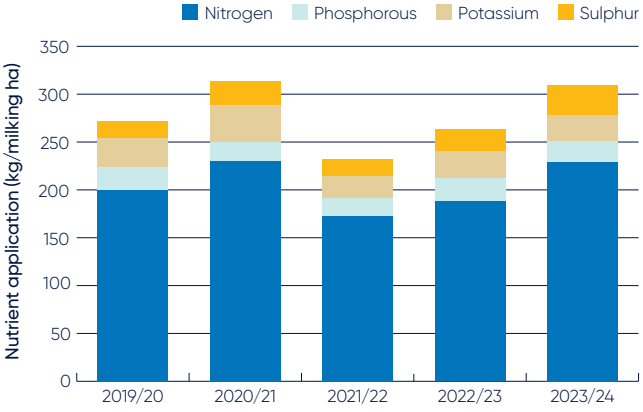


Figure 5 Monthly distribution of milk sold

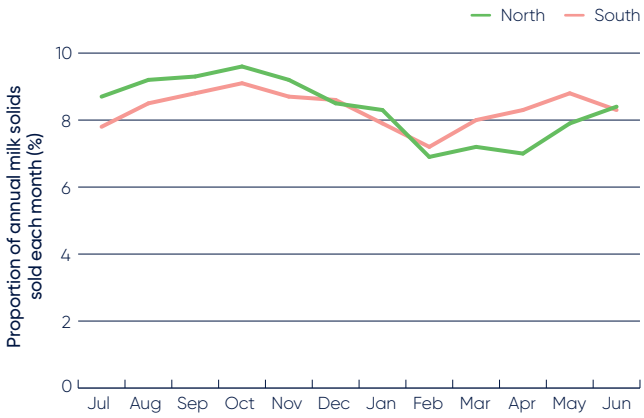
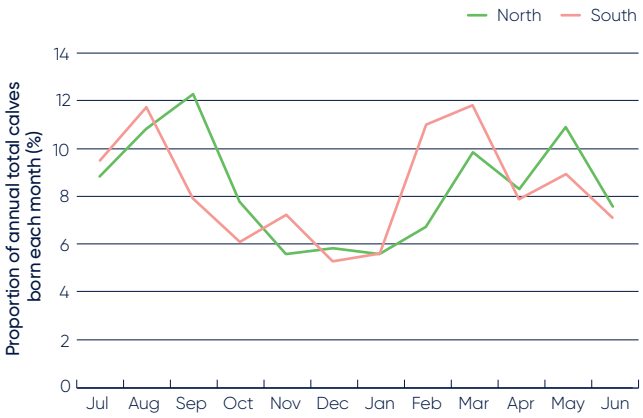


Figure 6 Monthly distribution of calving



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.

Milk production per cow increased an average of four per cent relative to the previous year, as did milk production per hectare which was a result of both an increase in per cow production and a slight increase in average stocking rate per useable hectare.

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.

Calving pattern determines milk production, reflecting that NSW has a flatter milk supply curve relative to more southern dairying regions of Australia.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Whole farm analysis

Earnings Before Interest and Tax (EBIT) was positive on 32 out of the 36 participating farms (89 per cent).

Average milk price (nominal) amongst participant farms increased by 4% and was the highest on record in 13 years of NSW DFMP, at $11.88/kgMS. Livestock trading profit and other farm income declined relative to 2022/23, resulting in a slightly lower average gross farm income.

State-wide, variable costs increased by 9 per cent primarily due to feed costs (purchased feed and agistment), with overhead costs higher by 2 per cent, however there is considerable variation between the regions in these increases.

Finance costs (interest and lease) continue to rise and put increased pressures on farm finances, driven by additional borrowings and interest rate increases.

Physical parameters

Number of milkers (hd)	2022/23	2023/24
State	415	436
North	298	308
South	520	563

WUE (t DM/100mm/ha)	2022/23	2023/24
State	0.5	06
North	0.5	0.5
South	0.5	0.7

Usable area (ha)	2022/23	2023/24
State	382	382
North	291	284
South	461	479

Milking cows per usable ha	2022/23	2023/24
State	1.3	1.3
North	1.3	1.3
South	1.3	1.4

Milk solids sold (kgMS/cow)	2022/23	2023/24
State	511	529
North	456	475
South	561	583

Milk solids sold (kgMS/usable ha)	2022/23	2023/24
State	661	710
North	609	636
South	708	784

Homegrown feed as % of ME consumed	2022/23	2023/24
State	52	51
North	53	54
South	51	49

Labour efficiency (cows/FTE)	2022/23	2023/24
State	72	74
North	67	68
South	77	81

Labour efficiency (kgMS/FTE)	2022/23	2023/24
State	37,430	39,247
North	30,283	31,334
South	43,825	47,160

Financial parameters

Income $/kgMS	2022/23	2023/24
Milk income (net)		
State	11.43	11.88
North	11.97	12.37
South	10.94	11.39
Livestock trading profit and other income		
State	1.24	0.72
North	1.35	0.72
South	1.13	0.71
Gross farm income		
State	12.66	12.60
North	13.32	13.09
South	12.08	12.10

Costs $/kgMS	2022/23	2023/24
Variable Costs		
State	5.85	6.38
North	6.21	6.90
South	5.52	5.86
Overhead costs		
State	4.04	4.10
North	4.58	4.58
South	3.54	3.62
Earnings before interest and tax		
State	2.78	2.12
North	2.52	1.61
South	3.01	2.63

Earnings before interest and tax

In 2023/24 average farm profitability (measured by earnings before interest and tax, EBIT) declined 24 per cent despite the continuation of strong milk prices (Figure 7). A significant drop in livestock trading profit due to lower prices and some on farm reductions in herd value as a result of lower herd numbers, contributed to a slightly lower average gross farm income. A nine per cent increase in variable costs was largely driven by an increase in feed and agistment costs on a $/kgMS basis, reflective of both increased costs of feed per tonne of dry matter and some farms requiring more purchased feed as a result of either wet or dry conditions, depending on location and time of year or a shift towards a more intensive farm feeding system. Feed inventory change offsets some of the increase in feed costs, but this was outweighed by the overall increase in homegrown and purchased feed and agistment costs. Shed costs also increased, a result of inflationary costs of dairy supplies and also electricity (however there are some farms that have been able to reduce shed power costs with solar systems).

Return on total assets

A positive return on total assets (ROTA) was recorded for 32 of the 36 participants (Figure 8). In 2023/24 average ROTA declined to 4.5 per cent mainly due to slightly lower gross farm incomes and increases to operating costs which reduced the average EBIT.

Return on equity

A wide range in return on equity (ROE) performance was observed across the regions, with 28 of the 36 participants achieving a positive ROE. Average ROE was 3.7 per cent in 2023/24 down from 11 per cent in 2022/23.

As there were four farms that had a negative EBIT for the year, the additional farms that have generated a negative return on equity have done this due to their finance costs (interest and lease costs) being more than the profit (EBIT) generated for the year.

Business structure and debt servicing 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 impact ROE.

On average, dairy businesses had a higher equity level (75 per cent) in 2023/24, compared to 72 per cent equity in 2022/23.

Figure 7 Distribution of farms by EBIT

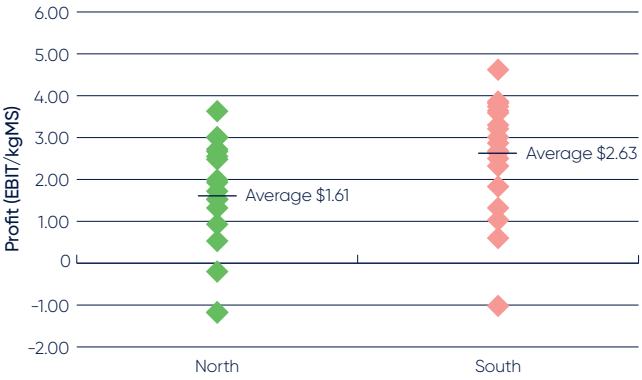


Figure 8 Distribution of farms by ROTA

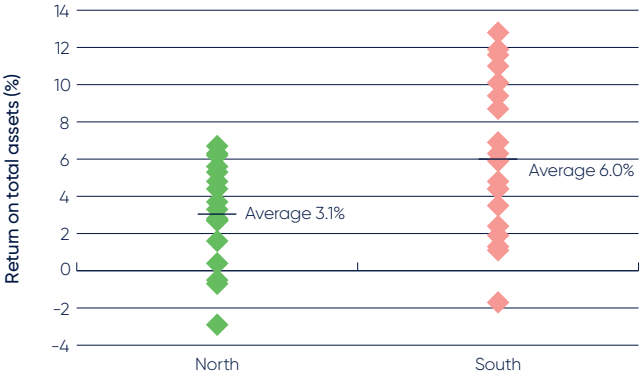
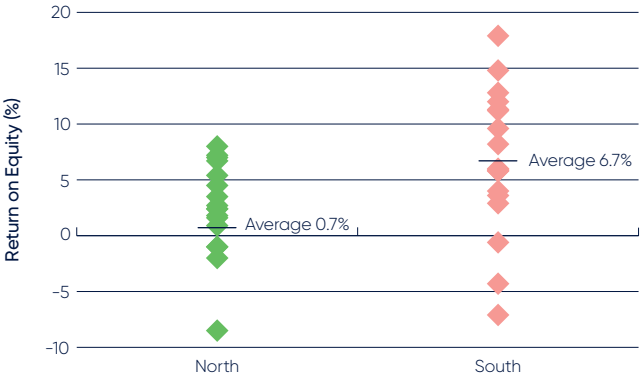
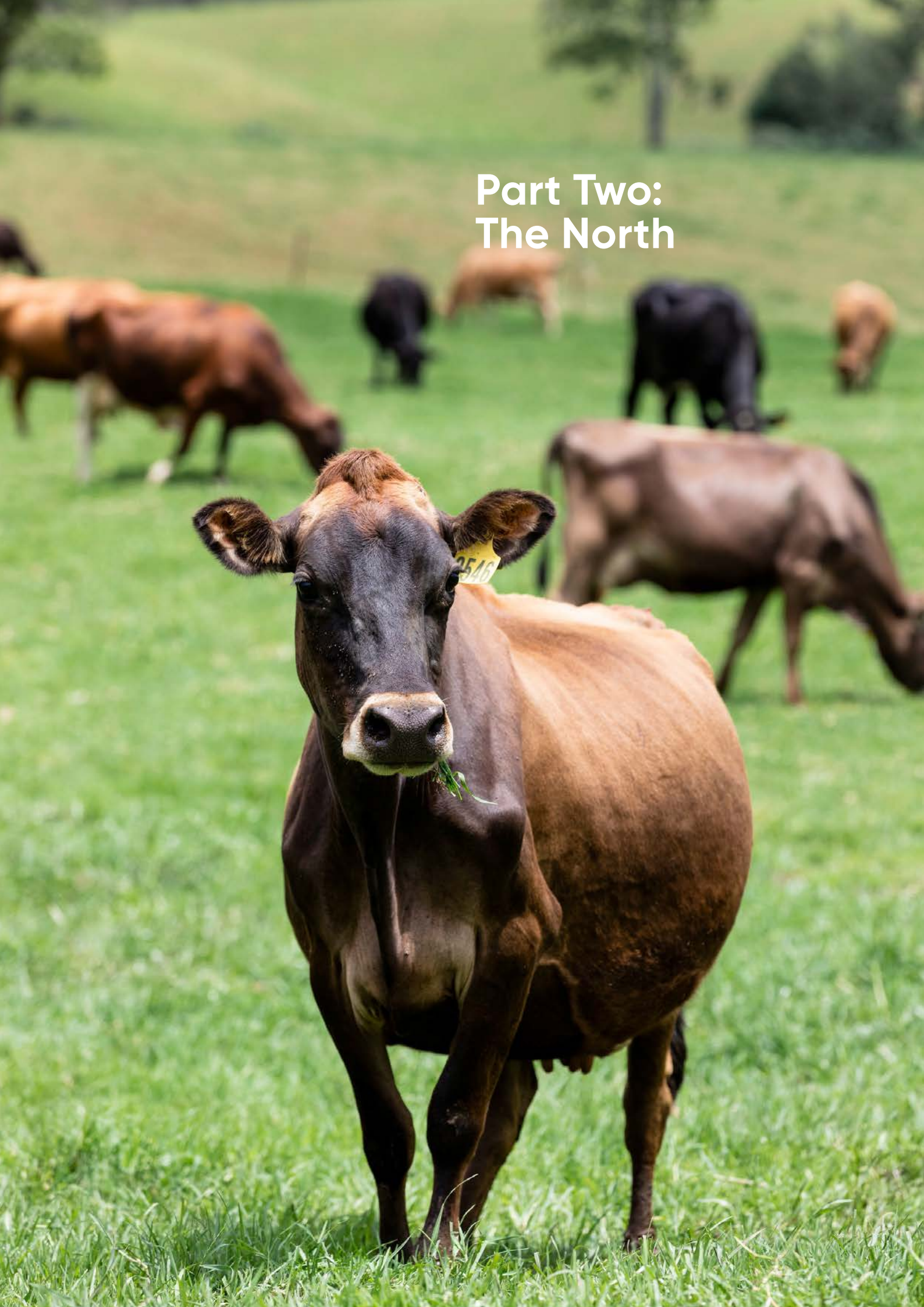


Figure 9 Distribution of farms by ROE



* *One farm operates with all leased assets and had a low ROE. Dot point is not reported on this graph due to scaling*



Part Two: The North

Performance

Dairying in the North

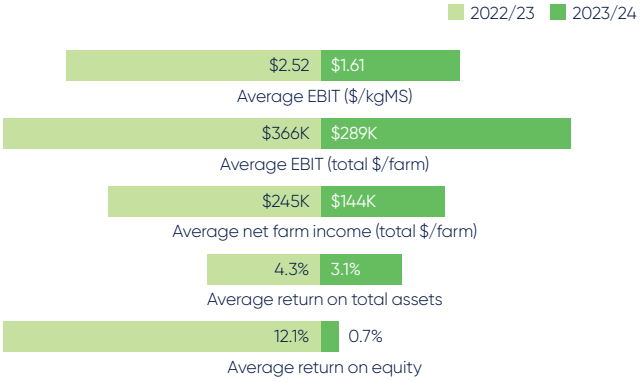
There were 18 participating farms in the North dataset, up from 17 the year before. Seasonal conditions in the 2023/24 year were varied in the North. There were widespread drier conditions early in the financial year which continued in some parts such as the Hunter and Far North Coast although conditions eased as the year progressed. Much of the coastal strip experienced a wet autumn period impacting paddock access and therefore late sowing and silage making.

Physical farm characteristics

The average herd size of the North dataset increased slightly to 308 cows and milk produced per cow increased marginally from 456kgMS/cow to 475kgMS/cow. With less extreme weather conditions, farms were able to provide more homegrown feed in the herd diet.

Average herd size	Milk solids sold	Homegrown feed
↑ 3%	↑ 4%	↑ 1%
308 cows	475kgMS/cow	54% of metabolisable energy consumed

In 2023/24, 15 of the 18 participants recorded a positive return on total assets.



In 2023/24 farm profitability has been influenced by:

↑3%
in average milk price to **$12.37/kgMS**

↑8%
in herd and shed costs to **$0.98/kgMS**

↑12%
in total feed costs to **$5.92/kgMS**

→0%
in total overhead costs stable at **$4.58/kgMS**

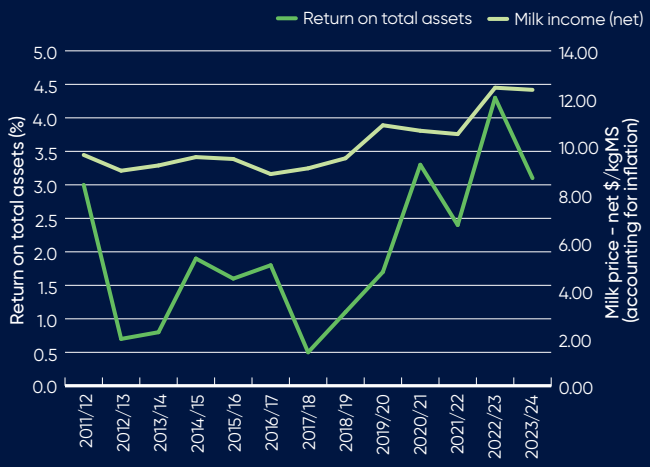
↑12%
increase in total homegrown feed utilised (tDM/milking ha) due to less severe seasonal conditions.

→0%
No change in the tonnes of dry matter average supplements* fed on the milking area (total 3.7 tDM/cow) however concentrates fed increased by 0.1tDM/cow/milking ha.

Highest total costs
(variable and overhead) in 13 years of DFMP

* *supplements fed on milking area and includes all feeds that are not directly grazed feed (purchased feeds and homegrown concentrate, silage or hay).*

Return on total assets and milk price



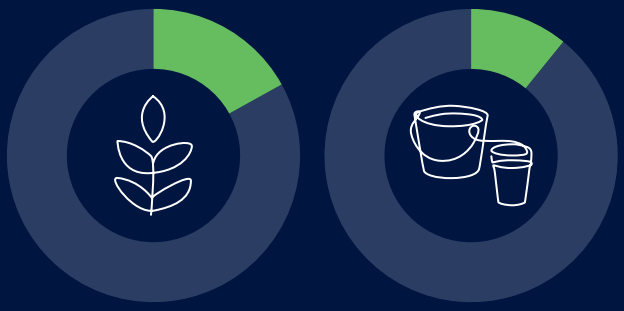
Future expectations 2024/25

Of the participant farms in the North, 78 per cent expect returns to remain stable or improve. The remaining farmers are expecting declining returns.

Concerns as reported by farm businesses

Input costs
33%

Seasonal conditions
19%



Pasture/fodder
17%

Labour & milk price
11%

Whole farm analysis

Accounting for inflation, the North received its 3rd highest profit in the 13 years of DFMP.

Despite a very strong milk income, gross farm income (nominal) declined from the previous year due to lower average livestock trading profits.

Homegrown feed production on the milking platform increased with less severe seasonal conditions and this also lowered the cost of homegrown feed on a $/kgMS basis.

Increased variable costs impacted farm profitability, particularly feed costs (purchased feed and agistment) and shed costs. On average, overhead costs remained stable however there were variations in the structure of these costs with a decline seen in repairs and maintenance costs as farms recover from the impact of the previous years of significant flood damage.

Gross farm income

Lower average gross farm income (nominal) was recorded in 2023/24 than the previous year. When accounting for inflation, it is the second highest for the North over the 13 years of the DFMP. Milk income contributed to 94 per cent of gross farm income, up from 90 per cent the previous year.

Variable costs

Variable costs increased by $0.69/kgMS, with higher total feed costs being the largest component.

Total feed costs increased by $0.62/kgMS. This was driven by higher purchased feed and agistment costs with the average cost of purchased feeds (concentrates, hay, silage and 'other' feeds) increasing on a $/tDM basis. On a $/kgMS basis the cost of purchased fodder and agistment increased 22 per cent.

On average, total fertiliser costs per farm decreased this year due to slightly less fertiliser purchased overall and slightly lower costs on a $/tonne basis. Proportionally, more of this fertiliser was applied on the milking area than the previous year, meaning there was less applied per hectare on support area. On average the cost of fertiliser decreased on a $/kgMS basis by 24 per cent to $0.59/kgMS.

By the end of the year, there was an increase in the value of feed inventory. As this feed has been purchased or conserved but not used in the production of milk for the year, it is reflected as a negative cost, coming off total feed costs and is also reflected as an asset in the balance sheet.

Herd costs saw a marginal increase of four per cent while shed costs increased by 15 per cent on a $/kgMS basis, largely due to inflationary impacts on dairy supply costs and also increases to shed power costs. Energy efficient technology (mostly solar) has been adopted on some farms to mitigate increasing grid energy costs.

Overhead costs

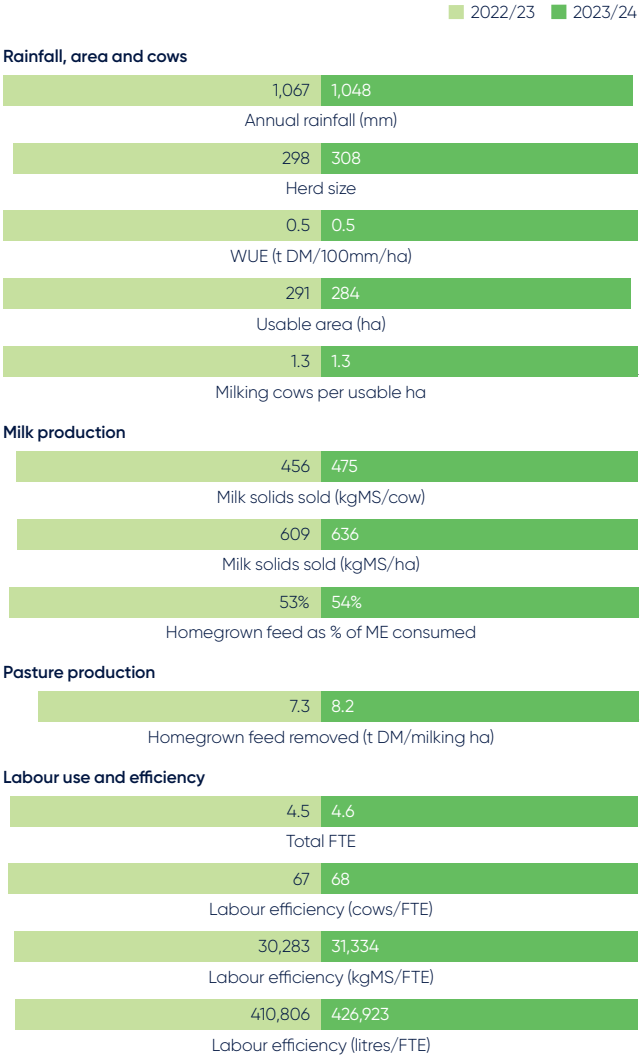
Total overhead costs remained stable in the North at $4.58/kgMS in 2023/24. There was variation within overhead costs however, with cash overheads increasing by four per cent and non-cash overheads decreasing by five per cent.

Repairs and maintenance costs decreased slightly on the previous year with businesses having generally dealt with the majority of R&M needed since the extreme flooding and wet weather events of the previous years, noting that grants have enabled many flood affected farmers to cover the cost of abnormal repairs and maintenance. Where farmers have received grants for flood damage and this has been spent on R&M, this has been netted off the cost, consistent with DFMP methodology. Paid labour and other overheads increased by 34 per cent and 11 per cent respectively on the previous year.

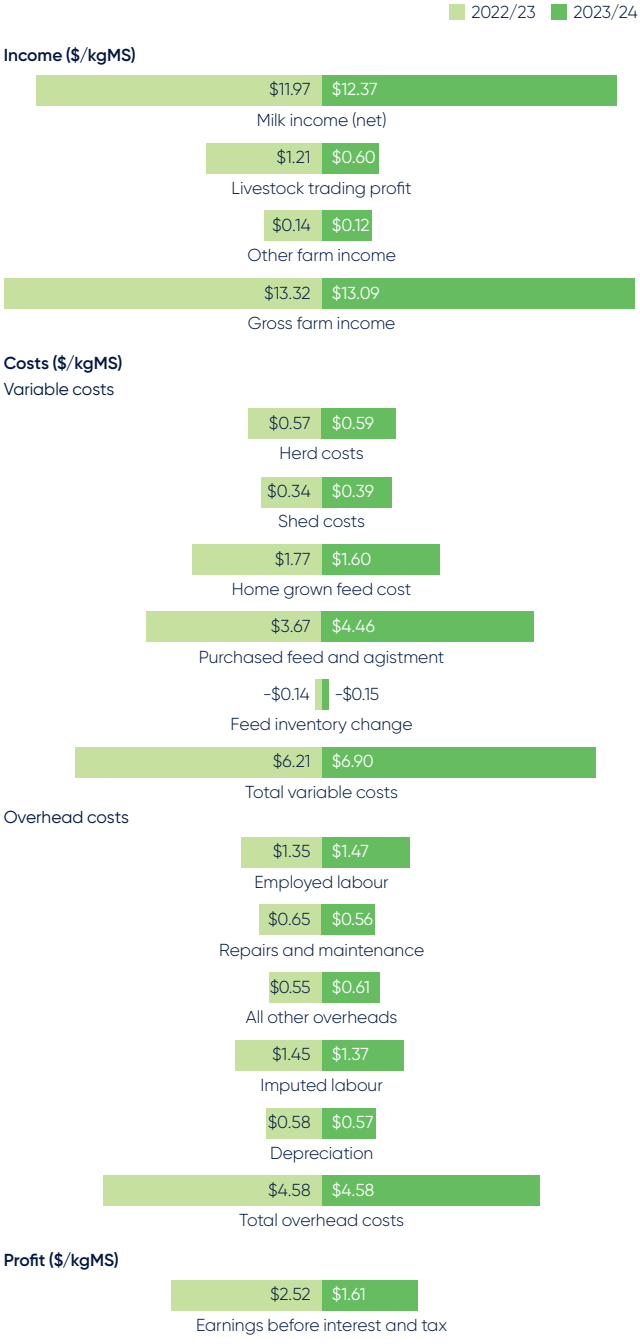
The cost of imputed labour decreased (due to comparatively less full-time labour equivalents than the previous year) on a $/kgMS basis by 18 per cent, partially offsetting the increase in paid labour.

Farm insurance increased 25 per cent to $0.20/kgMS, largely driven by increasing insurance premiums.

Physical parameters



Financial parameters



Earnings before interest and tax

In 2023/24, 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 13-years of the DFMP, accounting for inflation. Average EBIT ($/kgMS) was lower than the previous year and the third highest on record, accounting for inflation.

Return on total assets and equity

Average ROTA decreased to 3.1 per cent in 2023/24 from 4.3 per cent in 2022/23. The lower returns were largely a function of a lower total EBIT, although increasing land values across some farms has also had an impact.

Average ROE in 2023/24 declined relative to the previous year to 0.7 per cent. Five farms had a negative ROE. This was either a result of having a negative EBIT or due to finance costs (interest and lease costs) being higher than the EBIT generated.

Equity levels increased to 76 per cent compared to 73 per cent in 2022/23 with higher average asset values offsetting the marginally lower average liabilities.

With the cost of financing lower than the returns from accessing additional assets (e.g., land, dairy upgrades, and major infrastructure), eight 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 kgMS – North

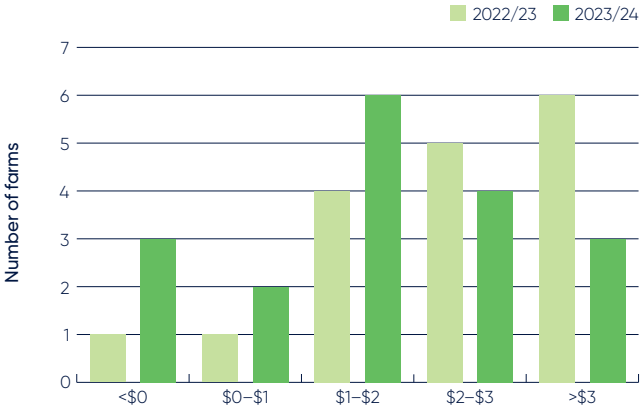
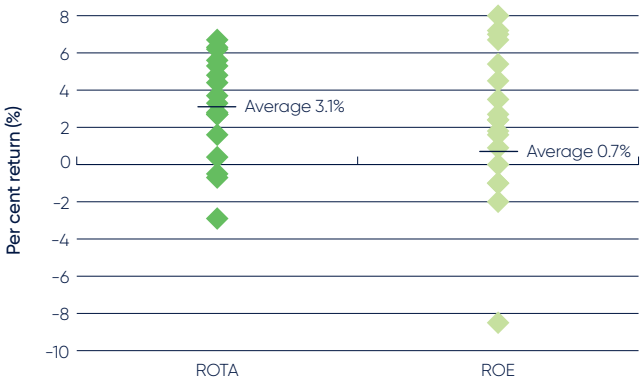


Figure 11 2023/24 average returns – North



* *One farm operates with all leased assets and had a low ROE. Dot point is not reported on this graph due to scaling*

Feed consumption and fertiliser

Feed consumption and pasture harvested

Direct grazing on the milking area (on average) increased by around 0.9 t DM/milking ha. The amount of pasture conserved remained stable at 2.0 tDM/milking ha, consequently the total tonnes of dry matter harvested on the milking area increased by 0.9 tDM/ha (Figure 12).

The North experienced a relatively dry start to the year, and then conditions varied somewhat depending on location within the North region. Some areas experienced drier conditions than others and heading into autumn, parts of the coastal region experienced prolonged wet conditions. On balance, farms experienced better conditions than the 2022/23 year, enabling better utilisation of feed on the milking area.

As a proportion of the diet, homegrown feed (grazed and conserved pasture) accounted for 54 per cent of the metabolisable energy consumed, higher than the previous year's average of 53 per cent.

Feeding system

This year 11 farms (61 per cent) in the North employed a moderate to high bail feeding system with six farms (33 per cent) operating a partial mixed ration (PM) system, and one low bail system. The slight increase in PMR farms is a result of further intensification in feeding system on one farm (Figure 13).

Fertiliser

The amount of fertiliser applied on the milking area (Figure 14) was slightly higher than the previous year primarily driven by the use of more nitrogen and sulphur, with declines in the quantity of phosphorus and potassium relative to the previous year.

Figure 12 Average homegrown feed removed – North

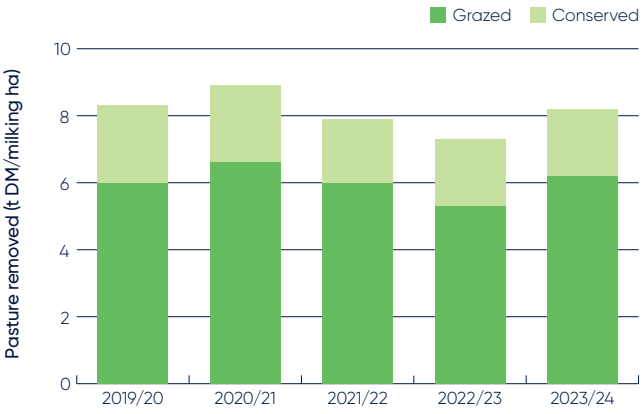


Figure 13 Feeding system types – North

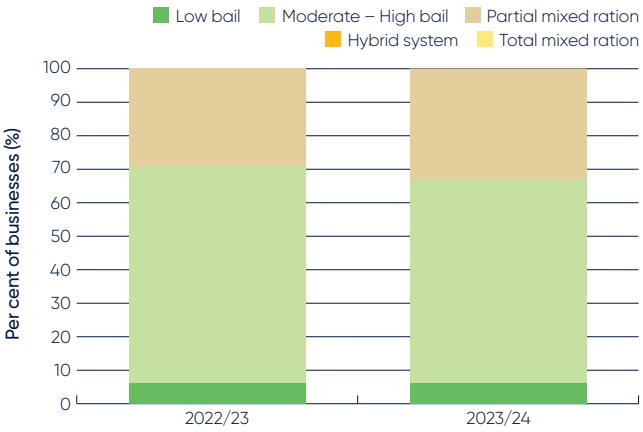
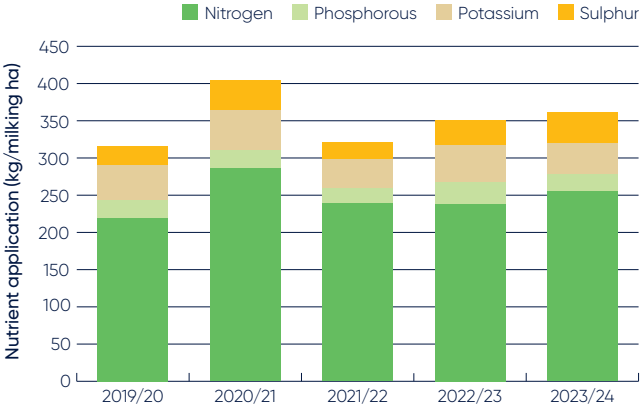


Figure 14 Average nutrient application – North



Part Three: The South

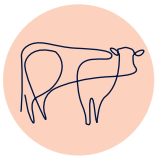
Performance

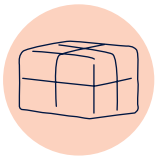
Dairying in the South

There were 18 participating farms in the South dataset, with one farm opting out from the year before. The year commenced with generally drier conditions which eased coming into spring. The timing of this varied between the coastal and inland farms. As the year progressed many of the coastal farms experienced a prolonged wet autumn period restricting paddock access and impacting timeliness of sowing (in some instances resowing) and fodder conservation. The inland farms had a later than usual autumn break.

Physical farm characteristics

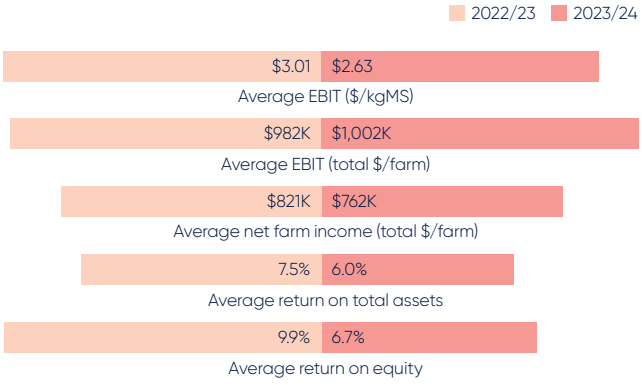
The average herd size in the dataset increased to 563 cows and milk produced per cow increased slightly going from 561 to 583kgMS/cow. On average homegrown feed contributed slightly less to the milker diet on an energetics bases (MJME/kgDM).





Average herd size	Milk solids sold	Homegrown feed
↑ 8%	↑ 4%	↓ 2%
563 cows	583kgMS/cow	49% of metabolisable energy consumed

In 2023/24, 94 per cent (17 out of 18) recorded a positive return on total assets.



In 2023/24 farm profitability has been influenced by:

↑4%
in average milk price to **$11.39/kgMS**

→0%
Herd and shed costs remained stable at **$0.72/kgMS**

↑7%
in total feed costs to **$5.14/kgMS**

↑2%
in overhead costs to **$3.62/kgMS**

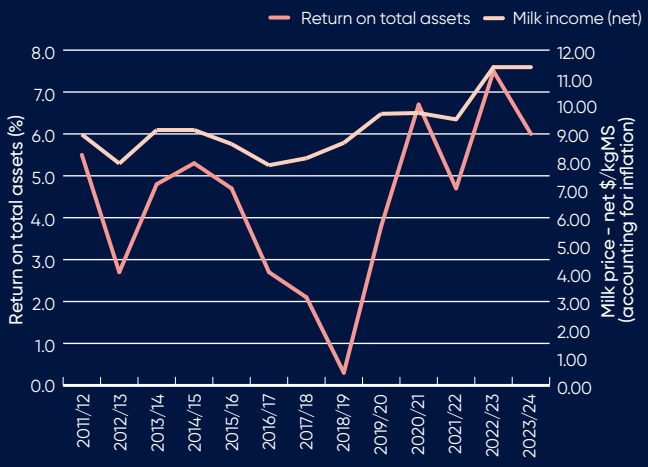
↑19%
increase in total homegrown feed (tDM/milking ha) due to less severe seasonal conditions than the previous year.

→0%
No increase in average supplements* fed (total 5.7 tDM/cow) however a slight increase in the proportion of concentrates fed by 0.1tDM/cow.

Highest total costs
(variable and overhead) in 13 years of DFMP

** Supplements fed on milking area and includes all feeds that are not directly grazed feed (purchased feeds and homegrown concentrate, silage or hay).*

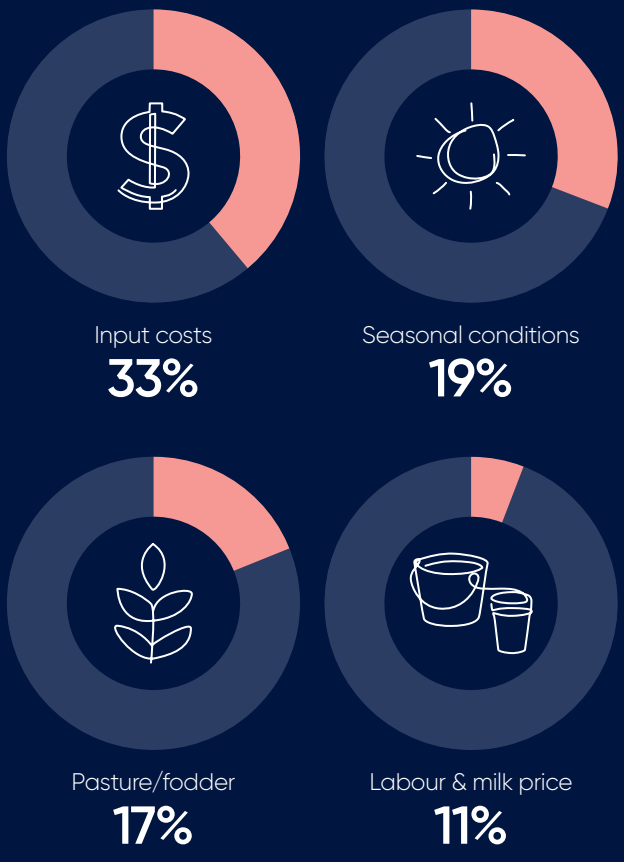
Return on total assets and milk price



Future expectations 2024/25

72 per cent of farmers expect business returns to improve or remain stable with 28 per cent expecting a decline in returns.

Concerns as reported by farm businesses:

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Whole farm analysis

Gross farm income increased very marginally in the South due to a higher milk price and slightly higher other farm income. These higher prices were able to offset the decline in livestock trading profit relative to the 2022/23 year.

Homegrown and purchased feed and agistment costs increased in the 2023/24 year on a $/kgMS basis with the increase in total feed costs for the year impacting on profitability.

Highest total costs (variable and overhead) in 13 years in 2023/24 impacted farm profitability for the year with EBIT declining by 13 per cent.

Gross farm income

A marginally higher gross farm income was recorded in 2023/24 than the previous year which was the second highest on record in the 13-year history of DFMP ($/kgMS), accounting for inflation. This was primarily due to increased milk income and slightly higher other farm income (feed, water and other income derived from the assets owned by the business). A 44 per cent decrease in livestock trading profit constrained further increases in gross farm income.

Variable costs

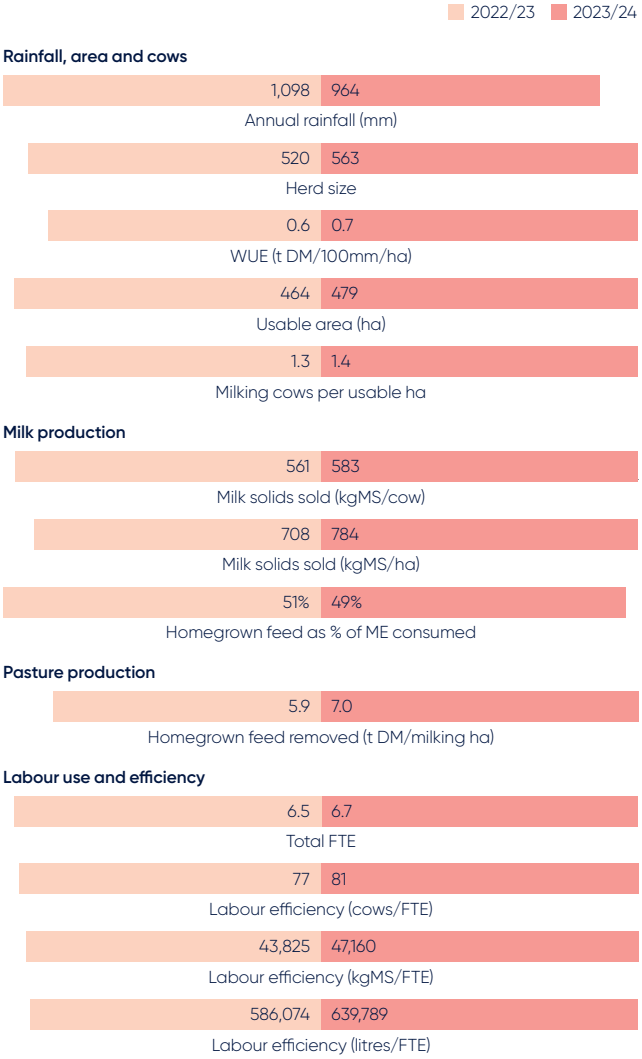
Higher homegrown feed and purchased feed and agistment costs were the main reason for the increased variable costs in 2023/24 (a $0.34/kgMS increase from 2022/23). On average, there was only slightly more purchased feed fed per cow (concentrates, hay, silage and 'other feed'), however the average per unit price of the purchased feeds (particularly concentrates) increased the average cost per kgMS.

The amount of fertiliser applied increased relative to the 2022/23 year, most noticeable with higher nitrogen applications. Other factors increasing the cost of homegrown feed this year included general increases in the cost of irrigation, hay & silage making and pasture and cropping costs.

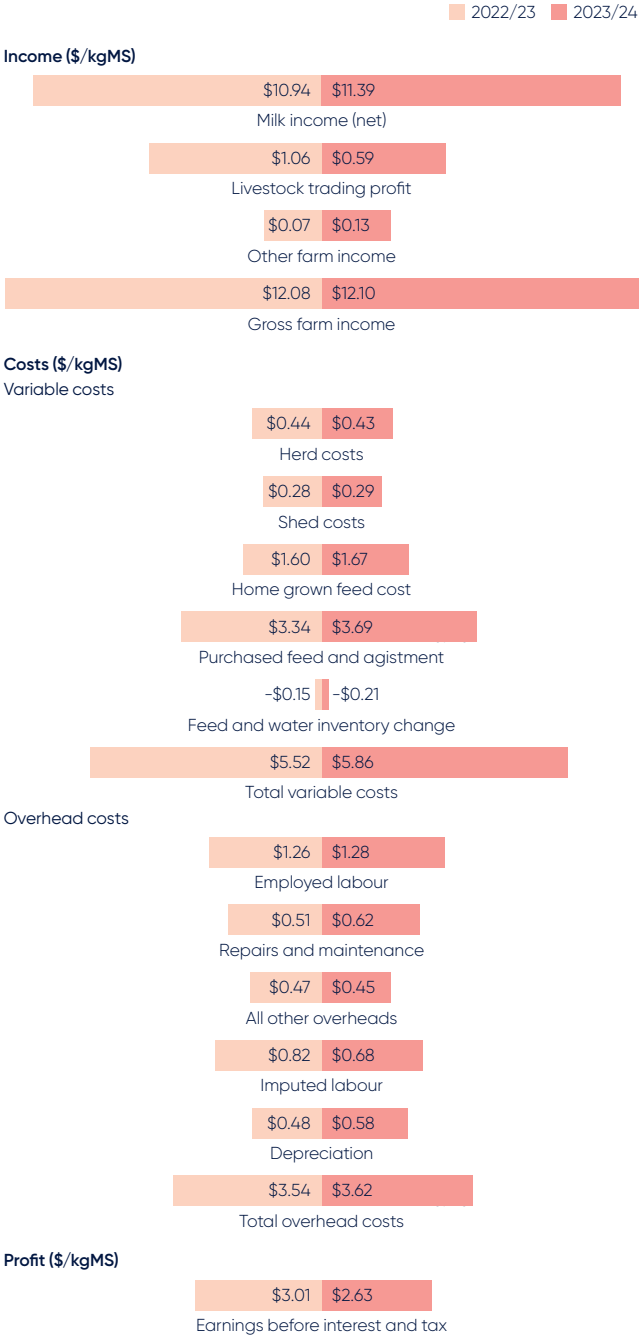
Fodder conservation and use was mixed in the South in 2023/24. Six of the eighteen farms used their fodder reserves over the course of the year, while 12 farms were able to build reserves over the same period.

Herd and shed costs were comparatively stable relative to the 2022/23 year. Energy efficient technology (mostly solar) has been adopted on some farms to mitigate increasing grid energy costs.

Physical parameters



Financial parameters



Overhead costs

Total labour costs declined slightly (6 per cent) due to lower imputed labour costs (on a $/kgMS basis) and an eight per cent increase in labour efficiency (kgMS/FTE).

Repairs and maintenance costs increased by 22 per cent and depreciation cost increased by 21 per cent. These increases are in part due to plant and equipment purchases and on farm developments as more of these businesses intensify their feeding systems. Where farmers received grants for flood damage and this has been spent on R&M, this has been netted off the cost, consistent with DFMP methodology.

Earnings before interest and tax

In 2023/24, average EBIT (per farm) was the third highest in the 13 years of NSW DFMP (accounting for inflation), with 17 of the 18 businesses generating a profit.

The relatively strong farm performance for the South is illustrated in Figure 15. Thirteen of the 18 farms were highly profitable, with an EBIT greater than $2.00/kgMS.

Return on total assets and equity

The slightly lower EBIT performance and higher total asset value (owned and leased), contributed to a lower ROTA in 2023/24.

This year saw a marginal increase in equity percentage to 73 per cent from 72 per cent in 2022/23. There was an increase in the total dollar value of farm equity, due to an increase in the value of current and non-current assets (owned and leased), primarily driven by increases in usable land (owned and leased), plant and equipment and significant buildings. Liabilities increased also, but at a lower rate than the growth in assets managed.

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 kgMS – South

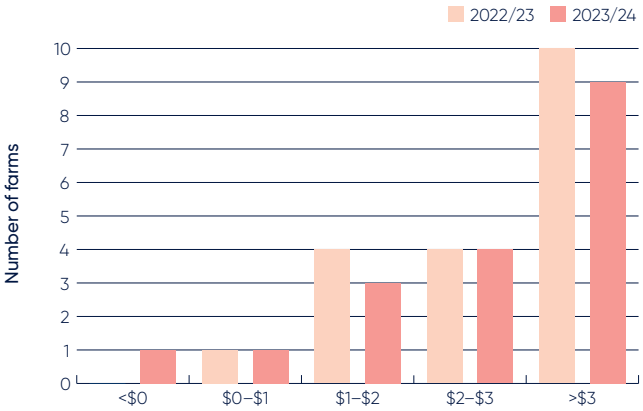
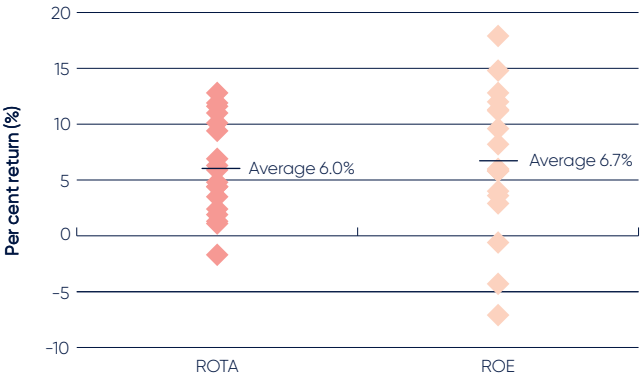


Figure 16 Average returns – South



Feed consumption and fertiliser

Feed consumption and pasture harvested

Farms in the South show a wide range of feeding systems. In 2023/24, directly grazed pasture was not the main source of metabolizable energy on all farms in this region with twenty-one per cent of farms operating a more intensive feeding system, being hybrid or total mixed ration (TMR) systems. Only eight farms had 50 per cent or more of their energy sourced from directly grazed pasture.

Direct grazing on the milking area, on average increased by 0.7 tDM/ha and the amount of pasture conserved increased by 0.4 tDM/milking ha. Consequently, the total tonnes of dry matter harvested from the milking area increased by 1.1 tDM//ha (Figure 17).

As a proportion of the diet, homegrown feed (grazed and conserved pasture) accounted for 49 per cent of the metabolisable energy consumed, compared to 51 per cent 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. In general, it was a relatively dry start to the financial year. As the year progressed, while there were no significant flooding events as in previous years, many farms along the coastal strip experienced significant and prolonged wet conditions during autumn which resulted in challenging operating conditions at a crucial time of the year. Southern inland areas had a later than usual autumn break that assisted autumn programs in parts.

Feeding system

While the dominant feeding system is still moderate to high bail (10 farms) of surveyed farms, there is an observable trend towards more intensive feeding systems in the south. The other eight farms are a mix of PMR (17 per cent), hybrid (11 per cent) and TMR (17 per cent) feeding systems (Figure 18). The majority of these more intensive feeding systems are in the inland regions of the South where intensification is seen as an option to reduce both climatic volatility as well as water pricing challenges.

Fertiliser

The amount of fertiliser applied per milking hectare (Figure 19) increased by 35 per cent on the 2022/23 year, increasing to the highest levels seen in the last five years. This was driven by a 39 per cent increase in nitrogen use and 58 per cent increase in sulphur. Figure 19 only shows usage on the milking area. It is worth noting that usage on the support area also increased relative to the 2022/23 year.

Figure 17 Average homegrown feed removed – South

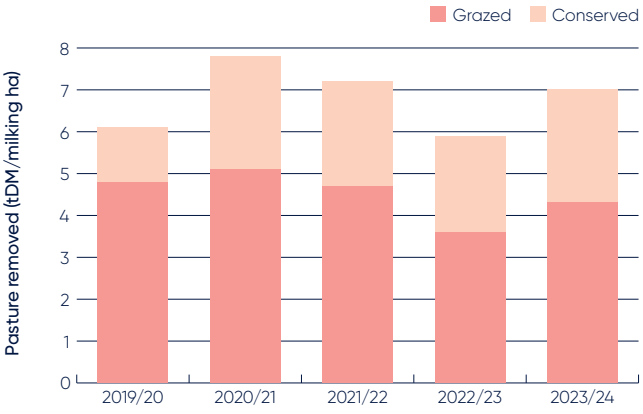


Figure 18 Feeding system types – South

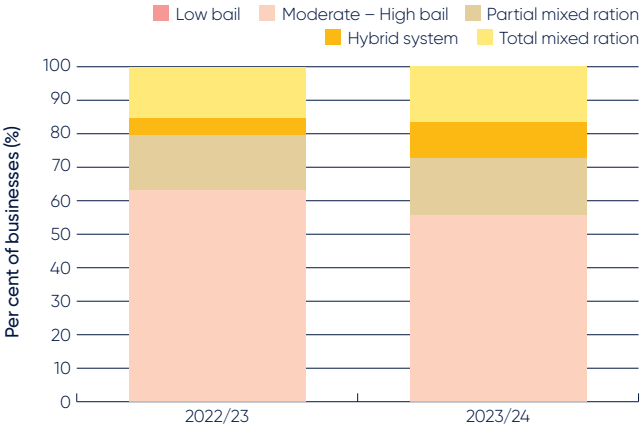
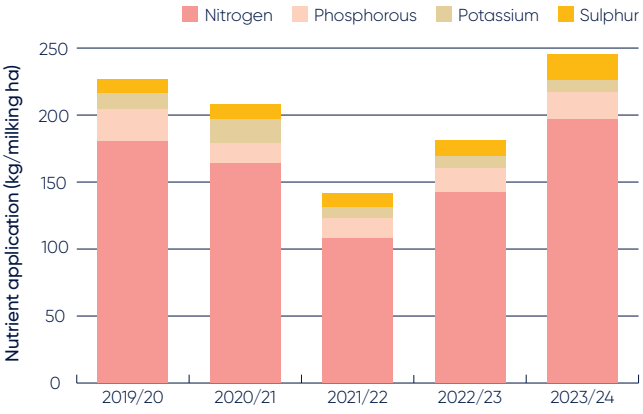


Figure 19 Average nutrient application – South



Part Four: Business confidence

Participant farmers were generally confident in their outlook for farm business returns in the coming 12 months (2024/25).

There were no businesses expecting increases in milk price. The majority of farmers in both regions expect price to remain stable and more South businesses expect a decrease in milk price.

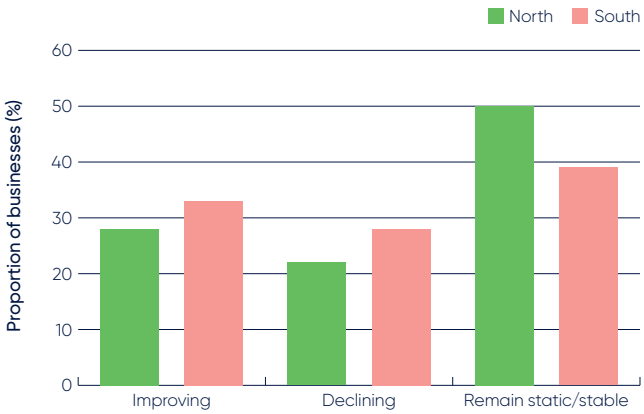
Similar to the previous year, the majority of farmers expect to increase milk production or for production levels to remain stable, with only one farm in the North group expecting to decrease production.

In 2024/25 costs were predominantly expected to remain stable across all categories except labour, which was anticipated to be more likely to increase.

Expectations for business profit 2024/25

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 20). There is a notable shift in expectations for business performance this year compared to the previous year, with returns expected to remain stable, rather than improve. Farms in the North were less optimistic about improving profits than those in the South but 50 per cent of North businesses are expecting stability, likely to be reflective of businesses on multi-year contracts with price certainty for the year. Declining profitability is expected by 22 per cent of North businesses and 28 per cent of South businesses.

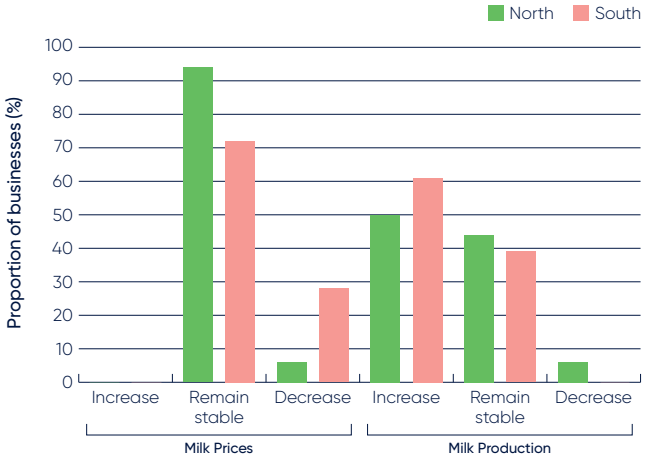
Figure 20 Expected change to farm business profit in 2024/25



Price and production expectations – milk

Participants were relatively confident in their outlook for milk price for the year, however no businesses are anticipating increases 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 (August 2024). There is only one business in the North group anticipating a decline in milk production for 2024/25, with the majority anticipating an increase in production or holding current production levels (Figure 21). The increase in milk production is possibly as a result of an improvement in seasonal conditions as well as continued strong milk prices and incentives from milk companies for farmers to increase production.

Figure 21 Producer expectations of milk prices and production in 2024/25

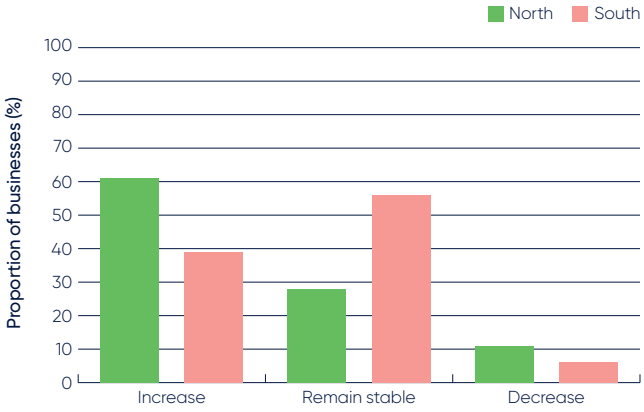


Production expectations – fodder

The expectations for increased fodder production in 2024/25 were more positive in the North group, with farmers in the South group more likely to see stable fodder production. The season experienced at the time of the survey, the medium to long term forecasts for the year ahead and farm location will have influenced these expectations. A small percentage of farms in the North and South were expecting a decline in fodder production for the year for reasons that are unclear given farm location (Figure 22).

Despite farmer intentions, the ability for farmers to reach their goals of increasing fodder production is highly seasonal dependent.

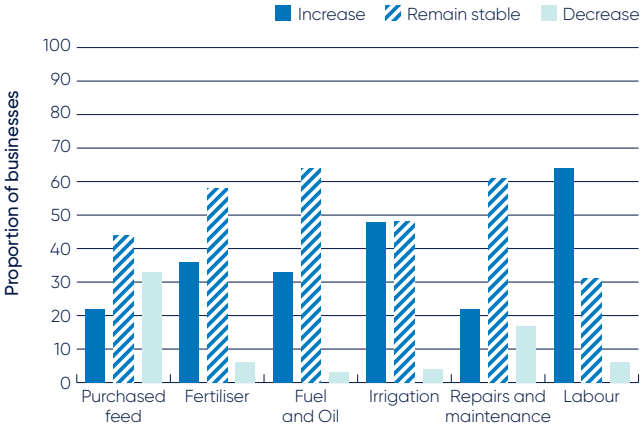
Figure 22 Producer expectations of fodder production in 2024/25



Cost expectations

The cost category that was expected to be the most likely to increase in 2024/25 was labour (Figure 23). Generally, farmers are expecting costs related to purchased feed, fertiliser, fuel and oil and repairs and maintenance to settle and remain stable. Purchased feed costs are anticipated to decline more than any other category, potentially with the anticipation of less extreme seasonal conditions for the year. Most irrigated farms expect to see irrigation costs increase or remain stable in 2024/25, reflective of seasonal conditions at the time of the survey in various locations but also coming out of a number of years that have seen less irrigation on participating farms.

Figure 23 Producer expectations of costs for the dairy industry in 2024/25



Comments from participants

Several respondents were confident in their milk price due to their multi-year contracts with their processor, giving them certainty in the short term.

Numerous businesses indicated positivity and optimism for the future as they are investing on farm either in the form of capital improvements such as to dairy plant/sheds, irrigation infrastructure, yards or larger developments or intend to expand herd numbers and production. Others mentioned potential land acquisitions in the future or consideration of contained housing facilities. Others mentioned a desire to improve efficiencies on farm.

Labour continues to be mentioned as a concern with respect to skill level/suitability, cost and availability. However, there were some positive experiences with new employees/staff being highlighted in the comments.

Some farms are still recovering from the impact of the previous year's floods and focussing on returning the farm and production levels to those prior to the flood.

Debt consolidation was a focus for businesses that have been undertaking improvements and capital works, with some mentioning this in conjunction to comments around exiting the industry via retirement or succession plans.

The loss of farms impacting the ability to attract service providers was raised again this year.

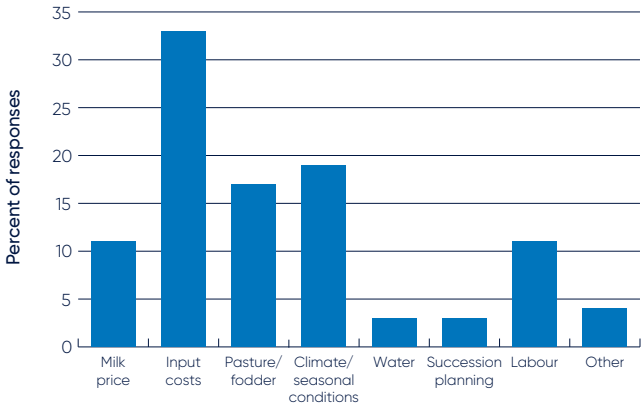
Issues of importance to dairy businesses

Participants are asked to rank issues based on the level of importance to their business – with a ranking of (1) being most important and (8) being least important. The results are shown in Figure 24 for the short-term issues and Figure 25 for medium term issues.

Short term issues – Next 12 months

Input costs were ranked as the most important issue (33 per cent of respondents), reflective of the increases experienced in recent years to items such as dairy consumables and fodder production costs, purchased feeds, electricity, fuel and oil and labour. With a return to generally milder climatic conditions across the state, climate/seasonal conditions were this year considered to be the second most important issue (19 per cent), having been the main issue for the previous couple of years. Pasture/fodder was more of a concern this year (17 per cent) than the previous year. Milk price and labour were ranked equally as an issue (11 per cent) for respondents; however, milk price has increased slightly as an issue and labour decreased slightly form the 2023/24 survey.

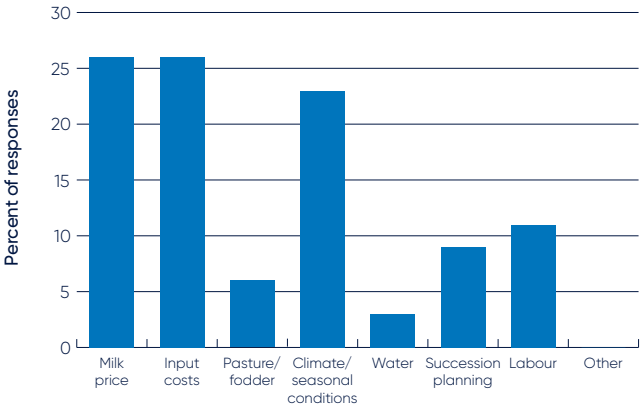
Figure 24 Major issues for individual businesses – 12-month outlook



Medium to long term issues – Next five years

The ranking order for concerns over the medium term (five years) has changed since last year. Milk price and input costs are now equally weighted as an issue (26 per cent) while climate/seasonal conditions have dropped to the third highest concern.

Figure 25 Major issues for individual businesses – 5-year outlook



Part Five: 2023/24 Greenhouse gas emissions

The average farm carbon footprint for New South Wales DFMP participants was 3,846 tonnes of carbon dioxide equivalents (t CO2-e) in 2023/24.

Emissions intensity was 0.93 t CO2-e/t FPCM, an increase from the previous year but remains relatively stable.

Total emissions

In 2023/24, the average farm carbon footprint (net GHG emissions) for NSW DFMP participants was estimated to be 3,846 t CO_2-e/farm. The increase in net farm emissions this year was likely due to an increase across all emissions sources associated with higher average MS production (Figure 26). An increase in total fertiliser use compared to 2022/23, contributed to higher nitrous oxide emissions (other nitrous oxide sources being gas produced from wastes – dung/urine and effluent ponds), and there was also an increase in enteric methane related to livestock and higher average milking cow numbers this year. Pre-farm emissions increased (fertiliser manufacture, production of purchased fodder, grain and concentrates) and carbon dioxide emissions from fossil fuel consumption on farm (electricity, petrochemicals and/or fuel from contractors) also increased.

It must be noted that carbon capture and storage from trees was accounted for in the average net emissions. The high average tree carbon sequestration figure (Table 1) can be largely attributed to one farm in the sample attaining high sequestration rates from a large plantation area. A change in participating farms has also had a slight impact on net emissions and emissions intensity with a farm that opted out in the 2023/24 year having had a higher level of sequestration than the new farm that joined the project this year.

Enteric methane as a proportion of total emissions remained the same accounting for approximately 67 per cent of emissions and is sensitive to changes in livestock weights and numbers on individual farms.

Figure 26 Estimated average net farm GHG emissions and milk solid production between 2019/20 and 2023/24 (CO_2 equivalent)

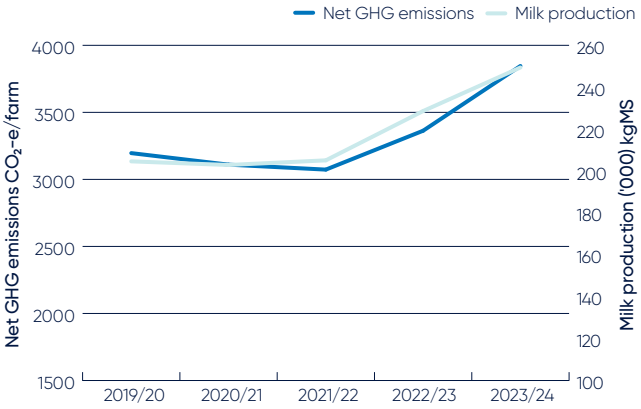


Table 1 Estimated average GHG emissions and intensity between 2019/20 and 2023/24 (CO_2 equivalent)

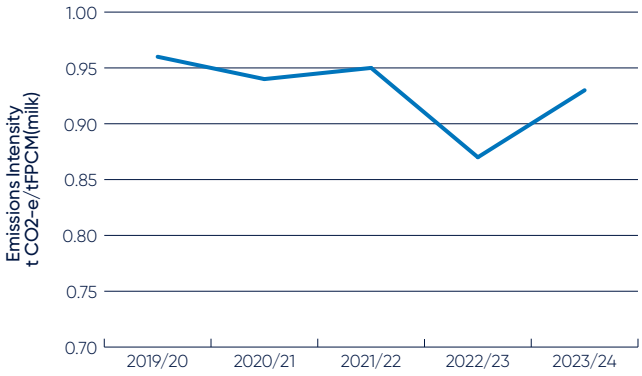
Emission source	Units	2019/20	2020/21	2021/22	2022/23*	2023/24
Sample size		**35**	**41**	**36**	**36**	**36**
Methane	t CO_2-e/farm	2,095	2,057	2,121	2,405	2,772
Pre-farm	t CO_2-e/farm	411	366	340	409	456
Nitrous oxide	t CO_2-e/farm	383	390	372	452	488
Carbon dioxide	t CO_2-e/farm	307	297	255	310	350
Tree carbon	t CO_2-e/farm	N/A	N/A	-15	-213	-220
Net GHG emissions	t CO_2-e/farm	3,196	3,110	3,073	3,363	3,846
Emissions intensity	t CO_2-e/FPCM (milk)	0.96	0.94	0.95	0.87	0.93
Emissions intensity	t CO_2-e/t MS (milk)	13.6	13.3	13.4	12.3	13.1
Emissions intensity	t CO_2-e/kg lwt (meat)	4.6	4.6	4.9	5.3	5.1

* From 2022/23 greater detail was collected about manure management at the dairy and feeding areas, fuel usage by contractors and trees, meaning historical data may not be comparable.

Emissions intensity

The emissions intensity allocated to milk production (once meat production is considered), increased on the previous year (0.93 t CO_2-e/t FPCM) and has fluctuated slightly over the years but has decreased since 2019/20 (Figure 27). Emissions intensity is calculated by dividing total emissions by the amount of fat and protein corrected milk (FPCM); standard of 4.0 per cent fat and 3.3 per cent protein.

Figure 27 Estimated average emissions intensity between 2019/20 and 2023/24 (CO_2 equivalent)



The data

This year, several changes to the national inventory have been accounted for in the greenhouse analysis. In addition, a more accurate allocation of purchased feed emissions to milk versus meat has been made based on where the supplement is fed (i.e. milking area vs support area). It is important to note that the calculations with this year's data also re-estimates the historical data with the updated methodology.

Since 2020/21 there was a change in data capture including carbon sequestration in trees and in 2022/23 user defined inputs for manure management were captured rather than utilising state defaults, accounting for some of the variation in total farm emissions. An enhanced effort on improving the data collection process for estimating GHG emissions is likely to have also contributed to the higher emissions.

Note

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

Part Six: How does 2023/24 compare?

Despite the continuation of historically strong milk prices in 2023/24, higher costs constrained profitability across the state resulting in the third highest average profit for both North and South businesses in the project.

The relatively strong profit results for the NSW DFMP farms (average $645,097 per farm), were well above the 13-year long term average of $331,684 (adjusted for inflation).

The lower EBIT (relative to the 2022/23 year) resulted in a lower return on total assets in both regions, averaging 4.5% across all 36 farms.

The North

Farm profit (EBIT) in the North in 2023/24 was the third highest seen (accounting for inflation) since the start of the DFMP in 2011/12 (Figure 28). Average EBIT was $288,527 in 2023/24, compared to the long-term average of $177,703. Net farm income was $144,367 in 2023/24, compared to the long-term average of $67,909. Once interest and lease costs were deducted from EBIT, five farms had a negative net farm income.

Average ROTA was 3.1 per cent in 2023/24, decreasing from 4.3 per cent the previous year (Figure 29), which is the third highest in the last 13 years. The average ROE in the North decreased to 0.7 per cent in 2023/24 from 12.1 per cent in 2022/23, with a number of farms having a negative ROE due to a negative EBIT or finance costs not being adequately covered by the EBIT generated. Business structure also impacts ROE, which is seen with businesses that have a high proportion of leased assets. The North results are impacted with a farm operating with a large proportion of assets as leased assets.

Figure 28 Farm profitability between 2011/12 and 2023/24 – the North

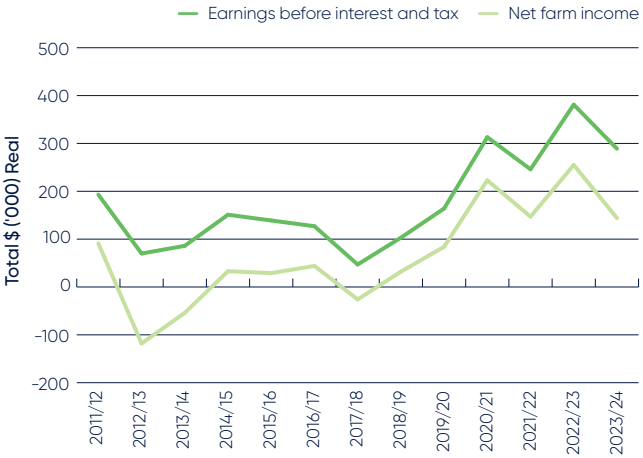
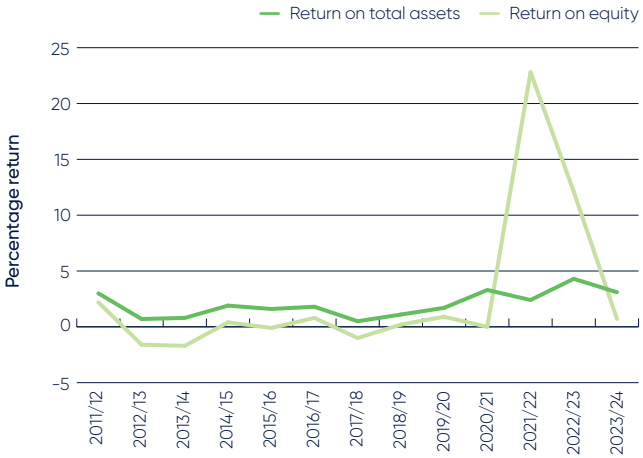


Figure 29 Whole farm performance between 2011/12 and 2023/24 – the North



The South

Farm profit (EBIT) in the South in 2023/24 was the second highest (accounting for inflation) since the start of the DFMP in 2011/12 (Figure 30). Average EBIT was $1,001,667 in 2023/24, compared to the long-term average of $493,792. Net farm income was $761,506 in 2023/24, compared to the long-term average of $339,555.

Average ROTA was 6.0 per cent in 2023/24, decreasing from 7.5 per cent the previous year (Figure 31). This still sits above the long-term average of 4.4 per cent. The average ROE in the South decreased to 6.7 per cent in 2023/24 from 9.9 per cent in 2022/23, compared to the long-term average of 5.0 per cent.

Figure 30 Farm profitability between 2011/12 and 2023/24 – the South

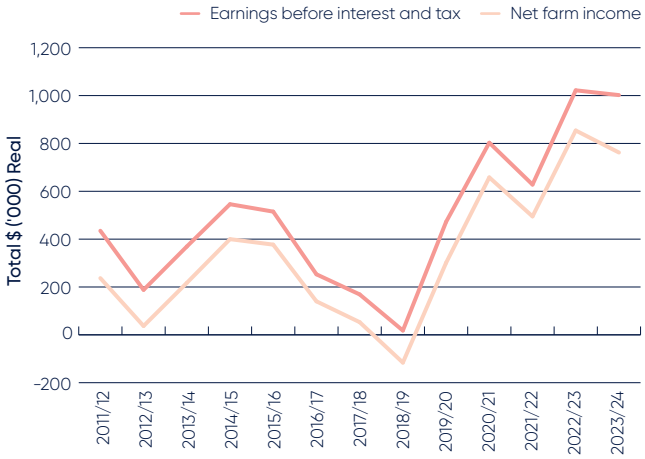
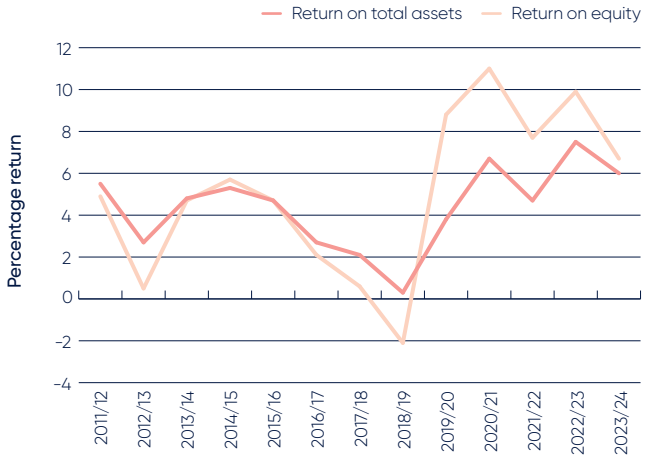


Figure 31 Whole farm performance between 2011/12 and 2023/24 – the South



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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	%	$/kgMS	%	$/kgMS	% of income	$/kgMS	%
Average	11.88	0.72	12.60	6.38	4.10	61	2.12	4.5	0.90	7	1.22	3.7
Top 25%	11.09	0.82	11.92	5.45	3.20	63	3.27	9.6	0.60	5	2.67	11.4

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	kgMS/cow	kgMS/ha	%	%
Average	382	132	0.6	436	1.3	529	710	4.0	3.3
Top 25%	698	200	0.8	780	1.2	619	742	4.1	3.5

	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	kgMS/FTE
Average	5.7	2.6	51	229	22	27	31	74	39,247
Top 25%	5.4	5.8	54	189	21	4	17	86	53,498

**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	3.8	593	375	493	517	554	49
Top 25%	3.9	541	305	449	344	516	46

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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS
Average	0.18	0.23	0.10	0.17	0.17	0.85	0.55	0.18	0.30
Top 25%	0.15	0.16	0.04	0.14	0.09	0.58	0.61	0.28	0.48

	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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS
Average	0.23	0.38	0.02	0.72	3.26	0.08	(0.18)	5.53	6.38
Top 25%	0.26	0.44	0.01	0.21	2.98	0.07	(0.46)	4.87	5.45

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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS
Average	0.07	0.17	0.07	0.59	0.23	1.38	2.50	0.57	1.03	4.10
Top 25%	0.03	0.11	0.06	0.51	0.19	1.34	2.24	0.58	0.38	3.20

Table A6 Capital structure

Farm assets				
	Land value	Land value	Permanent water value	Permanent water value
	$/ha	$/cow	$/ha	$/cow
Average	21,525	16,458	2,434	1,849
Top 25%	12,729	10,648	3,144	2,750

Other farm assets (per usable hectare)				
Plant and equipment	Livestock	Hay and grain	Other assets	Total assets
$/ha	$/ha	$/ha	$/ha	$/ha
2,672	4,229	614	666	31,397
2,909	3,849	1,009	712	24,100

Liabilities		
Liabilities per usable hectare	Liabilities per milking cow	Liabilities per kgMS
$/ha	$/cow	$/kgMS
7,611	6,223	11.63
6,660	5,915	9.16

Equity	
Equity per usable hectare	Average equity
$/ha	%
23,997	75
18,180	75

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

Table A7 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 ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)
2011/12	6.88	9.31	7.76	10.50	0.33	0.45	0.27	0.36	3.02	4.08	3.62	4.90
2012/13	6.43	8.46	7.20	9.47	0.33	0.43	0.28	0.37	3.18	4.18	3.79	4.99
2013/14	7.15	9.18	8.00	10.27	0.31	0.39	0.30	0.38	3.46	4.44	4.06	5.21
2014/15	7.46	9.36	8.44	10.59	0.32	0.40	0.29	0.37	3.55	4.46	4.16	5.22
2015/16	7.34	9.09	8.23	10.20	0.35	0.43	0.27	0.33	3.33	4.13	3.94	4.88
2016/17	6.89	8.38	7.94	9.65	0.38	0.46	0.26	0.32	3.27	3.98	3.91	4.75
2017/18	7.27	8.67	8.00	9.54	0.36	0.43	0.28	0.34	3.89	4.64	4.53	5.40
2018/19	7.74	9.12	8.68	10.23	0.31	0.37	0.31	0.36	4.49	5.29	5.11	6.02
2019/20	8.88	10.32	9.85	11.45	0.37	0.43	0.28	0.32	4.79	5.57	5.44	6.33
2020/21	8.94	10.24	10.12	11.59	0.42	0.48	0.29	0.33	3.92	4.49	4.63	5.30
2021/22	9.13	10.02	10.48	11.50	0.47	0.52	0.30	0.33	4.24	4.65	5.01	5.50
2022/23	11.43	11.90	12.66	13.18	0.50	0.52	0.31	0.32	5.03	5.24	5.85	6.09
2023/24	11.88	11.88	12.60	12.60	0.51	0.51	0.34	0.34	5.53	5.53	6.38	6.38
Average		**9.69**		**10.83**		**0.45**		**0.34**		**4.67**		**5.46**

Note: 'Real' dollar values are the nominal values converted to 2023/24 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 A7 (continued)

	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	1.56	2.11	1.24	1.68	2.80	3.79	1.34	1.81	0.59	0.79	0.75	1.01	4.3	3.6
2012/13	1.71	2.25	1.19	1.57	2.90	3.82	0.51	0.67	0.62	0.81	(0.10)	(0.13)	1.7	-0.5
2013/14	1.80	2.31	1.25	1.60	3.05	3.92	0.88	1.13	0.62	0.80	0.26	0.33	2.6	1.3
2014/15	1.71	2.15	1.25	1.57	2.96	3.71	1.32	1.66	0.60	0.75	0.72	0.90	3.5	2.8
2015/16	1.75	2.17	1.41	1.75	3.16	3.91	1.12	1.39	0.54	0.67	0.58	0.72	3.0	2.1
2016/17	1.80	2.19	1.31	1.59	3.11	3.78	0.92	1.12	0.51	0.62	0.41	0.50	2.2	1.4
2017/18	1.70	2.03	1.44	1.72	3.14	3.75	0.33	0.39	0.51	0.61	(0.18)	(0.21)	1.2	-0.3
2018/19	1.88	2.21	1.32	1.55	3.19	3.76	0.38	0.44	0.54	0.63	(0.16)	(0.19)	0.7	-0.8
2019/20	1.98	2.31	1.37	1.59	3.35	3.90	1.05	1.22	0.59	0.69	0.46	0.53	2.7	4.7
2020/21	2.05	2.35	1.37	1.57	3.43	3.93	2.07	2.37	0.57	0.65	1.50	1.72	4.9	7.0
2021/22	2.28	2.50	1.48	1.62	3.76	4.13	1.71	1.88	0.57	0.63	1.14	1.25	3.5	15.3
2022/23	2.39	2.49	1.65	1.72	4.04	4.21	2.78	2.89	0.73	0.76	2.05	2.13	6.0	11.0
2023/24	2.50	2.50	1.60	1.60	4.10	4.10	2.12	2.12	0.90	0.90	1.22	1.22	4.5	3.7
Average		**2.27**		**1.63**		**3.90**		**1.47**		**0.72**		**0.75**	**3.1**	**3.9**

Table A8 Historical data – average farm physical information

	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	
Year	ha	ha	t DM/ 100mm/ ha	hd	hd/ ha	kgMS/ cow	kgMS/ 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	59	304	411
2012/13	329	140	0.55	349	1.2	492	608	6.9	1.3	60	323	425
2013/14	301	119	0.60	309	1.1	504	569	6.0	1.1	60	412	529
2014/15	287	128	0.51	338	1.2	506	602	6.5	1.8	61	413	518
2015/16	287	126	0.55	351	1.3	504	618	6.2	2.1	61	392	486
2016/17	263	120	0.56	326	1.3	498	646	6.9	1.6	60	357	434
2017/18	251	118	0.67	337	1.4	488	683	6.0	1.6	57	423	505
2018/19	342	144	0.74	373	1.3	491	610	6.3	1.8	62	567	668
2019/20	365	143	0.57	384	1.2	512	625	5.4	1.8	52	555	645
2020/21	365	135	0.46	371	1.3	522	649	5.9	2.4	58	456	522
2021/22	381	139	0.43	375	1.3	518	644	5.3	2.4	57	454	498
2022/23	382	139	0.52	415	1.3	511	661	4.4	2.7	52	520	541
2023/24	382	132	0.57	436	1.3	529	710	5.7	2.6	51	593	593
Average	**326**	**132**	**0.56**	**364**	**1.3**	**504**	**638**	**6.0**	**1.9**	**58**		**521**

*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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	%	$/kgMS	%	$/kgMS	% of income	$/kgMS	%
NN0002	11.89	1.20	13.09	6.39	4.98	56	1.72	2.7	0.09	1	1.63	2.7
NN0005	12.64	0.39	13.03	5.43	4.59	54	3.01	6.7	-	0	3.01	6.7
NN0021	11.77	0.57	12.34	7.44	3.98	65	0.93	1.6	0.04	0	0.89	1.6
NN0023	11.68	1.14	12.82	5.60	5.23	52	1.99	2.7	0.33	3	1.66	2.4
NN0024	12.45	2.66	15.12	7.84	4.60	63	2.67	6.2	0.15	1	2.52	8.0
NN0027	13.08	0.63	13.70	7.13	4.02	64	2.55	6.3	0.52	4	2.03	7.2
NN0030	13.12	0.62	13.74	7.61	4.62	62	1.52	2.7	1.73	13	(0.21)	-1.0
NN0031	11.51	(0.46)	11.05	6.33	4.91	56	(0.20)	-0.5	0.37	3	(0.57)	-2.0
NN0032	12.68	1.63	14.31	6.44	4.25	60	3.63	5.3	1.67	12	1.96	5.4
NN0036	12.47	1.03	13.50	7.30	3.48	68	2.72	4.8	1.35	10	1.38	4.5
NN0037	13.95	0.98	14.93	6.40	5.53	54	3.00	5.6	0.98	7	2.02	7.0
NN0038	12.55	0.51	13.06	9.03	5.19	63	(1.17)	-2.9	0.92	7	(2.08)	-8.5
NN0040	12.90	0.80	13.70	6.58	4.63	59	2.48	3.7	1.14	8	1.34	3.5
NN0041	11.38	(0.24)	11.14	5.47	4.14	57	1.53	2.8	1.20	11	0.34	0.9
NN0042	12.02	0.85	12.87	7.46	4.09	65	1.32	3.3	0.65	5	0.68	2.4
NN0043	11.73	(1.09)	10.64	6.48	5.34	55	(1.18)	-0.7	2.37	22	(3.55)	-29.0
NN0044	12.69	0.91	13.60	7.92	3.75	68	1.93	4.4	1.56	11	0.37	1.8
NN0045	12.10	0.86	12.96	7.35	5.08	59	0.53	0.4	1.37	11	(0.85)	-1.0
Average	**12.37**	**0.72**	**13.09**	**6.90**	**4.58**	**60**	**1.61**	**3.1**	**0.91**	**7**	**0.70**	**0.7**

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	kgMS/cow	kgMS/ha	%	%
NN0002	109	50	0.4	111	1.02	422	428	3.6	3.1
NN0005	242	100	0.6	313	1.29	521	674	4.0	3.3
NN0021	88	60	0.7	165	1.88	508	953	4.9	3.7
NN0023	85	36	0.6	104	1.22	475	582	3.9	3.1
NN0024	271	120	0.4	281	1.04	507	526	3.8	3.1
NN0027	240	93	0.6	387	1.61	569	917	4.0	3.3
NN0030	178	60	0.4	263	1.48	485	717	3.7	3.3
NN0031	284	178	0.7	536	1.89	372	703	4.8	3.5
NN0032	1,448	450	0.3	866	0.60	494	296	3.7	3.2
NN0036	250	55	0.5	278	1.11	526	585	3.9	3.2
NN0037	280	92	0.3	331	1.18	468	553	3.7	3.1
NN0038	122	49	0.4	156	1.28	531	679	3.8	3.2
NN0040	312	102	0.4	370	1.19	480	570	4.0	3.2
NN0041	218	61	0.3	225	1.03	425	438	4.7	3.7
NN0042	125	73	1.0	318	2.54	418	1,065	4.3	3.2
NN0043	400	320	0.5	350	0.88	243	213	4.4	3.3
NN0044	130	74	0.7	305	2.35	526	1,234	3.8	3.3
NN0045	335	75	0.1	185	0.55	577	319	4.0	3.2
Average	**284**	**114**	**0.5**	**308**	**1.3**	**475**	**636**	**4.1**	**3.3**

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	kgMS/FTE
NN0002	5.8	0.9	63	267	12	92	37	60	25,439
NN0005	10.1	1.6	68	225	4	20	28	56	29,370
NN0021	1.6	6.7	51	149	63	35	62	72	36,463
NN0023	9.9	1.0	65	272	6	46	117	51	24,044
NN0024	5.4	0.2	46	177	35	21	41	78	39,506
NN0027	7.2	1.7	44	279	13	-	47	69	39,362
NN0030	4.5	0.6	39	466	14	15	4	55	26,483
NN0031	7.2	0.2	71	343	31	29	42	70	26,001
NN0032	3.1	0.7	59	144	-	14	40	65	32,264
NN0036	9.4	3.5	50	235	4	73	96	67	35,057
NN0037	6.1	0.8	45	283	20	15	5	54	25,385
NN0038	1.8	1.3	34	183	81	95	34	49	26,056
NN0040	5.3	4.7	50	376	16	61	40	79	37,824
NN0041	8.3	2.4	68	238	-	-	28	76	32,085
NN0042	7.7	4.4	55	384	15	93	35	110	46,087
NN0043	4.2	0.0	72	153	90	50	30	100	24,344
NN0044	9.0	0.0	35	205	8	16	30	59	31,152
NN0045	5.16	0.58	53	205	19	61	18	47	27,089
Average	**6.2**	**2.0**	**54**	**255**	**24**	**41**	**41**	**68**	**31,334**

**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	2.3	808	-	-	-	808	37
NN0005	2.3	619	-	634	685	622	32
NN0021	3.5	591	-	-	-	591	49
NN0023	2.8	526	-	587	-	546	35
NN0024	4.4	608	-	567	-	594	54
NN0027	4.5	647	-	516	333	607	56
NN0030	4.0	750	415	471	473	620	61
NN0031	1.9	763	-	766	563	749	29
NN0032	3.5	558	285	385	-	520	41
NN0036	4.0	640	436	651	1,621	655	50
NN0037	3.9	588	344	415	-	506	55
NN0038	5.6	681	439	589	262	571	66
NN0040	4.2	539	-	587	363	475	50
NN0041	1.9	766	-	578	472	702	32
NN0042	3.2	528	687	-	591	541	45
NN0043	2.1	520	390	511	-	506	28
NN0044	4.4	671	478	483	-	600	65
NN0045	4.6	703	568	688	754	683	47
Average	**3.5**	**639**	**449**	**562**	**612**	**605**	**46**

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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS
NN0002	0.12	0.13	0.05	0.23	0.19	0.72	0.77	0.18	0.03
NN0005	0.19	0.29	0.01	0.13	0.12	0.74	0.75	0.48	0.29
NN0021	0.17	0.29	0.05	0.25	0.22	0.99	0.56	0.52	0.63
NN0023	0.15	0.17	-	0.16	0.26	0.74	0.80	0.15	0.09
NN0024	0.24	0.42	0.02	0.18	0.15	1.01	0.59	0.08	0.20
NN0027	0.08	0.20	0.04	0.11	0.08	0.52	0.81	0.14	0.11
NN0030	0.02	0.25	0.14	0.13	0.27	0.82	0.70	-	0.29
NN0031	0.26	0.18	0.30	0.24	0.14	1.12	0.63	0.01	0.17
NN0032	0.23	0.38	0.02	0.12	0.23	0.96	0.60	0.01	0.17
NN0036	0.18	0.47	0.44	0.17	0.21	1.47	0.55	0.10	0.09
NN0037	0.25	0.44	0.08	0.21	0.11	1.08	0.49	0.02	0.05
NN0038	0.31	0.35	0.20	0.12	0.17	1.15	0.55	0.09	0.28
NN0040	0.16	0.44	0.06	0.17	0.28	1.11	0.63	0.05	0.30
NN0041	0.15	0.15	0.26	0.20	0.18	0.93	0.30	0.36	0.27
NN0042	0.09	0.21	0.02	0.36	0.50	1.18	0.76	0.15	0.40
NN0043	0.19	0.18	0.02	0.37	0.15	0.90	0.34	0.16	-
NN0044	0.34	0.14	0.12	0.10	0.22	0.92	0.34	0.64	0.20
NN0045	0.20	0.26	0.50	0.21	0.13	1.30	0.35	-	0.13
Average	**0.18**	**0.27**	**0.13**	**0.19**	**0.20**	**0.98**	**0.59**	**0.17**	**0.20**

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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS
NN0002	0.17	0.29	-	-	4.11	-	0.13	5.67	6.39
NN0005	0.16	0.37	-	0.13	3.02	-	(0.50)	4.69	5.43
NN0021	0.36	0.33	-	-	3.97	-	0.06	6.44	7.44
NN0023	0.29	0.40	-	1.17	2.12	-	(0.16)	4.87	5.60
NN0024	0.27	0.66	-	1.75	3.68	-	(0.40)	6.83	7.84
NN0027	0.30	0.56	-	0.46	4.47	-	(0.23)	6.61	7.13
NN0030	0.22	0.31	0.36	0.46	4.80	-	(0.34)	6.79	7.61
NN0031	0.23	0.49	0.01	0.03	3.64	-	0.02	5.21	6.33
NN0032	0.31	0.78	-	0.56	3.27	-	(0.23)	5.47	6.44
NN0036	0.15	0.47	0.03	1.64	3.56	-	(0.77)	5.82	7.30
NN0037	0.25	0.25	-	1.35	3.13	-	(0.23)	5.32	6.40
NN0038	0.21	0.23	0.08	0.79	4.41	-	1.24	7.88	9.03
NN0040	0.32	0.33	-	0.28	3.60	-	(0.04)	5.47	6.58
NN0041	0.18	0.30	-	0.24	3.14	-	(0.24)	4.54	5.47
NN0042	0.28	0.68	-	0.15	3.93	-	(0.07)	6.28	7.46
NN0043	0.17	0.46	-	2.59	2.08	-	(0.22)	5.59	6.48
NN0044	0.17	0.21	-	1.58	3.61	0.41	(0.16)	7.01	7.92
NN0045	0.17	0.15	0.01	2.55	3.16	-	(0.49)	6.04	7.35
Average	**0.23**	**0.40**	**0.03**	**0.87**	**3.54**	**0.02**	**(0.15)**	**5.92**	**6.90**

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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS
NN0002	0.11	0.36	0.09	0.30	0.27	1.15	2.28	0.71	1.99	4.98
NN0005	0.05	0.12	0.07	0.66	0.21	2.31	3.41	0.54	0.64	4.59
NN0021	0.06	0.20	0.06	0.36	0.20	0.42	1.30	0.79	1.90	3.98
NN0023	0.13	0.25	0.04	0.41	0.30	0.10	1.22	0.49	3.52	5.23
NN0024	0.06	0.28	0.05	0.71	0.36	1.90	3.35	0.63	0.62	4.60
NN0027	0.07	0.14	0.12	0.33	0.28	1.39	2.32	0.87	0.83	4.02
NN0030	0.09	0.17	0.02	0.44	0.06	1.46	2.24	0.96	1.42	4.62
NN0031	0.05	0.13	0.09	0.55	0.24	2.94	4.01	0.60	0.31	4.91
NN0032	0.14	0.13	0.02	0.88	0.17	1.98	3.34	0.48	0.44	4.25
NN0036	0.04	0.18	0.04	0.34	0.08	0.76	1.44	0.44	1.60	3.48
NN0037	0.06	0.14	0.04	0.78	0.26	2.77	4.04	0.43	1.06	5.53
NN0038	0.14	0.17	0.13	0.23	0.60	1.11	2.39	0.59	2.21	5.19
NN0040	0.19	0.25	0.10	0.75	0.28	1.50	3.08	0.86	0.70	4.63
NN0041	0.08	0.17	0.06	0.62	0.14	0.72	1.79	0.45	1.90	4.14
NN0042	0.04	0.18	0.10	1.10	0.16	0.30	1.89	0.58	1.62	4.09
NN0043	-	0.14	0.06	0.62	0.52	2.39	3.74	0.16	1.44	5.34
NN0044	0.04	0.17	0.09	0.45	0.14	1.65	2.55	0.11	1.09	3.75
NN0044	0.10	0.31	0.19	0.50	0.31	1.70	3.10	0.50	1.48	5.08
Average	**0.08**	**0.20**	**0.08**	**0.56**	**0.25**	**1.47**	**2.64**	**0.57**	**1.37**	**4.58**

Table B6 Capital structure

Farm assets				
	Land value	Land value	Permanent water value	Permanent water value
	$/ha	$/cow	$/ha	$/cow
Average	21,075	17,611	988	618

Other farm assets (per usable hectare)				
Plant and equipment	Livestock	Hay and grain	Other assets	Total assets
$/ha	$/ha	$/ha	$/ha	$/ha
2,516	4,004	359	574	29,555

Liabilities			
	Liabilities per usable hectare	Liabilities per milking cow	Liabilities per kgMS
	$/ha	$/cow	$/kgMS
Average	6,801	5,631	11.43

Equity	
Equity per usable hectare	Average equity
$/ha	%
22,753	76

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

Table B7 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 ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)
2011/12	7.13	9.65	8.04	10.88	0.35	0.47	0.29	0.40	3.17	4.29	3.81	5.15
2012/13	6.83	8.99	7.46	9.82	0.33	0.44	0.32	0.43	3.34	4.40	4	5.26
2013/14	7.17	9.20	8.01	10.28	0.30	0.38	0.37	0.48	3.68	4.73	4.35	5.58
2014/15	7.62	9.56	8.61	10.81	0.35	0.43	0.36	0.45	3.78	4.74	4.48	5.62
2015/16	7.65	9.48	8.46	10.48	0.34	0.42	0.31	0.38	3.61	4.47	4.26	5.28
2016/17	7.28	8.85	8.25	10.03	0.35	0.43	0.31	0.38	3.46	4.21	4.12	5.01
2017/18	7.62	9.09	8.39	10.01	0.38	0.45	0.33	0.39	4.09	4.88	4.79	5.71
2018/19	8.07	9.51	9.16	10.78	0.33	0.38	0.35	0.41	4.45	5.24	5.13	6.04
2019/20	9.37	10.89	10.35	12.03	0.43	0.50	0.32	0.37	4.91	5.70	5.65	6.57
2020/21	9.31	10.66	10.63	12.18	0.50	0.57	0.33	0.38	4.33	4.96	5.15	5.90
2021/22	9.58	10.52	11.06	12.14	0.57	0.63	0.36	0.39	4.54	4.98	5.46	5.99
2022/23	11.97	12.46	13.32	13.87	0.57	0.59	0.34	0.35	5.30	5.52	6.21	6.46
2023/24	12.37	12.37	13.09	13.09	0.59	0.59	0.39	0.39	5.92	5.92	6.90	6.90
Average		**10.09**		**11.26**		**0.48**		**0.40**		**4.93**		**5.81**

	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 ($/kgMS)	Real ($/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	2.39	1.44	1.95	3.20	4.33	1.03	1.39	0.45	0.60	0.58	0.78	3.0	2.2
2012/13	2.01	2.65	1.26	1.66	3.25	4.28	0.22	0.29	0.58	0.76	-0.36	(0.47)	0.7	-1.6
2013/14	2.02	2.60	1.34	1.72	3.36	4.31	0.29	0.37	0.64	0.82	-0.34	(0.44)	0.8	-1.7
2014/15	1.87	2.34	1.45	1.82	3.31	4.15	0.82	1.03	0.63	0.79	0.19	0.24	1.9	0.4
2015/16	1.96	2.43	1.62	2.01	3.58	4.44	0.62	0.77	0.53	0.66	0.09	0.11	1.6	-0.1
2016/17	1.92	2.33	1.46	1.78	3.38	4.11	0.75	0.91	0.52	0.63	0.23	0.28	1.8	0.8
2017/18	1.86	2.22	1.61	1.92	3.46	4.13	0.13	0.16	0.46	0.55	-0.33	(0.39)	0.5	-1.0
2018/19	2.16	2.55	1.43	1.68	3.59	4.23	0.43	0.51	0.47	0.56	-0.04	(0.05)	1.1	0.2
2019/20	2.18	2.53	1.82	2.12	4.00	4.65	0.69	0.81	0.50	0.58	0.19	0.22	1.7	0.9
2020/21	2.24	2.57	1.64	1.88	3.90	4.47	1.59	1.82	0.53	0.61	1.06	1.21	3.3	0.0
2021/22	2.52	2.77	1.75	1.92	4.27	4.68	1.33	1.46	0.55	0.60	0.78	0.86	2.4	22.8
2022/23	2.55	2.65	2.04	2.12	4.58	4.77	2.52	2.62	0.78	0.81	1.75	1.82	4.3	12.1
2023/24	2.64	2.64	1.94	1.94	4.58	4.58	1.61	1.61	0.91	0.91	0.70	0.70	3.1	0.7
Average		**2.51**		**1.89**		**4.39**		**1.06**		**0.68**		**0.38**	**2.0**	**2.7**

Note: 'Real' dollar values are the nominal values converted to 2023/24 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 B8 Historical data – average farm physical information

	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	
Year	ha	ha	t DM/ 100mm/ ha	hd	hd/ ha	kgMS/ cow	kgMS/ 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	61	307	415
2012/13	335	130	0.49	361	1.3	460	615	7.4	1.4	64	335	441
2013/14	231	102	0.59	272	1.2	471	590	5.8	1.2	62	444	570
2014/15	215	95	0.48	259	1.3	477	606	6.4	1.8	63	434	545
2015/16	210	95	0.53	289	1.4	463	636	5.9	2.3	60	401	497
2016/17	188	88	0.49	259	1.4	477	680	7.2	1.5	62	376	457
2017/18	188	94	0.60	288	1.5	459	698	7.1	1.6	57	442	527
2018/19	299	108	0.68	328	1.3	443	580	7.2	2.0	66	581	684
2019/20	314	106	0.50	309	1.2	472	579	6.0	2.3	56	586	681
2020/21	321	117	0.37	309	1.3	474	596	6.6	2.3	63	497	569
2021/22	365	118	0.31	312	1.2	461	559	5.3	1.9	60	464	509
2022/23	291	121	0.50	298	1.3	456	609	5.3	2.0	53	545	567
2023/24	284	114	0.49	308	1.3	475	636	6.2	2.0	54	639	639
Average	**269**	**108**	**0.50**	**299**	**1.3**	**465**	**614**	**6.3**	**1.9**	**60**		**546**

*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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	%	$/kgMS	%	$/kgMS	% of income	$/kgMS	%
SN0002	12.18	2.21	14.39	6.04	5.06	54	3.30	4.4	1.07	7	2.23	5.9
SN0006	11.79	(0.43)	11.37	7.33	5.06	59	(1.02)	-1.7	1.10	10	(2.12)	-7.1
SN0009	11.07	0.82	11.89	6.61	4.25	61	1.03	1.1	1.45	12	(0.42)	-0.6
SN0012	11.73	0.66	12.40	4.74	3.83	55	3.82	9.4	0.97	8	2.85	11.3
SN0014	9.38	0.67	10.05	4.80	2.39	67	2.87	10.1	0.44	4	2.43	11.2
SN0021	9.56	1.22	10.78	4.36	2.78	61	3.64	11.9	0.00	0	3.64	12.0
SN0023	11.43	0.07	11.50	5.83	3.18	65	2.50	5.9	0.48	4	2.02	6.0
SN0024	12.18	0.25	12.43	5.85	2.99	66	3.59	4.8	1.90	15	1.69	5.8
SN0028	10.40	0.65	11.05	5.44	2.60	68	3.01	11.0	0.21	2	2.80	12.8
SN0031	13.55	0.53	14.08	5.94	3.52	63	4.62	11.6	1.36	10	3.26	14.8
SN0033	10.38	0.30	10.68	5.95	4.13	59	0.60	1.3	1.37	13	(0.77)	-4.3
SN0034	13.20	0.10	13.30	6.84	3.82	64	2.64	1.9	0.80	6	1.85	3.6
SN0036	10.52	0.44	10.96	5.67	3.97	59	1.32	3.5	0.35	3	0.97	2.9
SN0037	12.86	0.44	13.30	6.03	3.41	64	3.86	4.4	1.41	11	2.45	5.8
SN0038	12.01	0.32	12.33	6.47	4.03	62	1.83	2.4	0.47	4	1.35	4.0
SN0039	13.30	1.90	15.20	6.41	5.05	56	3.74	6.3	0.77	5	2.97	9.6
SN0041	10.01	1.51	11.51	6.16	2.67	70	2.68	6.9	1.11	10	1.57	8.2
SN0042	9.47	1.17	10.64	5.04	2.39	68	3.21	12.8	0.74	7	2.47	17.9
Average	**11.39**	**0.71**	**12.10**	**5.86**	**3.62**	**62**	**2.63**	**6.0**	**0.89**	**7**	**1.74**	**6.7**

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	kgMS/cow	kgMS/ha	%	%
SN0002	319	95	0.2	405	1.3	596	757	4.1	3.3
SN0006	325	65	0.4	260	0.8	534	427	4.0	3.2
SN0009	229	11	1.0	330	1.4	496	714	4.1	3.4
SN0012	365	101	0.4	400	1.1	542	594	3.3	3.4
SN0014	392	80	1.3	430	1.1	696	764	4.3	3.5
SN0021	1,726	679	0.6	1,838	1.1	525	559	4.8	3.9
SN0023	135	90	0.8	170	1.3	606	763	3.9	3.3
SN0024	436	167	0.2	348	0.8	559	447	3.9	3.3
SN0028	748	748	1.1	1,193	1.6	656	1,047	4.3	3.5
SN0031	708	1	0.6	588	0.8	677	562	3.8	3.2
SN0033	391	174	0.4	355	0.9	579	526	4.0	3.4
SN0034	269	138	0.3	593	2.2	563	1,239	3.5	3.0
SN0036	190	130	0.6	392	2.1	536	1,105	4.0	3.3
SN0037	157	75	0.3	275	1.8	485	850	3.4	3.2
SN0038	103	66	0.4	260	2.5	551	1,390	3.7	3.1
SN0039	274	75	1.0	438	1.6	500	799	3.8	3.1
SN0041	1,130	1	0.8	790	0.7	621	434	4.3	3.7
SN0042	733	1	1.4	1,077	1.5	766	1,125	3.9	3.6
Average	**479**	**150**	**0.7**	**563**	**1.4**	**583**	**784**	**4.0**	**3.4**

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	kgMS/FTE
SN0002	9.6	0.4	31	148	23	12	37	61	36,223
SN0006	6.0	2.3	49	203	6	19	67	63	33,861
SN0009	3.2	2.4	30	-	-	-	-	72	35,736
SN0012	5.4	2.8	32	56	24	-	2	63	34,124
SN0014	4.8	17.2	57	242	45	-	8	100	69,321
SN0021	2.7	-	75	193	13	-	1	139	72,804
SN0023	4.8	2.5	54	165	45	-	56	71	42,932
SN0024	4.3	1.3	44	188	10	-	1	111	61,976
SN0028	2.2	5.6	41	139	28	4	17	88	57,751
SN0031	(0.0)	-	53	-	-	-	-	81	54,832
SN0033	6.4	1.4	66	361	25	1	2	65	37,472
SN0034	5.6	1.1	31	246	-	-	-	79	44,360
SN0036	3.8	7.0	45	137	13	29	8	73	39,081
SN0037	6.2	0.2	43	164	15	9	13	84	40,764
SN0038	7.1	2.1	34	392	32	48	50	65	35,852
SN0039	5.3	1.8	76	123	-	-	-	56	27,872
SN0041	(0.0)	-	51	-	-	-	-	100	61,892
SN0042	(0.0)	-	68	-	-	-	-	81	62,031
Average	**4.3**	**2.7**	**49**	**197**	**20**	**9**	**19**	**81**	**47,160**

**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	5.4	506	-	298	-	485	69
SN0006	4.3	620	386	465	-	563	51
SN0009	6.2	559	231	284	450	398	70
SN0012	4.0	432	440	353	-	427	68
SN0014	4.3	571	-	-	-	571	43
SN0021	1.8	485	-	-	-	485	25
SN0023	3.4	623	-	370	-	556	46
SN0024	4.1	591	332	527	-	541	56
SN0028	5.5	527	302	294	147	427	59
SN0031	4.6	586	-	-	-	586	47
SN0033	3.2	508	-	537	-	512	34
SN0034	5.5	471	-	469	380	455	69
SN0036	3.3	580	-	520	-	572	55
SN0037	4.1	581	308	553	-	507	57
SN0038	4.4	534	152	507	-	476	66
SN0039	2.7	658	-	193	618	574	24
SN0041	4.4	477	174	-	273	440	49
SN0042	4.1	529	-	-	283	477	32
Average	**4.2**	**547**	**129**	**298**	**119**	**503**	**51**

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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS
SN0002	0.08	0.17	0.38	0.13	0.16	0.92	0.26	0.03	0.04
SN0006	0.24	0.35	0.01	0.17	0.22	1.00	0.49	0.19	0.58
SN0009	0.18	0.18	0.06	0.16	0.16	0.74	0.15	0.21	0.30
SN0012	0.19	0.12	0.01	0.18	0.02	0.51	0.17	0.19	0.07
SN0014	0.15	0.18	0.05	0.11	0.10	0.59	0.52	0.32	1.06
SN0021	0.07	0.08	0.02	0.18	0.08	0.43	0.82	0.55	0.23
SN0023	0.15	0.05	-	0.21	0.20	0.60	0.85	0.19	0.28
SN0024	0.22	0.22	0.15	0.12	0.11	0.83	0.49	-	0.11
SN0028	0.10	0.20	0.07	0.10	0.09	0.55	0.69	0.19	0.51
SN0031	0.18	0.11	0.04	0.14	0.12	0.59	0.53	0.10	0.49
SN0033	0.15	0.16	0.03	0.20	0.18	0.72	1.04	0.35	0.27
SN0034	0.25	0.34	0.20	0.22	0.21	1.22	0.30	-	0.20
SN0036	0.15	0.20	0.01	0.06	0.10	0.52	0.37	0.18	0.33
SN0037	0.09	0.15	0.03	0.17	0.18	0.62	0.28	-	0.16
SN0038	0.08	0.30	0.08	0.22	0.13	0.80	0.67	-	0.22
SN0039	0.42	0.22	0.06	0.15	0.20	1.05	0.47	0.15	0.56
SN0041	0.15	0.17	0.05	0.14	0.08	0.59	0.50	0.32	0.77
SN0042	0.23	0.13	0.06	0.14	0.12	0.69	0.68	0.26	0.76
Average	**0.17**	**0.19**	**0.07**	**0.15**	**0.14**	**0.72**	**0.51**	**0.18**	**0.39**

Table C4 (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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS
SN0002	0.20	0.02	-	0.25	3.72	0.13	0.45	5.12	6.04
SN0006	0.25	0.51	-	1.11	3.21	0.31	(0.32)	6.33	7.33
SN0009	0.12	0.32	-	1.76	3.67	-	(0.64)	5.87	6.61
SN0012	0.28	0.20	0.02	0.48	2.84	0.22	(0.25)	4.23	4.74
SN0014	0.21	0.54	0.03	-	2.82	0.11	(1.37)	4.21	4.80
SN0021	0.19	0.44	-	-	1.71	0.03	(0.07)	3.93	4.36
SN0023	0.08	0.37	-	0.54	2.54	0.34	0.04	5.23	5.83
SN0024	0.11	0.33	0.09	1.12	2.83	-	(0.07)	5.02	5.85
SN0028	0.17	0.43	-	0.73	2.46	0.06	(0.35)	4.89	5.44
SN0031	0.32	0.27	-	-	3.92	-	(0.28)	5.35	5.94
SN0033	0.27	0.31	0.07	0.39	2.39	-	0.14	5.23	5.95
SN0034	0.14	0.39	0.12	0.87	3.52	-	0.09	5.62	6.84
SN0036	0.17	0.27	-	0.43	3.13	0.33	(0.06)	5.15	5.67
SN0037	0.13	0.43	0.01	1.19	3.69	-	(0.48)	5.41	6.03
SN0038	0.21	0.31	0.00	0.91	2.90	0.36	0.08	5.67	6.47
SN0039	0.41	0.27	-	0.18	2.74	0.27	0.32	5.36	6.41
SN0041	0.41	0.72	-	0.07	3.04	0.18	(0.41)	5.57	6.16
SN0042	0.32	0.42	-	-	2.54	-	(0.63)	4.35	5.04
Average	**0.22**	**0.36**	**0.02**	**0.56**	**2.98**	**0.13**	**(0.21)**	**5.14**	**5.86**

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
	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS	$/kgMS
SN0002	0.12	0.17	0.03	1.50	0.14	0.51	2.46	0.95	1.64	5.06
SN0006	0.04	0.26	0.15	0.52	0.36	2.41	3.74	0.82	0.50	5.06
SN0009	0.04	0.21	0.03	0.50	0.14	1.71	2.62	1.12	0.51	4.25
SN0012	0.03	0.10	0.11	0.41	0.21	1.59	2.44	0.81	0.58	3.83
SN0014	0.03	0.12	0.03	0.35	0.19	0.82	1.54	0.40	0.45	2.39
SN0021	0.04	0.07	0.05	0.99	0.09	0.84	2.08	0.46	0.23	2.78
SN0023	0.07	0.14	0.20	0.40	0.11	0.65	1.57	0.26	1.35	3.18
SN0024	0.07	0.14	0.03	0.67	0.11	0.79	1.81	0.70	0.48	2.99
SN0028	0.01	0.08	0.05	0.51	0.16	1.38	2.19	0.42	-	2.60
SN0031	0.03	0.21	0.05	0.55	0.15	1.58	2.57	0.82	0.13	3.52
SN0033	0.04	0.25	0.01	0.65	0.10	1.61	2.64	0.64	0.86	4.13
SN0034	0.03	0.13	0.09	0.54	0.37	1.90	3.06	0.30	0.46	3.82
SN0036	0.07	0.08	0.03	1.04	0.12	1.19	2.53	0.41	1.03	3.97
SN0037	0.13	0.11	0.04	0.46	0.13	0.93	1.80	0.34	1.27	3.41
SN0038	0.07	0.12	0.09	0.64	0.23	1.41	2.56	0.60	0.87	4.03
SN0039	0.06	0.25	0.03	0.69	0.62	1.67	3.32	0.47	1.26	5.05
SN0041	0.03	0.11	0.01	0.41	0.24	0.94	1.73	0.57	0.37	2.67
SN0042	0.02	0.06	0.06	0.38	0.15	1.20	1.87	0.31	0.21	2.39
Average	**0.05**	**0.14**	**0.06**	**0.62**	**0.20**	**1.28**	**2.36**	**0.58**	**0.68**	**3.62**

Table C6 Capital structure

Farm assets				
	Land value	Land value	Permanent water value	Permanent water value
	$/ha	$/cow	$/ha	$/cow
Average	21,974	15,305	2,528	2,053

Other farm assets (per usable hectare)				
Plant and equipment	Livestock	Hay and grain	Other assets	Total assets
$/ha	$/ha	$/ha	$/ha	$/ha
2,829	4,454	836	536	33,240

Liabilities		
Liabilities per usable hectare	Liabilities per milking cow	Liabilities per kgMS
$/ha	$/cow	$/kgMS
7,998	6,469	11.18

Equity	
Equity per usable hectare	Average equity
$/ha	%
25,242	73

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

Table C7 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 ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)	Nominal ($/kgMS)	Real ($/kgMS)
2011/12	6.64	8.98	7.48	10.12	0.31	0.43	0.25	0.33	2.86	3.87	3.42	4.63
2012/13	6.03	7.94	6.95	9.15	0.32	0.43	0.24	0.32	3.01	3.96	3.57	4.70
2013/14	7.12	9.14	7.98	10.24	0.32	0.41	0.21	0.27	3.20	4.11	3.73	4.79
2014/15	7.28	9.14	8.25	10.35	0.30	0.37	0.21	0.27	3.28	4.12	3.79	4.76
2015/16	6.97	8.64	7.94	9.84	0.35	0.44	0.21	0.26	3.01	3.73	3.57	4.42
2016/17	6.48	7.88	7.62	9.26	0.40	0.49	0.22	0.26	3.07	3.73	3.68	4.47
2017/18	6.81	8.13	7.49	8.94	0.34	0.41	0.23	0.27	3.63	4.33	4.20	5.01
2018/19	7.37	8.68	8.14	9.59	0.30	0.35	0.26	0.31	4.54	5.34	5.10	6.00
2019/20	8.36	9.73	9.32	10.83	0.31	0.36	0.24	0.27	4.67	5.43	5.22	6.06
2020/21	8.51	9.75	9.53	10.92	0.33	0.38	0.24	0.27	3.46	3.96	4.03	4.62
2021/22	8.68	9.53	9.90	10.86	0.37	0.40	0.24	0.26	3.95	4.33	4.56	5.00
2022/23	10.94	11.39	12.08	12.58	0.44	0.46	0.28	0.29	4.80	5.00	5.52	5.75
2023/24	11.39	11.39	12.10	12.10	0.43	0.43	0.29	0.29	5.14	5.14	5.86	5.86
Average		**9.25**		**10.37**		**0.41**		**0.28**		**4.39**		**5.08**

	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	1.83	1.05	1.42	2.40	3.25	1.66	2.25	0.73	0.98	0.93	1.26	5.5	4.9
2012/13	1.44	1.89	1.12	1.47	2.56	3.37	0.82	1.08	0.66	0.87	0.16	0.21	2.7	0.5
2013/14	1.54	1.98	1.16	1.49	2.70	3.47	1.55	1.99	0.61	0.79	0.94	1.20	4.8	4.7
2014/15	1.52	1.91	1.02	1.28	2.54	3.19	1.92	2.41	0.56	0.70	1.36	1.71	5.3	5.7
2015/16	1.49	1.85	1.17	1.45	2.66	3.30	1.71	2.12	0.55	0.68	1.16	1.44	4.7	4.7
2016/17	1.67	2.03	1.16	1.41	2.83	3.44	1.11	1.35	0.51	0.62	0.60	0.73	2.7	2.1
2017/18	1.49	1.78	1.22	1.46	2.71	3.23	0.58	0.69	0.58	0.69	0.00	(0.00)	2.1	0.6
2018/19	1.55	1.83	1.19	1.40	2.74	3.23	0.31	0.36	0.61	0.72	-0.30	(0.36)	0.3	-2.1
2019/20	1.78	2.07	0.89	1.04	2.67	3.11	1.43	1.66	0.68	0.80	0.74	0.86	3.8	8.8
2020/21	1.84	2.11	1.05	1.20	2.88	3.30	2.62	3.00	0.61	0.70	2.01	2.30	6.7	11.0
2021/22	2.04	2.24	1.22	1.34	3.26	3.58	2.08	2.28	0.59	0.65	1.49	1.63	4.7	7.7
2022/23	2.24	2.33	1.30	1.35	3.54	3.69	3.01	3.13	0.68	0.71	2.32	2.42	7.5	9.9
2023/24	2.36	2.36	1.25	1.25	3.62	3.62	2.63	2.63	0.89	0.89	1.74	1.74	6.0	6.7
Average		**2.02**		**1.35**		**3.37**		**1.92**		**0.75**		**1.17**	**4.4**	**5.0**

Note: 'Real' dollar values are the nominal values converted to 2023/24 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 C8 Historical data – average farm physical information

	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	
Year	ha	ha	t DM/ 100mm/ ha	hd	hd/ ha	kgMS/ cow	kgMS/ ha	t DM/ ha	t DM/ ha	% of ME	Nominal ($/t DM)	Real ($/t DM)
2011/12	351	156	0.5	450	1.5	495	728	6.8	0.9	57	301	407
2012/13	323	151	0.6	337	1.1	523	601	6.5	1.2	55	311	409
2013/14	381	139	0.6	350	1.0	541	546	6.2	1.0	57	377	484
2014/15	372	165	0.6	430	1.1	540	597	6.7	1.8	58	389	488
2015/16	379	164	0.6	425	1.1	552	597	6.5	1.9	62	382	473
2016/17	343	153	0.6	396	1.2	520	611	6.5	1.7	58	336	409
2017/18	333	149	0.8	401	1.3	526	665	5.6	1.6	55	398	475
2018/19	390	184	0.8	424	1.2	546	643	5.3	1.6	58	552	650
2019/20	419	181	0.7	463	1.2	555	673	4.8	1.3	47	522	606
2020/21	416	156	0.6	442	1.3	578	710	5.1	2.7	53	408	467
2021/22	398	160	0.6	437	1.3	575	731	4.7	2.5	54	443	486
2022/23	464	155	0.5	520	1.3	561	708	3.6	2.3	51	547	569
2023/24	479	150	0.7	563	1.4	583	784	4.3	2.7	49	547	547
Average	**388**	**159**	**0.6**	**434**	**1.2**	**546**	**661**	**5.6**	**1.8**	**55**		**498**

*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

Glossary of terms

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.
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 per cent of their HRWS.
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.
Appreciation	An increase in the value of an asset in the market, often only applicable to land value.
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.
Cash overheads	All fixed costs that have a cash cost to the business. Includes all overhead costs except imputed labour costs and depreciation.
Cost structure	Variable costs as a percentage of total costs, where total costs equal variable costs plus overhead costs.
Concentrates	Refers to feeds with a concentrated source of energy such as grains, pellets and other grain mixes.
Debt servicing ratio	Interest and lease costs as a percentage of gross farm income.
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.
Earnings before interest and tax (EBIT)	Gross income minus total variable and total overhead costs.
Employed labour cost	Cash cost of any paid employee, including on-costs such as superannuation and Workcover.
Equity	Total assets minus total liabilities. Equal to the total value of capital invested in the farm business by the owner/ operator(s).
Equity per cent	Total equity as a percentage of the total assets owned. The proportion of the total assets owned by the business.
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.
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.
Finance costs	See interest and lease costs.
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.
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)).
Gross farm income	Farm income including milk sales, livestock trading and other income such as income from grants and rebates.
Gross margin	Gross farm income minus total variable costs.
Herd costs	Cost of artificial insemination (AI) and herd tests, animal health and calf rearing.
Imputed	An estimated amount introduced into economic management analysis to allow reasonable comparisons between years and between other businesses.
Imputed labour cost	An allocated allowance for the cost of owner/operator, family, and sharefarmer time in the business.
Interest and lease costs	Total interest plus total lease costs paid.
Labour cost	Cost of the labour resource on farm. Includes both imputed and employed labour costs.
Labour efficiency	FTEs per cow and per kgMS. Measures productivity of the total labour resources in the business.
Liability	Money owed to someone else, e.g., family or a financial institute such as a bank.
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.
Milk income	Income from the sale of milk. This is net of compulsory levies and charges.
Milking area	The area of land grazed by milking cows to produce milk.

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.
Nominal terms	Dollar values or interest rates that include an inflation component.
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 100mm 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_4	Methane
CO_2	Carbon dioxide
CO_2-e	Carbon dioxide equivalent
CoP	Cost of production
DFMP	Dairy Farm Monitor Project
DM	Dry matter of feed stuffs
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. 1mm is equivalent to 4 points or 1/25th of an inch of rainfall
MS	Milk solids (protein and fat)
N_2O	Nitrous oxide
NSW DPIRD	NSW Department of Primary Industries and Regional Development
Q1	First quartile, i.e., the value of which one quarter, or 25 per cent, of data in that range is less than the average
Q3	Third quartile, i.e., the value of which one quarter, or 25 per cent, 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 vales used to estimate the inventory values of livestock were determined by breed and liveweight. Example values for Friesians were:

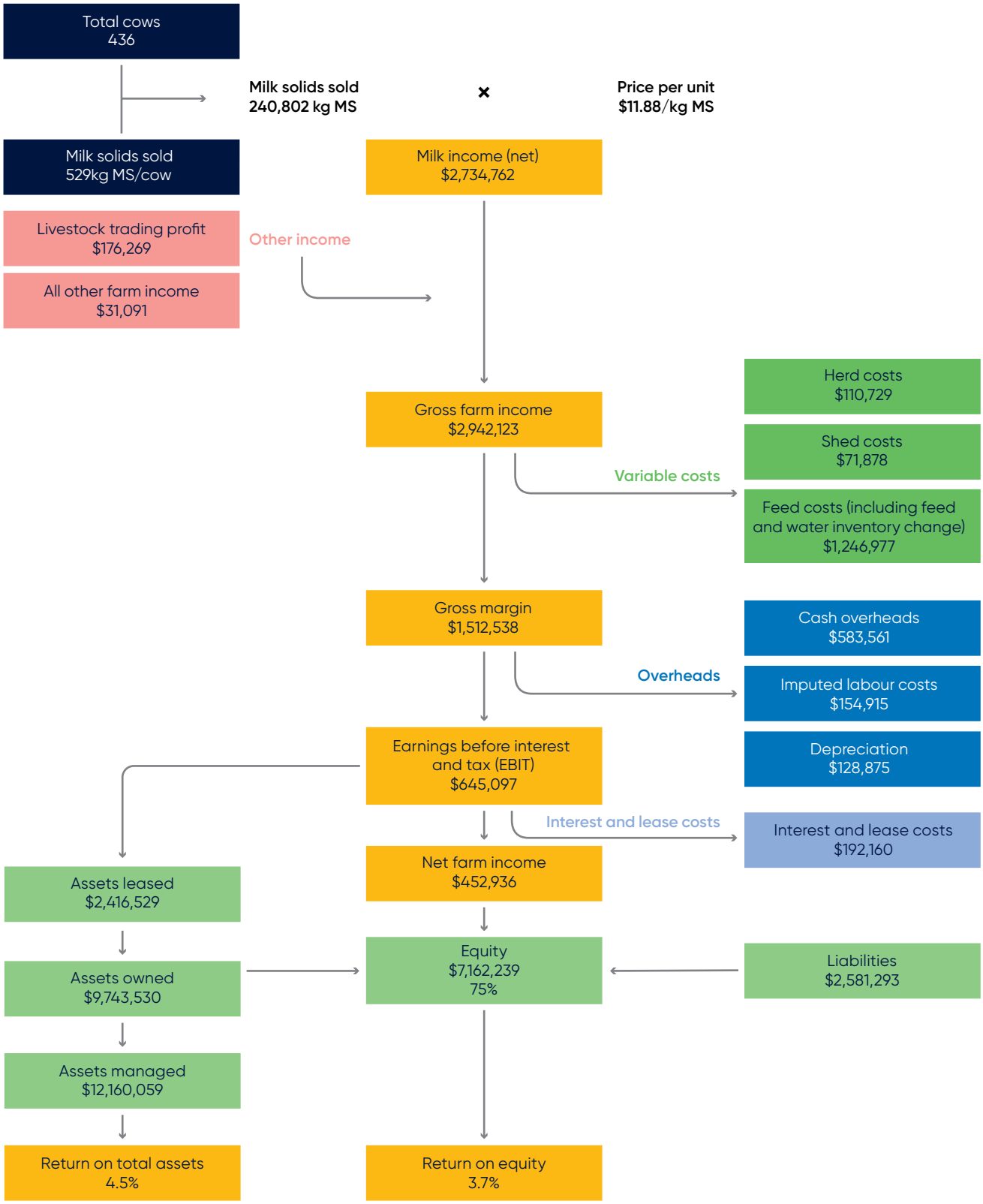
Category	Opening value ($/hd)	Closing value ($/hd)
Mature cows (550kg)	$2,200	$2,200
2-year-old heifers	$1,650	$2,200
1-year old heifers	$825	$1,650
23/24 calves		$825
Mature bulls	$3,300	$3,300

Imputed owner/operator and family labour

In 2023/24, the imputed owner/operator and family labour rate was $36/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 2023/24

All 36 farms



Acknowledgement
Dairy Australia acknowledges the funding from levy payers and contribution by Commonwealth Government.

ISSN 2206-0014

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5712 | Nov 2024