Dairy Australia
Your Levy at Work

Dairy Farm Monitor Project

New South Wales
Annual Report 2013/14

State Government Victoria

NSW GOVERNMENT Department of Primary Industries

Acknowledgements

The cooperation, patience and goodwill of the farmers who willingly supplied their farm information is gratefully acknowledged.

The diligent work of the data collectors for this year deserves particular thanks, especially Sheena Carter, Julie Dart, Lloyd Davies, Hayden Kingston, Caroline Hayes, Don Burrowes and Kerry Kempton.

Strong support was received from Tim Burfitt, Manager Dairy and Intensive Livestock with NSW DPI.

The project was also made possible this year through the guidance and contributions of Claire Waterman, Natalie Nelson and Olive Montecillo from the Department of Environment and Primary Industries Victoria, and Helen Quinn from Dairy Australia.

This report has been produced by Kerry Kempton, Technical Specialist Dairy with NSW DPI.

Further information regarding the *NSW Dairy Farm Monitor Project* may be obtained from:

Kerry Kempton
Department of Primary Industries
Tocal Agricultural Centre
Paterson, NSW 2421
Telephone: 02 4939 8945
kerry.kempton@dpi.nsw.gov.au

Tim Burfitt
Department of Primary Industries
Private Bag 8
Orange, NSW 2800
Telephone: 02 6391 3729
tim.burfitt@dpi.nsw.gov.au

To find out the latest information on the project visit the project website at **www.dairyaustralia.com.au/dairyfarmmonitor**

Or the NSW Department of Primary Industries website: **www.dpi.nsw.gov.au/agriculture/livestock/dairy-cattle**

Dairy Australia

Published by Dairy Australia Limited.

Contents

List of tables

List of figures

Keep an eye on the project website for further reports and updates to the 2013/14 Dairy Farm Monitor Project at:
www.dairyaustralia.com.au/dairyfarmmonitor

or on the NSW DPI website:
www.dpi.nsw.gov.au/agriculture/livestock/dairy-cattle

Notes on the presentation of data in this report

This section of the report defines and explains the calculations used and the data presented throughout the report. The different sections of the report are discussed and the number of participant farms in the dairying regions listed.

This section presents a guide to the layout of the report and should not be confused with *Section II: Farm Monitor Method* which discusses the methodology for the farm data analysis.

This report is presented in the following parts:

- Executive Summary
- Farm monitor method
- State wide overview
- North region overview
- South region overview
- Business confidence survey
- Greenhouse Gas summary
- Appendices.

The report presents visual descriptions of the data for the 2013/14 financial year. Data is presented for individual farms, regional averages and top 25% of farms ranked by return on assets. Reported averages are calculated as the mean. These averages should in no way be considered averages for the population of farms in that region given the small sample size and the fact that farms are not randomly selected.

Return on assets (ROA) is the determinate of the top producers, providing an assessment of the performance of the whole farm while accounting for differences in location, the quality of land and production system.

The Q1–Q3 data range for key indicators is also presented in the tables to give an indication of the variation in the data. The Q1 value is the quartile 1 value. That is, the value of which one quarter (25%) of data in that range is less than. The Q3 value is the quartile 3 value. That is, the value of which one quarter (25%) of data in that range is greater than. This means that the middle 50% of data sits between the Q1–Q3 data range. Given the differences in variation in the regional data, caution is highly recommended when comparing one region to another.

For clarity in the report, groups of participating farms in each region are referred to by their regional name:

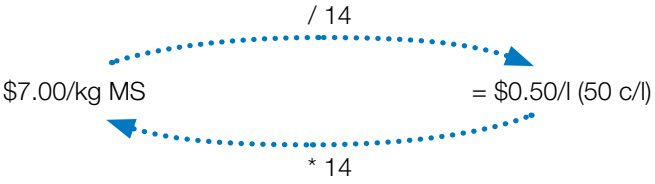
- The 16 participating farms in the Northern New South Wales region are referred to as 'the North'.
- The 14 participating farms in the Southern and Inland New South Wales region are referred to as 'the South'.
- The appendices include detailed data tables, a list of abbreviations and a glossary of terms.

Milk production data is presented in kilograms of milk solids (kg MS) as farms are paid according to milk solids. Wherever possible this data is also presented in litres in brackets. There are also the occasional references to measures on a per hectare or per cow basis. Where financial data is reported in cents / litre, this is derived from the total litres produced per farm, and is not corrected for varying levels of milk components. The exception is for milk income, where the actual cents per litre received by each farm is reported. The appendix tables contain the majority of financial information on a per kilogram of milk solids basis.

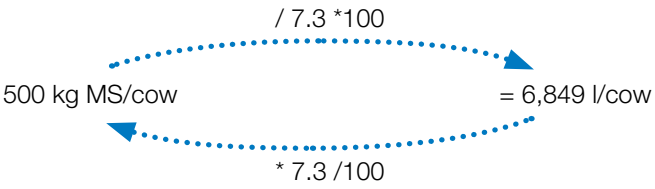
The following ready reckoner may be a useful reference for converting between kilograms of milk solids and litres where the information is not already provided. This is a generalised conversion formula, not the method used in the Dairy Farm Monitor data analysis.

In this example the 2013/14 State average of 4.0% butterfat and 3.3% protein milk components result in a conversion factor of 14 (1/ (4.0+3.3)).

To convert from $/kg MS to $/litre divide by a factor of 14:



To convert kg MS/cow to litres/cow divide by a factor of 7.3 (4.0 + 3.3):



The methodology used is the same as that used in the Victorian Dairy Farm Monitor Project, and various other referenced sources. Attention should be paid to methodology when directly comparing figures from this report with those generated via other means. More detail on the methodology is provided in Part II.

Percentage differences are calculated as [(new value—original value)/original value]. For example 'costs went from $80/ha to $120/ha, a 50% increase'; [{(120-80)/80} x (100/1)] = [(40/80) x 100] = 0.5 x 100 = 50%, unless otherwise stated.

In the Statewide overview, the top 25% consists of 8 farms ranked on return on assets on a state wide basis, and are taken by considering all 30 farms as the one sample and not from combining the top farms from each region. In the two regional overview sections, the top 25% refers to the top 4 farms out of the 16 in North or 14 in South.

Discussion on 'last year' refers to the 2012/13 Dairy Farm Monitor Project report. It must be noted that not all of the participants from the 2012/13 report are in the 2013/14 report and that there are also new participants in this year's dataset, which have not been in previous years. It is important to keep this in mind when comparing datasets between years. Farms that were included in last year's sample are noted at the start of each regional chapter.

Please note that text around explanations of terms will be repeated within the different chapters.

Summary

Summary

This is the now the third year of the Dairy Farm Monitor Project in New South Wales. The project aims to provide the NSW dairy industry with valuable farm level data relating to profitability and production. Data from 30 farms across NSW reveal that in 2013/14 higher milk prices were received by farmers in NSW, but the dry seasonal conditions and higher purchased feed prices pushed costs of production up. Profitability was markedly different in the two regions: farms in the South increased earnings before interest and tax (EBIT) to an average of $287,671; whereas those in the North recorded an average EBIT of $67,136.

Data was collected from 30 farms from across the whole of NSW, with almost every dairying region represented. The participating farms have been allocated into two groups for analysis: the North and the South. Whilst this grouping reflects general similarities among farm systems, and the influences on milk pricing across NSW, there is still a large geographical spread of farms within each group and a wide range of regional differences in terms of climate and resources.

Interested participants have been selected with the objective of representing a distribution of farm sizes, herd sizes and geographical locations within the state. Not all the farms who participated last year are in this year's report, and there are some new farms included this year. The results published in this report should not be taken to represent population averages as the participant farms were not selected via random population sampling.

Following a difficult and challenging year for dairy farmers in 2012/13, farm profitability improved this year.

Milk price reached an average of $7.12 / kg MS (52 c/l), on the back of strong competition for milk, high export prices and the entry of Murray Goulburn into the NSW liquid milk market. The average earnings before interest and tax (EBIT) was $0.89 /kg MS (6 c/l) on average.

This year there was a marked difference in profit between the farmers in the two groups.

North

Across the North, farms experienced very dry conditions and 30% below average rainfall. Some areas had the driest summer on record. A significant rain event in November 2013 provided some respite, however the next good rainfall did not occur until March 2014.

Milk prices rose by 5% to $7.17 / kg MS (52 c/l). However costs of production also rose by 5% due mainly to higher purchased feed costs, therefore returns were only slightly better overall than the previous year. Farms fed more purchased feed per cow and paid more for it, with concentrates reaching $443 per tonne of dry matter (t DM) on average this year.

Despite these challenging conditions, average whole farm earnings before interest and tax (EBIT) increased to $67,136. Average return on assets fell to 0.8%. Five of the 16 farms in this group recorded a negative return on assets, and 9 recorded a negative return on equity.

Liabilities increased considerably when measured per milking cow in the North farms, indicating a higher level of borrowing on average. Equity levels were affected, dropping from 84% in 2012/13 to 79% in 2013/14.

South

In contrast the South had average rainfall that was 15% below average, but generally experienced more favourable seasonal conditions for most of the year.

Milk prices increased by around 11% over the previous year to $7.12 / kg MS. Cost of production increased by 4% on last year, with higher prices for purchased feed generally. Purchased concentrates cost $377 / t DM on average this year, up from $311 in the previous year.

Overall this led to an increase in EBIT to an average of $287,671 per farm, with 13 of the 14 farms recorded positive return on assets and on equity. This was a marked improvement on last year, and allowed farmers to spend on maintenance, building livestock numbers, debt reduction and capital expenditure. Average equity improved from 70% to 72% across the South farms.

Farmer confidence

Confidence has improved markedly across both regions, with three quarters of farmers expecting their farm business returns to improve in 2014/15, and more than 60% expecting to increase production.

Labour issues including succession planning, along with seasonal conditions and input costs were the top three issues farms identified over the next 12 months. Over the longer term labour management, succession planning and milk prices were front of mind for participant farmers.

Farm monitor method

Farm monitor method

This section of the report explains the methodology behind how figures in the Dairy Farm Monitor Project (DFMP) are calculated and what they mean. It helps put farm business economic terminology into context.

The methodology employed to generate the profitability and productivity data in this report was adapted from that described in The Farming Game (Malcolm et al. 2005) and is consistent with that used in previous Dairy Farm Monitor Project reports. Readers should be aware that not all benchmarking programs use the same methodology or terminology for farm financial reporting. The allocation of items such as lease costs, overhead costs or imputed labour costs against the farm enterprises will vary between financial benchmarking programs. Standard dollar values for things such as stock and feed on hand and imputed labour rates may also vary. For this reason, the results from different benchmarking programs should be compared with caution.

Figure 1: Dairy Farm Monitor Project Method

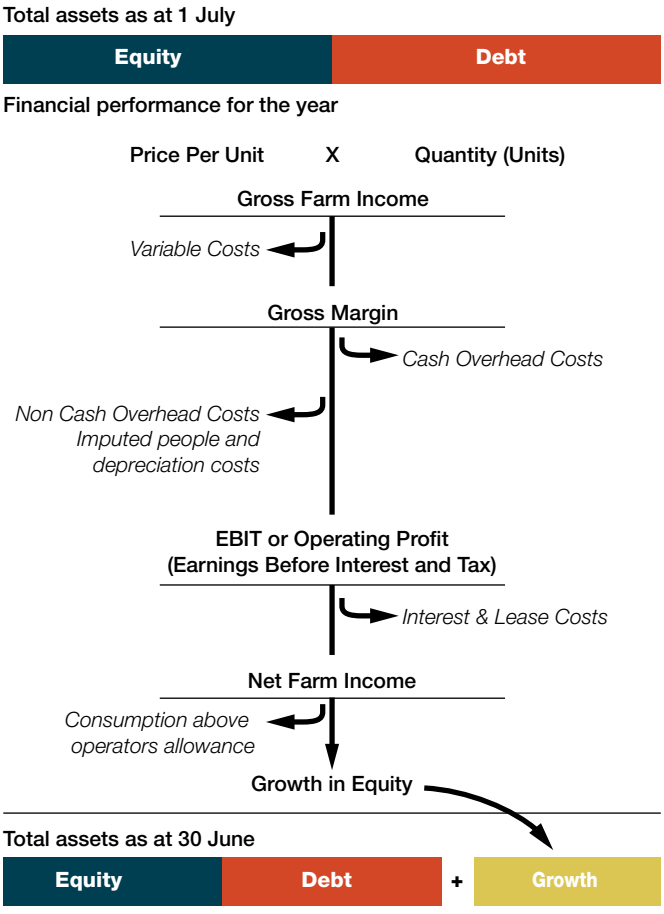


Figure 1 demonstrates how all of the different farm business economic terms come together and are calculated. It is adapted from an initial diagram obtained from Bill Malcolm (2008) at the University of Melbourne. The diagram shows the different profitability measures as certain costs are deducted from total income. It also discusses capital and growth.

Growth is achieved by investing in assets which generate income. These assets can be owned with equity (one's own capital) and debt (borrowed capital), as shown in Figure 1 above. In order for the assets to generate income they need to be farmed and managed, which involves incurring costs. The amount of growth is dependent on the maximisation of income and minimisation of costs, or cost efficiency relative to income generation.

The method is also shown using the state average results in Figure 2. Production and economic data are identified to indicate how the terms are calculated and how they all fit together.

Gross farm income

The farming business generates a total income which can be income from milk cash income (net), livestock trading profit, feed inventory change or other sources such as milk share dividends. The main source of income is, from milk, and is calculated simply by multiplying price received per unit by the number of units. For example dollars per kilogram milk solids multiplied by kilograms of milk solids. Subtracting certain costs from total income gives different profitability measures.

Variable costs

Variable costs are costs that are specific to an enterprise, such as herd, shed and feed costs, and vary directly in relation to the size of the enterprise. Subtracting variable costs from total income, only for the dairy enterprise, gives a gross margin. Gross margins are a common method for comparing between similar enterprises and are commonly used in broad acre cropping and livestock enterprises. Gross margins are not generally referred to in economic analysis of dairy farming businesses.

Overhead costs

Overhead costs are costs that are not directly related to an enterprise as they are expenses incurred through the general operating of the business. The DFMP separates overheads into cash overheads and non-cash overheads, to distinguish between cash flows of the business. Cash overheads are those fixed costs such as rates, insurance, and repairs and maintenance. Non cash overheads include costs that are not actual cash receipts or expenditure; for example the amount of depreciation on a piece of equipment. Imputed operator's allowance for labour and management is also a non-cash overhead that must be costed and deducted from income if a realistic estimate of costs, profit and the return on the capital of the business is to be obtained.

Earnings before interest and tax

Earnings before interest and tax (EBIT) are calculated by subtracting variable and overhead costs from gross farm income. EBIT is sometimes referred to as operating profit and is the return from all the capital used in the business.

Net farm income

Net farm income is EBIT minus interest and lease costs and is the reward to the farmer's own capital. Interest and lease costs are viewed as financing expenses, either for borrowed money or leased land that is being utilised.

Net farm income is then used to pay tax and what is left over is business profit (after tax) or surplus and therefore growth, as it can be invested into the business to expand the equity base; either by direct reinvestment or the payment of debt.

Return on assets and return on equity

Two commonly used economic indicators of whole farm performance are return on assets and return on equity. They measure the return to their respective capital base.

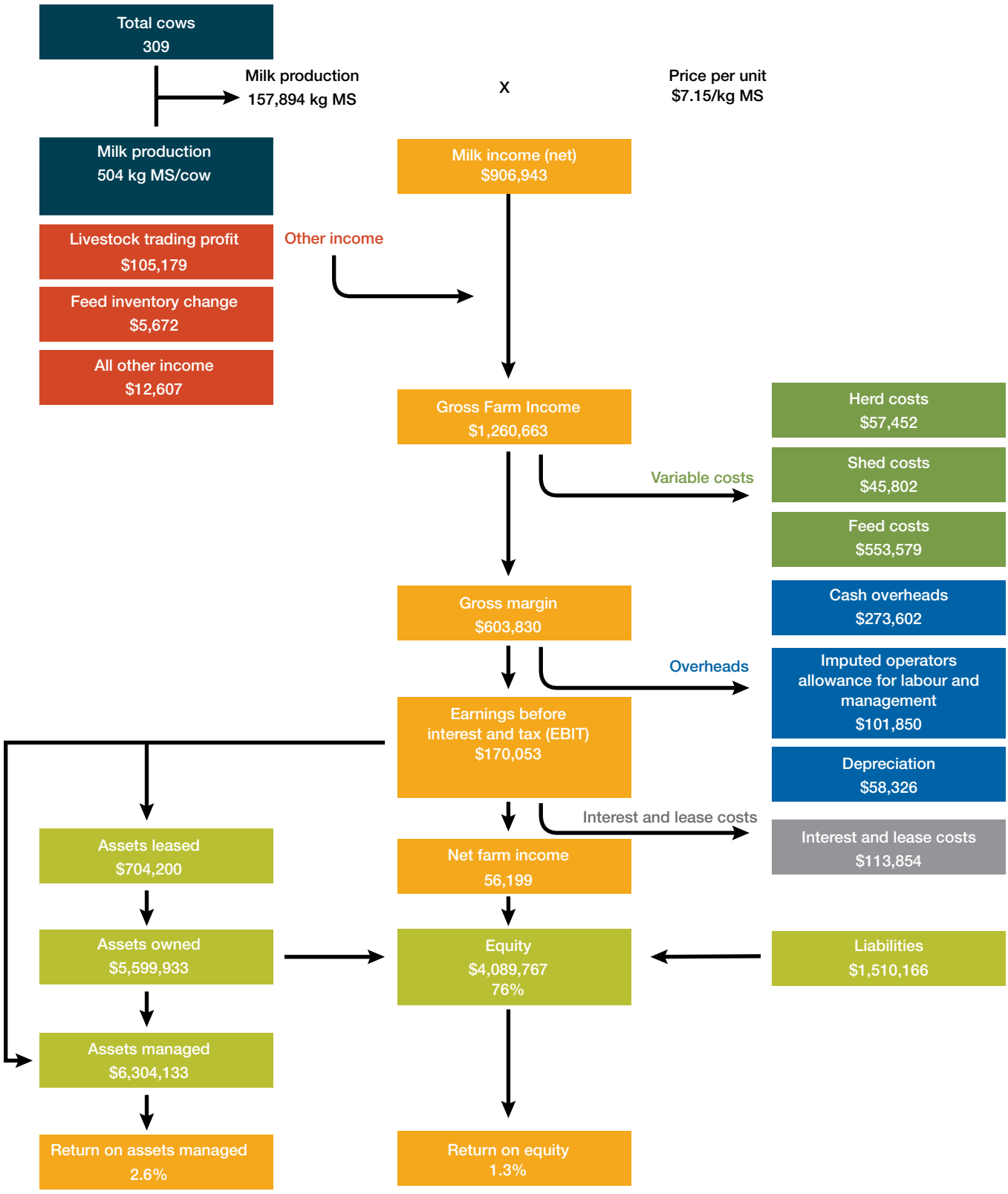
Return on assets indicates the overall earning of the total farm assets, irrespective of capital structure of the business. It is EBIT or operating profit expressed as a percentage of the total assets under management in the farm business, including the value of leased assets. EBIT expressed as a return on total assets is the return from farming. There is also a further return to the asset from any increase in the value of the assets over the year, such as land value. If land value goes up 5% over the year, this is added to the return from farming to give total return to the investment. This return to total assets can be compared with the performance of alternative investments with similar risk in the economy.

In 2013/14 return on assets is the final financial measure used to gauge the profitability of a farming business. Return on asset enables a complete assessment to be made of individual and between different farming businesses as it ignores how the operation is financed while also accounting for the difference in the productive capacity of land in different areas and regions.

In Figure 1 total assets are visually represented by debt and equity. The debt:equity ratio, or equity per cent of total capital varies depending on the detail of individual farm business and the situation of the owners, including their attitude towards risk.

Return on equity measures the owner's rate of return on their own capital investment in the business. It is net profit expressed as a percentage of total equity (one's own capital). The Dairy Farm Monitor Project reports return on equity with and without capital appreciation. This is to distinguish between productivity gains (return on equity without capital appreciation) and capital gains (return on equity with capital appreciation).

Figure 2: Dairy Farm Monitor Project Method profit map—NSW state average data



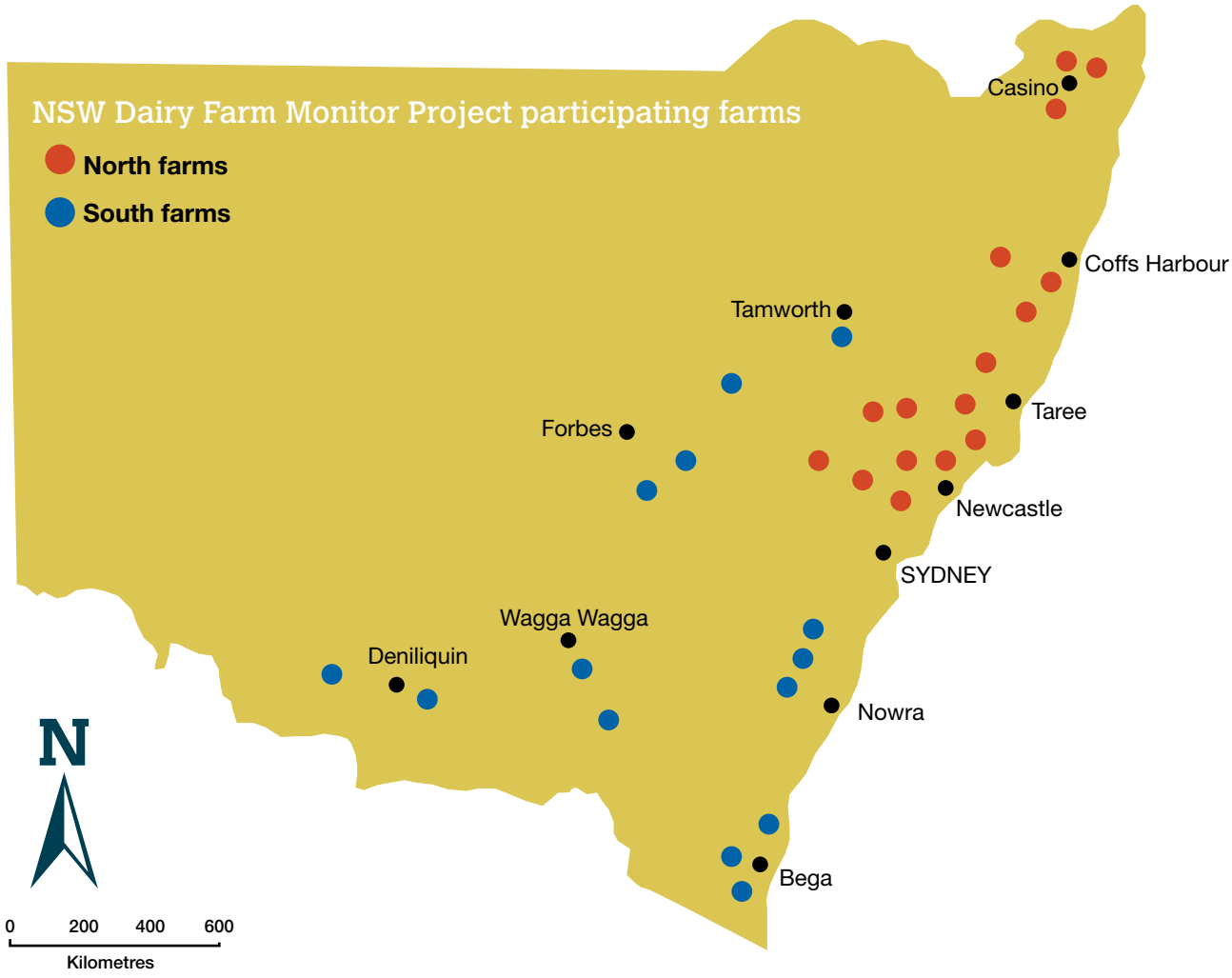
Part One: Statewide overview

Statewide overview

This section of the report compares the average performance, for a range of physical and financial indicators for all participant farms across New South Wales, with the averages from the North and South regions reported.

Farms in the North region range in location from the Queensland border to the Hunter Valley along the coast and hinterland, and west to the Tamworth region. They are generally characterised as having moderate to high rainfall, limited irrigation, a kikuyu / annual ryegrass pasture base with some use of summer forage crops. The Southern group includes farms along the coast from Sydney to Bega, and farms from the inland river systems of NSW, including the Central West and Riverina regions. They are generally characterised by lower rainfall, mainly irrigated perennial and annual pastures, some cropping, larger herds and farm size. This grouping reflects general similarities among farm systems, and the influences on milk pricing across NSW. The approximate locations of the participating farms are shown in Figure 3.

Figure 3: Distribution of participant farms across NSW



2013/14 Seasonal conditions

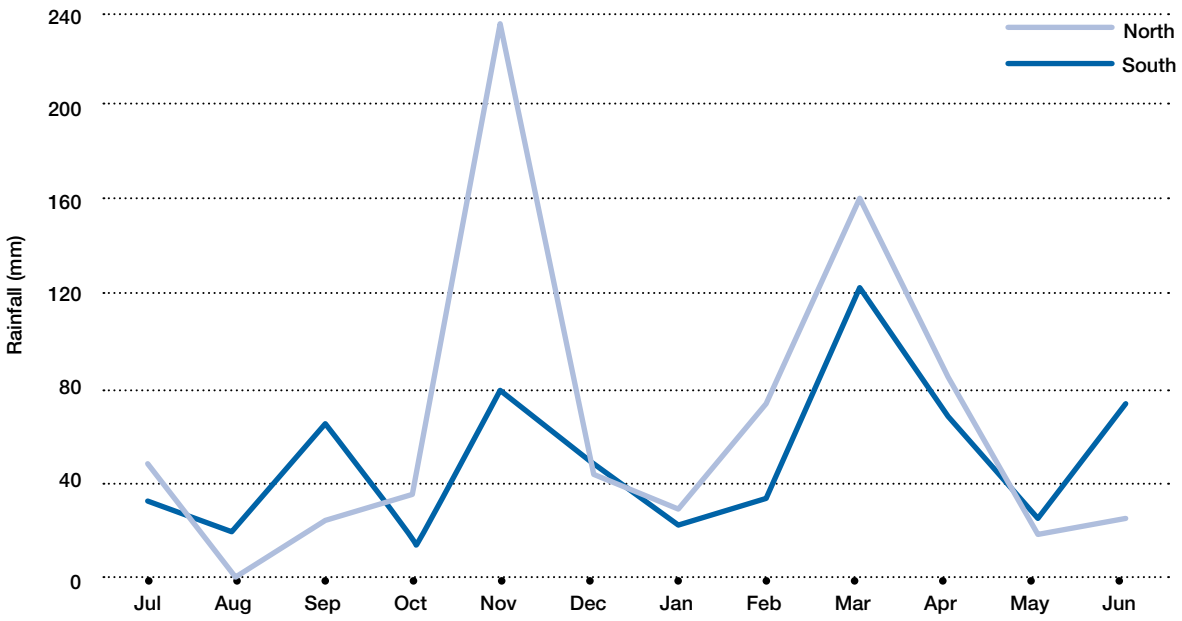
Seasonal conditions in NSW during 2013/14 were drier and warmer than average, particularly in the northern half of the state. A number of regions recorded their driest summer on record, with recorded rainfall 25% below the long term state average, and record high temperatures were experienced in November.

There were two significant rainfall events in November 2013 and March 2014 which allowed some respite from the dry conditions. Pasture growth was affected, and hay and grain prices rose with a shortage of supply and higher demand for purchased fodder.

The regional chapters provide more detail on the 2013/14 seasonal conditions.

Figure 4 shows the rainfall pattern during the year.

Figure 4: 2013/14 monthly rainfall



Whole farm analysis

There is a large range in farm sizes and herd sizes across the 30 farmers participating, so caution is advised when interpreting the averages.

Table 1 presents the average of some farm characteristics for each region. Further details on the physical parameters for each farm can be found in Appendix Tables 2 for each region.

Rainfall in the North was on average 30% below the long term average, and 11% below in the South, and total water use per hectare reflected the drier year in the both regions.

Farms in the South were generally larger in herd size and farm size than in the North, and produced more milk solids per cow. However, the slightly higher stocking rates and smaller farm size saw milk sold per hectare higher in the North.

The South recorded higher average labour efficiency than the North both in number of cows milked and milk solids produced per labour unit.

Table 1: Average farm physical data—state overview

Farm physical parameters	Statewide	North	South
Number of farms in sample	30	16	14
Herd size (max no. cows milked for at least 3 months)	309	272	350
Annual rainfall 13/14	703	783	612
Water used (irrigation + rainfall) (mm/ha)	876	974	765
Total usable area (hectares)	301	231	381
Stocking rate (milking cows per usable hectare)	1.1	1.2	1.0
Milk solids sold (kg MS/cow)	504	471	541
Milk solids sold (kg MS/ha)	569	590	546
Milk price received ($/kg MS)	$7.15	$7.17	$7.12
Labour efficiency (milking cows/FTE)	74	72	77
Labour efficiency (kg MS/FTE)	37,461	34,022	41,392

Figure 5 provides a visual representation of the average farm financial performance. The blue colours represent income per hectare added vertically to give gross income. From gross income, we can subtract the green variable costs, to give the grey gross margin values. From the gross margin we subtract the red/orange overhead costs to give us the yellow earnings before interest & tax. The legend for Figure 5 and the values for category can be found in Table 2.

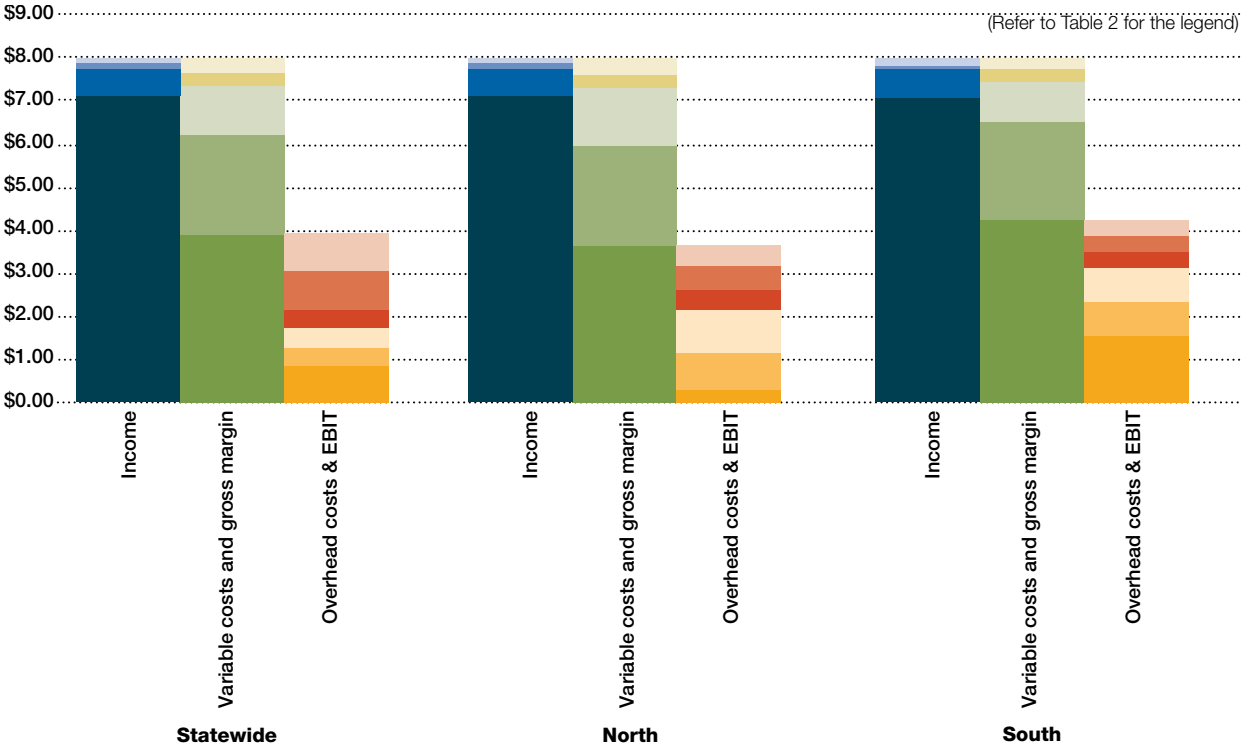
Gross farm income

Gross income includes all farm income, whether that is income from milk sales, a change in inventories of stock or feed, or cash income from livestock trading. Income from sources such as farm owned shares, interest from bank accounts and rebates or grants is included in other income.

There was very little variation in gross income per kilogram of milk solids between the two regions, with state milk price averaging $7.15 /Kg MS (52 c/l). This resulted from an average regional milk price of $7.17 /kg MS in the North and $7.12 /kg MS in the South, and other income of $0.84 and $0.87 / kg MS respectively.

However this represents an 18% increase over last year for the South farms, and only a 5% increase in the North. While Figure 5 shows just how much milk income dominates gross income overall, other sources are still important to the farm business. Across the state, income from sources other than milk accounted for 10% of gross farm income.

Figure 5: Average farm financial performance per kilogram milk solids



Variable costs

Variable costs are costs directly associated with production. Examples include animal health, pasture and fodder growing costs, contract services, supplementary feeding, agistment and milking shed costs. Figure 5 shows the large proportion of costs contributed by purchased feed and agistment (seen as dark green). Home grown feed was the other major variable cost.

The total cost of feed accounted for 49% of the total cost of production; and 85% of total variable costs in both regions. See Appendix Tables 6 for a breakdown of variable costs as a percentage of total costs in each region. Table 2 shows that participants in the North had higher average variable costs per kilogram of milk solids than those in the South. The North farmers had higher home grown feed costs and purchased feed costs per kilogram of milk solids than the South, reflecting the drier season.

The gross margin is equal to gross income minus total variable costs. While commonly used to compare enterprises that can use a similar capital structure like sheep or beef, gross margin can be a useful measure in dairy to analyse changes on farm that don't require capital investment. The statewide average gross margin for 2103/14 was $3.94 /kg MS (28.6 c/l), which is a 15% increase from $3.42 / kg MS (24.7 c/l) last year.

Overhead costs

Overhead costs or 'fixed costs' are relatively unresponsive to small changes in the scale of operation of a business. Examples include labour, depreciation, administration, repairs and maintenance and the cost of people's time. Imputed labour cost is an estimate of the cost of the time spent in the business by people with a share in the business such as the owner, the owner's family or a sharefarmer that owns assets in the business. The imputed labour cost is calculated as $25 per hour of imputed labour performed by either the owner operator or family members.

The North farms tended to have higher labour costs, both employed and imputed than the South. Total labour costs were $1.88/kg MS (14 c/l) in the North compared to $1.60/kg MS (12 c/l) in the South.

Table 2: Average farm financial performance per kilogram milk solids—NSW

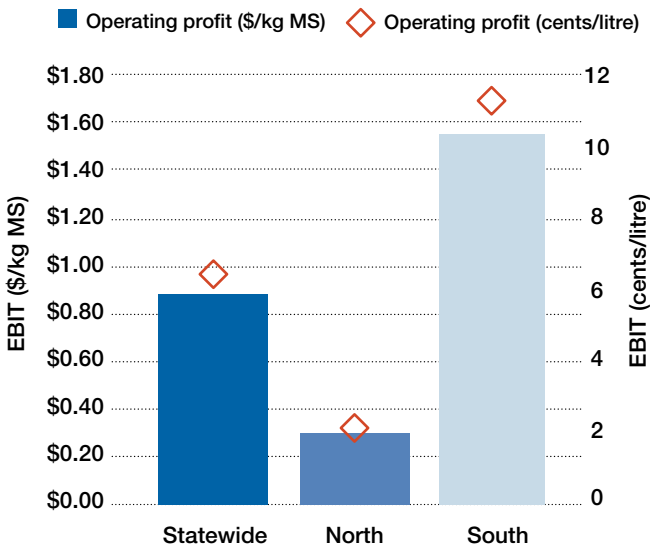
Farm income and cost category	Statewide		North		South	
Income	Kg MS	c/l	Kg MS	c/l	Kg MS	c/l
Feed inventory change	$0.08	0.6	$0.05	0.4	$0.12	0.9
Other farm income	$0.12	0.8	$0.17	1.2	$0.06	0.4
Livestock trading profit	$0.65	4.7	$0.62	4.5	$0.69	4.9
Milk income (net)	$7.15	51.9	$7.17	52.1	$7.12	51.7
Total income	**$8.00**	**58.0**	**$8.01**	**58.1**	**$7.98**	**58.0**
Variable costs						
Shed cost	$0.30	2.2	$0.37	2.7	$0.21	1.5
Herd cost	$0.31	2.2	$0.30	2.2	$0.32	2.3
Home grown feed cost	$1.15	8.4	$1.36	9.9	$0.92	6.7
Purchased feed and agistment	$2.30	16.7	$2.32	16.8	$2.28	16.5
Total variable costs	**$4.06**	**29.4**	**$4.35**	**31.6**	**$3.73**	**27.0**
Gross margin						
per kilogram of milk solids	$3.94	28.6	$3.66	26.6	$4.25	31.0
Overhead costs						
All other overheads	$0.40	2.9	$0.45	3.2	$0.35	2.5
Repairs and maintenance	$0.49	3.5	$0.58	4.2	$0.39	2.8
Depreciation	$0.40	2.9	$0.45	3.3	$0.35	2.6
Employed labour	$0.90	6.5	$0.99	7.1	$0.80	5.8
Imputed labour	$0.85	6.3	$0.89	6.6	$0.80	5.8
Total overhead costs	**$3.05**	**22.2**	**$3.36**	**24.4**	**$2.69**	**19.5**
Earnings before interest and tax						
per kilogram of milk solids	$0.89	6.5	$0.29	2.1	$1.57	11.4

Earnings before interest and tax

Earnings before interest and tax (EBIT) are the gross farm income, less variable costs and overhead costs including non-cash costs. As this figure excludes tax and interest and lease costs, it can be used to analyse the operational efficiency of the whole farm business.

Average EBIT for the state was $0.89 per kilogram of milk solids (Figure 6) or 6.5 c/l which is a 75 % increase on last year. The statewide average EBIT last year was $0.51 /kg MS (4 c/l). The improvement on last year was more significant in the South, increasing from $0.81 to $1.57, while the North had only a small increase from $0.22 to $0.29/ kg MS.

Figure 6: Average earnings before interest & tax per kilogram of milk solids sold



Return on assets and equity

The return on assets is the earnings before interest & tax expressed as a percentage of total farm assets under management and hence is an indicator of the earning power of total assets, irrespective of capital structure. Similarly, it can be considered as an indicator of the overall efficiency of use of the resources that are involved in this production system and not elsewhere in the economy.

The average return on assets for participants across the state was 2.6%, which was higher than last year's figure of 1.7%, and ranged from -2.5% to 12.2% (Figure 7 and Appendix Tables 1). Twenty four of the 30 participant farms recorded a positive EBIT and ROA, while the remaining six farms reported a return on assets of between zero and -2.5 per cent.

The market value of land varied widely across the 30 farms in the group, according to location and land capability. Values for livestock and permanent water rights have been standardised across all farms at market value.

Return on equity is the net farm income (earnings before interest and tax less interest and lease charges) expressed as a percentage of owner equity. Items not accounted for in net farm income are capital expenditure, principle loan repayments and tax. Return on equity is a measure of the owner's rate of return on their investment.

Figure 8 shows the range of farms based on return on equity. The average return on equity for the 30 farms during 2013/14 was 1.3%, with a range from -8.6% to 15%. Ten of the 30 farms in the sample recorded negative returns on equity and nine of these were farms in the North region.

Further discussion of return on assets and return on equity occur in the risk section below and later in the regional chapters. Appendix Tables 1 present all the return on assets and return on equity for the individual farms.

Figure 7: Distribution of farms by return on assets

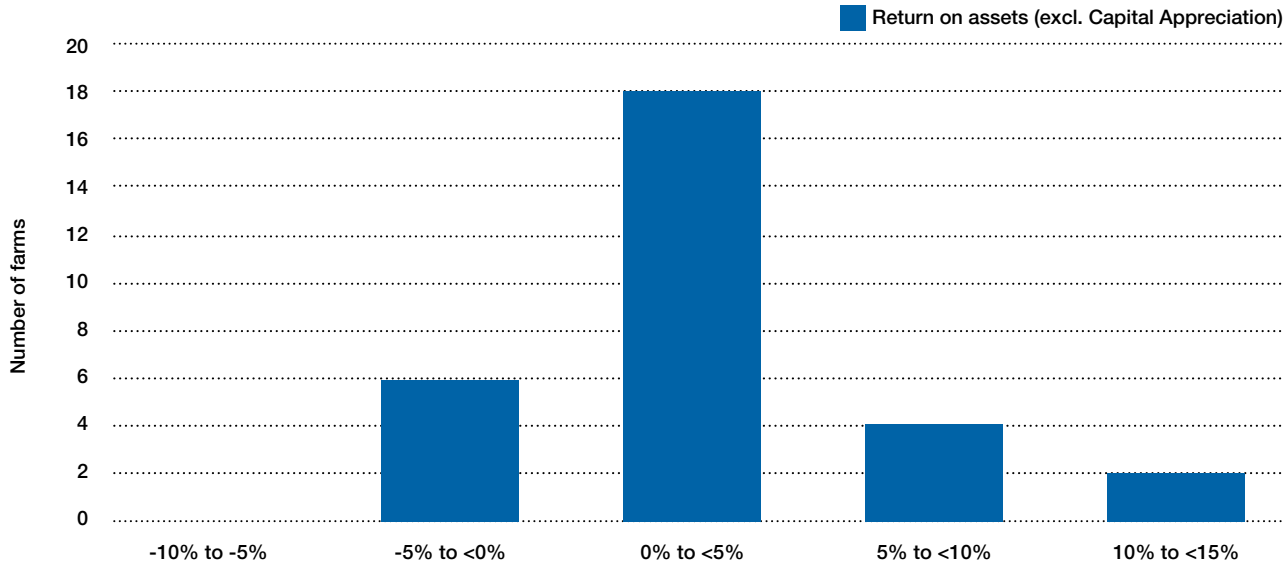
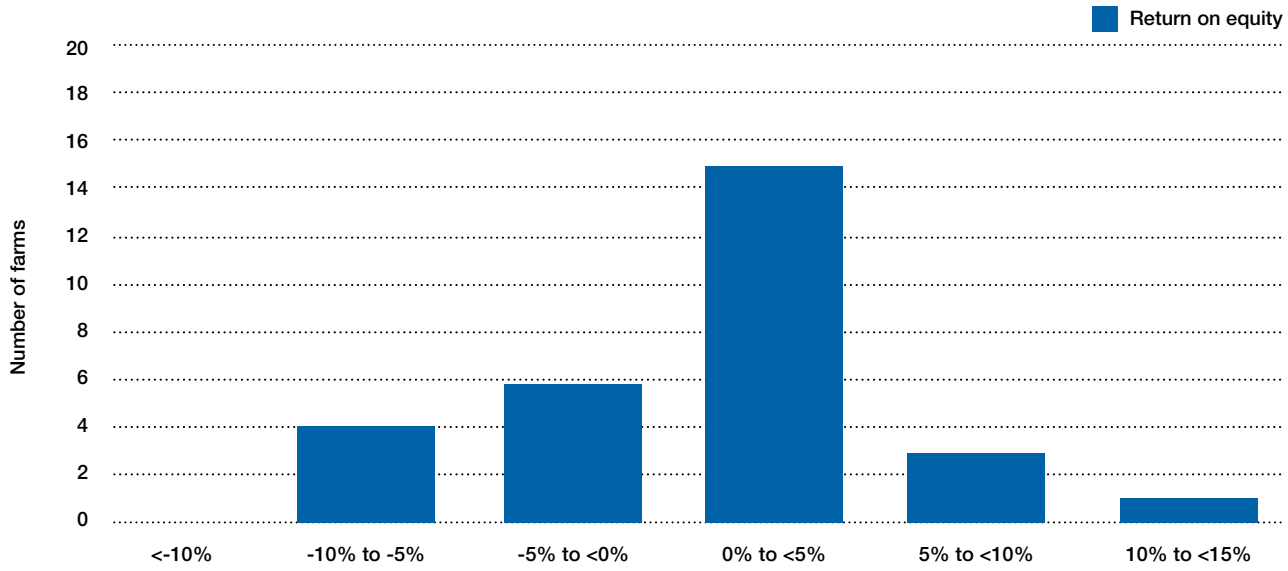


Figure 8: Distribution of farms by return on equity



Risk

"Risk is conventionally classified into two types: business risk and financial risk. Business risk is the risk any business faces regardless of how it is financed. It comes from production and price risk, uncertainty and variability. 'Business risk' refers to variable yields of crops, reproduction rates, disease outbreaks, climatic variability, unexpected changes in markets and prices, fluctuations in inflation and interest rates, and personal mishap…. 'Financial risk' derives from the proportion of other people's money that is used in the business relative to the proportion of owner-operator's capital…"[2]

Table 3 presents some common risk indicators. Refer to Appendix E for the definition of terms used in Table 3. The indicators in Table 3 can also be found in Appendix Tables 1, 3 and 8 for each region.

Exposure to risk in business is entirely rational if not unavoidable. It is through managing risk that greater profits can be made. It is also the case that by accepting a level of risk in one area of business, a greater risk in another area can be avoided. With the example of feed sources, dairy farmers are generally better at dairy farming than they are at grain production. By allowing someone who is experienced in producing grain to supply them, they lessen the production and other business risks as well as the financial risks they would have exposed themselves to by including extensive cropping in their business. The trade-off is that they are exposed to price and supply risks, which historically have been lower.

The trade-off between perceived risk and expected profitability will dictate the level of risk the individual is willing to take. Often in response to greater perceived risk, farmers will opt to expose their business to less risk. In good times this will result in lower returns, in bad times it will lessen the losses.

All farms in the project rely on imported feed for at least one third of the herd's feed requirement, and are therefore somewhat exposed to fluctuations in prices and supply in the feed market.

Equity levels across the farms remain similar to last year at 76%.

The cost structure ratio provides variable costs as a proportion of total costs. A lower ratio implies that overhead costs comprised a greater proportion of total costs which in turn indicates less flexibility in the business. Table 3 shows that across the state for every $1.00 spent, $0.57 is used to cover variable costs. One minus this ratio gives the proportion of total costs that are overhead costs.

The debt services ratio shows interest and lease costs, as a proportion of gross income. The ratio of 7.8% this year is slightly lower than the 8% last year, and indicates that on average farms repaid $0.08 of every dollar of gross income to their creditors.

The benefit of taking some risks and borrowing money can be seen when farm incomes yield a higher return on equity than on their return on assets. This year there were eight farms where return on equity was greater than return on assets, compared to just two last year. Debt levels have increased from last year, with average debt per cow rising from $3,842 / cow to $4,413 /cow in 2013/14. This is more pronounced in the North region.

The data in Appendix Tables 4 and 5 are in cost per kilograms of milk solids sold and can be used as a risk indicator, given it is measured against the product produced and sold currently and not the capital invested.

Table 3: Risk indicators—statewide

	Statewide	North	South
Cost structure (proportion of total costs that are variable costs)	57%	57%	58%
Debt services ratio (percentage of income as finance costs)	7.8%	8.0%	7.6%
Debt per cow	$4,413	$3,948	$4,945
Equity percentage (ownership of total assets managed)	76%	79%	72%
Percentage of feed imported (as a % of total ME)	42%	39%	46%

2. Malcolm, L.R., Makeham, J.P. and Wright, V. (2005), The Farming Game, Agricultural Management and Marketing, Cambridge University Press, New York. p180

Physical measures

Feed consumption

Figure 9 presents the contribution of different feed sources to the total metabolisable energy (ME) consumed on the farm. This includes feed consumed by dry cows and young stock.

Grazed pasture is the major component of the cow's diet in all regions however the dependence on supplements can also be seen. In both the North and South grazed pasture made up almost 50% of the diet. Conserved feed accounts for around 15% of the diet, with more silage fed in the North and more hay fed in the South. Both regions are dependent on concentrates with average proportion of ME sourced from concentrates at around 35% of the diet.

Appendix Tables 3 give further information on purchased feed.

Figure 9: Sources of whole farm metabolisable energy

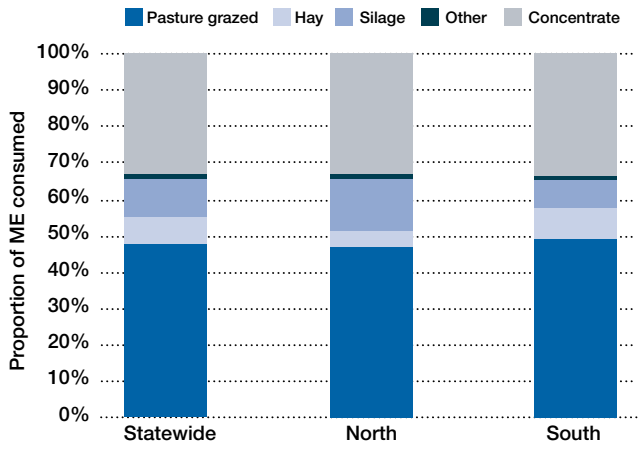


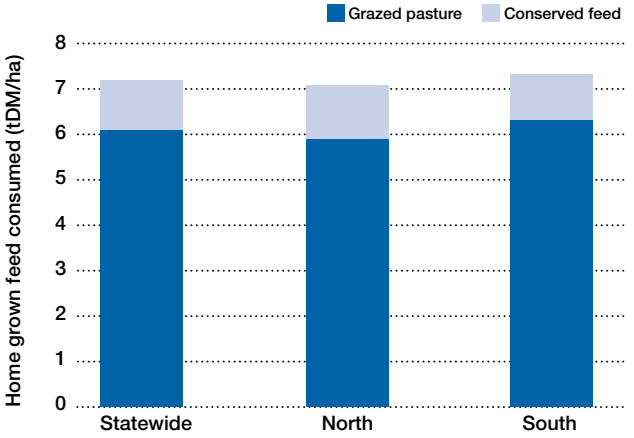
Figure 10 shows the average estimated home grown feed consumed per milking hectare. Both Figures 9 and 10 were estimated using the Victorian DEPI's Pasture Consumption calculator. It involves first a calculation of the total energy required on the farm, which is a factor of stock numbers held on the farm, the stock weights, distance the stock walks to the dairy on average and also milk production. From the total energy requirements for the farm over the year, the energy imported to the farm as feed is subtracted. This leaves the estimate for total energy produced on farm, which is then divided into grazed and conserved feed depending on the amount of fodder production recorded.

The amount of home grown feed consumed per milking hectare will be dependent on numerous factors, with water availability, fertiliser application rates and grazing management being central. The average estimates were, as grazed feed and conserved feed, 5.9 t DM/ha & 1.2 t DM/ha for the North and 6.3 t/ha & 1.0 t/ha for the South. This was lower in both regions than the previous year and is a reflection of the dry spring and summer in many regions.

Appendix Table 2 gives estimates of individual tonnes of home grown feed consumed per milking hectare. The graph below accounts only for the consumption of pasture that occurred on the milking area whether by milking, dry or young stock.

Several of the farms in the project grow fodder crops for silage or grain on the non-milking area. These tonnages are calculated as part of the total feed produced on the farm usable area, but may not be captured as home grown feed on the milking area. So some farms may appear as low consumers of pasture, but may also grow and consume large tonnages of fodder over the whole farm.

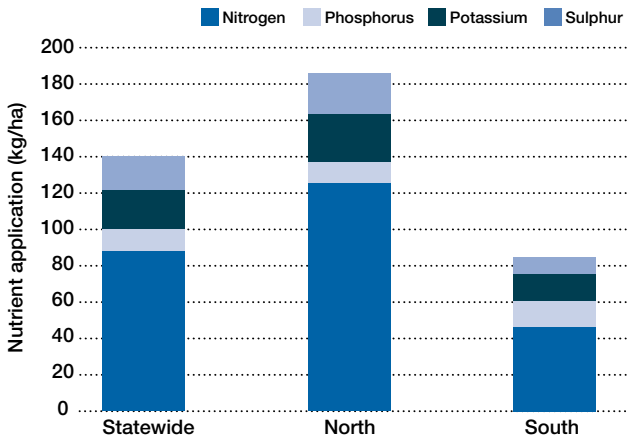
Figure 10: Estimated tonnes of home grown feed consumed per milking hectare



Fertiliser application

Figure 11 shows the amount of the macro nutrients applied per hectare as fertiliser over the year. Figure 10 and 11 do not necessarily show a strong relationship between estimated home grown feed produced and fertiliser applied per hectare. Figure 10 is based on the milking area only, whereas Figure 11 refers to nutrients applied over the whole farm usable area. It should also be noted however that water availability, pasture species, soil type, pasture management, seasonal variation in response rates to fertilisers, variations in long-term fertiliser strategies plus other factors will all influence pasture growth and fertiliser application strategies. Appendix Tables 2 give further information on fertiliser application.

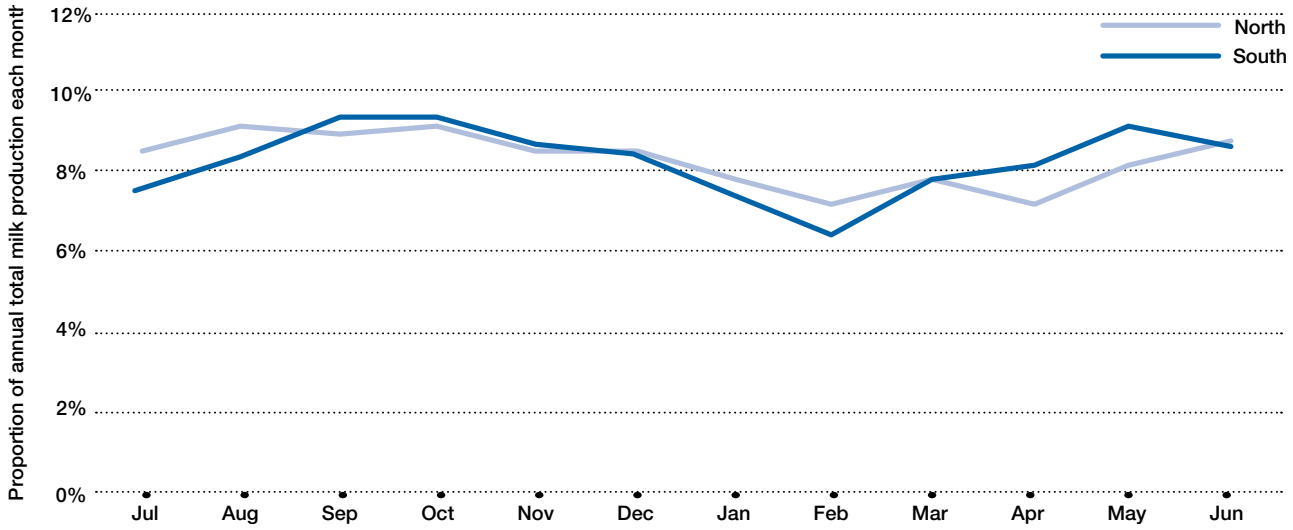
Figure 11: Nutrient application per hectare on usable area



Milk production

Average distribution of monthly milk production across all regions of NSW reflects the trend towards a flatter milk supply required by processors for the liquid milk market. While production is very similar for most of the year it can be seen that this year farms in the South produced more of their milk in the autumn period than farms in the North.

Figure 12: Monthly distribution of milk production

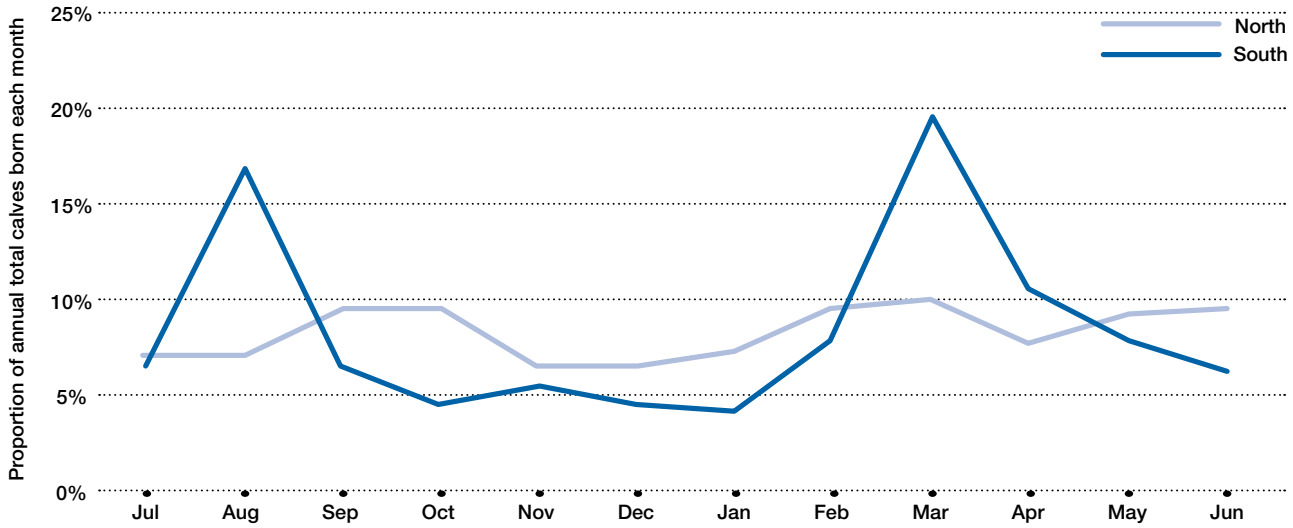


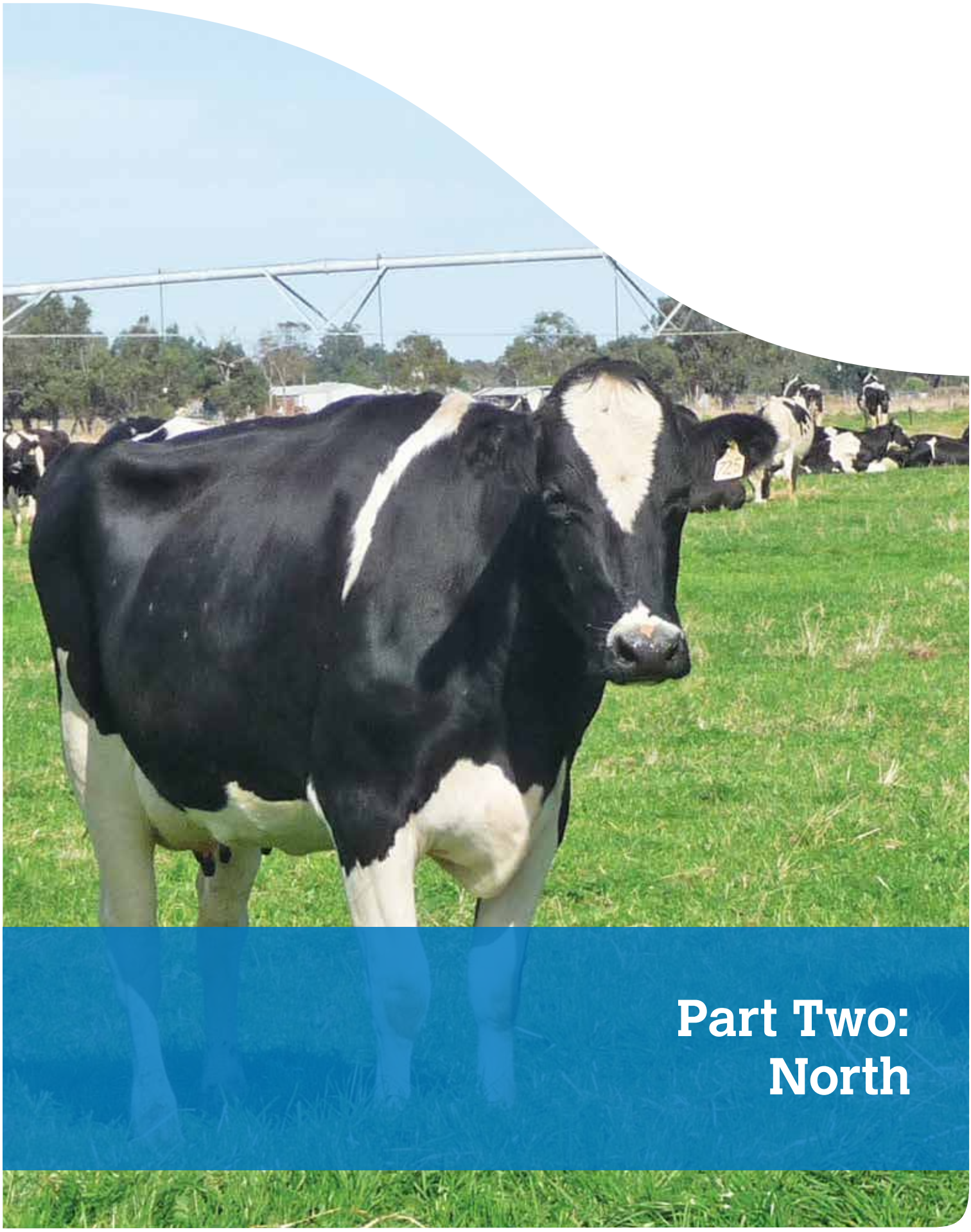
Calving pattern

In order to achieve the milk production curve shown in Figure 12 above, cows need to be calving all year round, and this is evident in the graph of monthly calving pattern in Figure 13, especially for the North farms. The South farms this year show more of a batch calving trend, with two peak calving periods in spring and autumn.

Calving occurs throughout the hotter summer months in both regions, although in the South this is reduced to around 5% of the annual total of calves born in each of the summer months.

Figure 13: Monthly distribution of calves born in 2013/14





Part Two: North

2013/14 Seasonal conditions

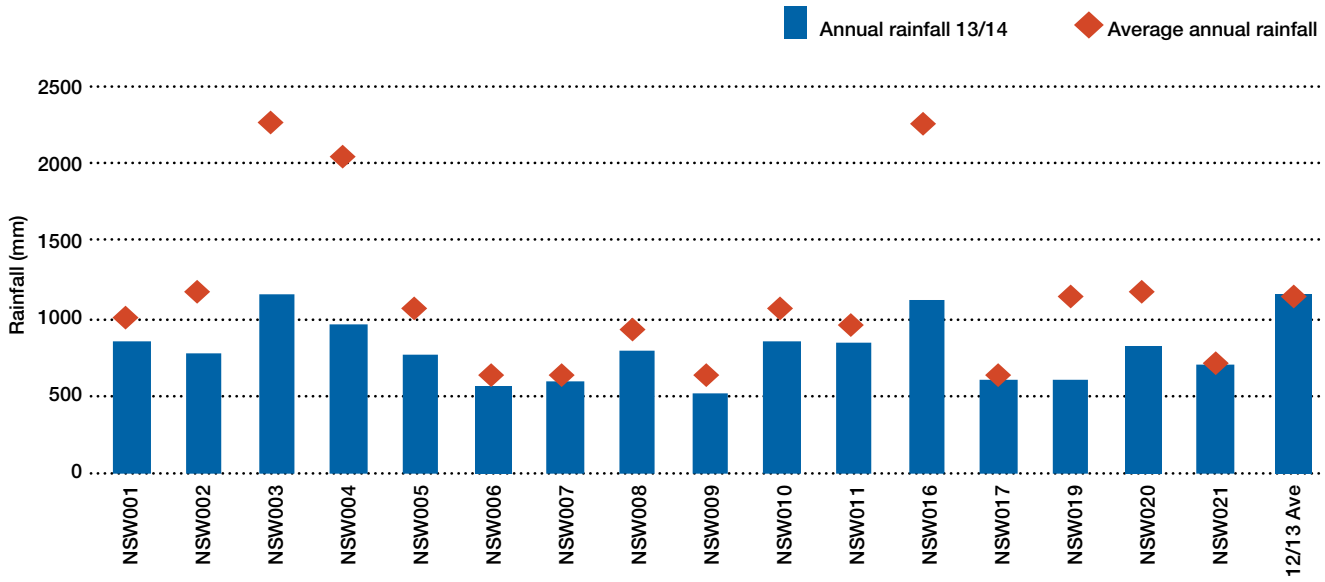
Seasonal conditions in the North of NSW made running a dairy business difficult for many farmers, with annual rainfall around 30% below long term averages. For the second year running the first half of the year in spring and summer 2013 was particularly dry, in some areas it was the driest summer on record. This led to limitations on pasture and forage growth, and the rapid depletion of fodder reserves. A significant and widespread rainfall event in November 2013 allowed for some respite and recovery of feed supply, but this was the last good rain received by many regions until March 2014.

Milk prices improved by 5% in the North in 2013/14, to average $7.17 /Kg MS (52.1 c/l).

Those farmers with irrigation and available water were less affected by the dry conditions; however the costs of pumping water and volumes used were higher. The grain harvest in northern NSW and Southern Queensland was affected by the dry conditions, pushing up grain prices over the previous year. The average cost of concentrates this year was $443 / t dry matter, up from $335 last year. North farmers also fed more purchased feed per milker at 2.3 t DM per head, compared to 1.8 t in the previous year.

Hay supplies were affected, with lower production and higher demand leading to higher prices for purchased hay. Some northern farmers had to source hay from much further distances in the southern parts of the state, pushing up freight costs.

Figure 14: 2013/14 annual rainfall and long term average rainfall—North



Please refer to page 3 from notes on the presentation of this data.

Farms NNSW 01 to 017 were included in the reports from last year or the year before, and farms NNSW019 to 021 are new to the North group this year.

Whole farm analysis

Key whole farm physical parameters for the North are presented below in Table 4. The Q1—Q3 range shows the band in which the middle 50% of farms for each parameter sit. The top 25% refers to the top four farms in the North group based on return on assets.

The physical parameters of the top 25% of farms (ranked by return on assets) mostly lie within the middle 50% of the North dataset for all physical parameters, except for farm size and people efficiency measures.

Table 4: Farm physical data—North

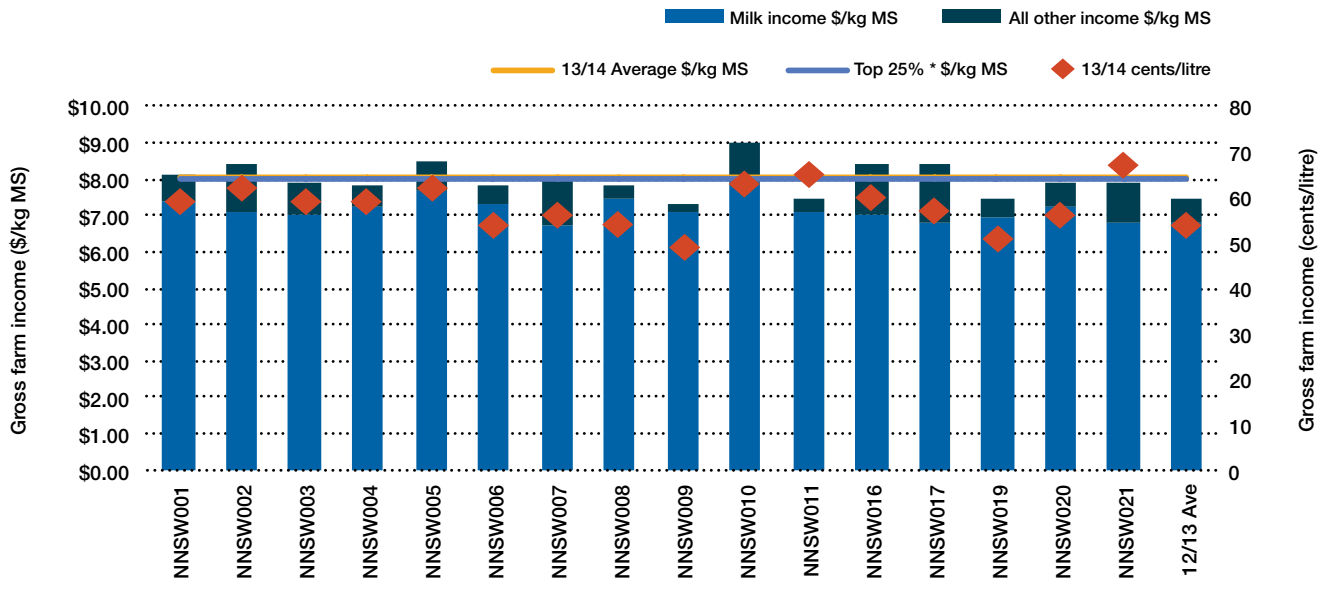
Farm physical parameters	North average	Q1 to Q3 range	Top 25% average
Annual rainfall 2013/14	783	604–844	714
Water used (irrigation + rainfall) (mm/ha)	974	867–984	1,033
Total usable area (Hectares)	231	138–294	336
Milking cows per usable hectares	1.2	0.9–1.6	1.2
Milk sold (kg MS /cow)	471	412– 521	518
Milk sold (kg MS /ha)	590	438–804	622
Home grown feed as % of ME consumed	61%	55–70	58%
Labour efficiency (milking cows / FTE)	72	64–73	84
Labour efficiency (kg MS / FTE)	34,022	29,461–36,580	43,841

Gross farm income

Gross farm income includes all farm income, whether that is income from milk sales, changes in inventories of stock or feed, or cash income from livestock trading. The average gross farm income of $8.01 /Kg MS includes milk income of $7.17 /kg MS (52 c/l) and all other income associated with the dairy business of $0.84 / kg MS (6 c/l). The top 25% recorded $8.00 /kg MS (58 c/l), the same as the group average, indicating that income is not the determining factor in higher operating profit.

Figure 15 shows the gross farm income for all the farms in in the North 2013/14, and the 2012/13 North average of $7.46 / kg MS. Livestock trading profit accounted for a large portion of the other farm income this year, indicating that a number of farms are rebuilding herd numbers after having to cull more heavily in the previous year of lower milk prices.

Figure 15: Gross farm income per kilogram milk solids—North

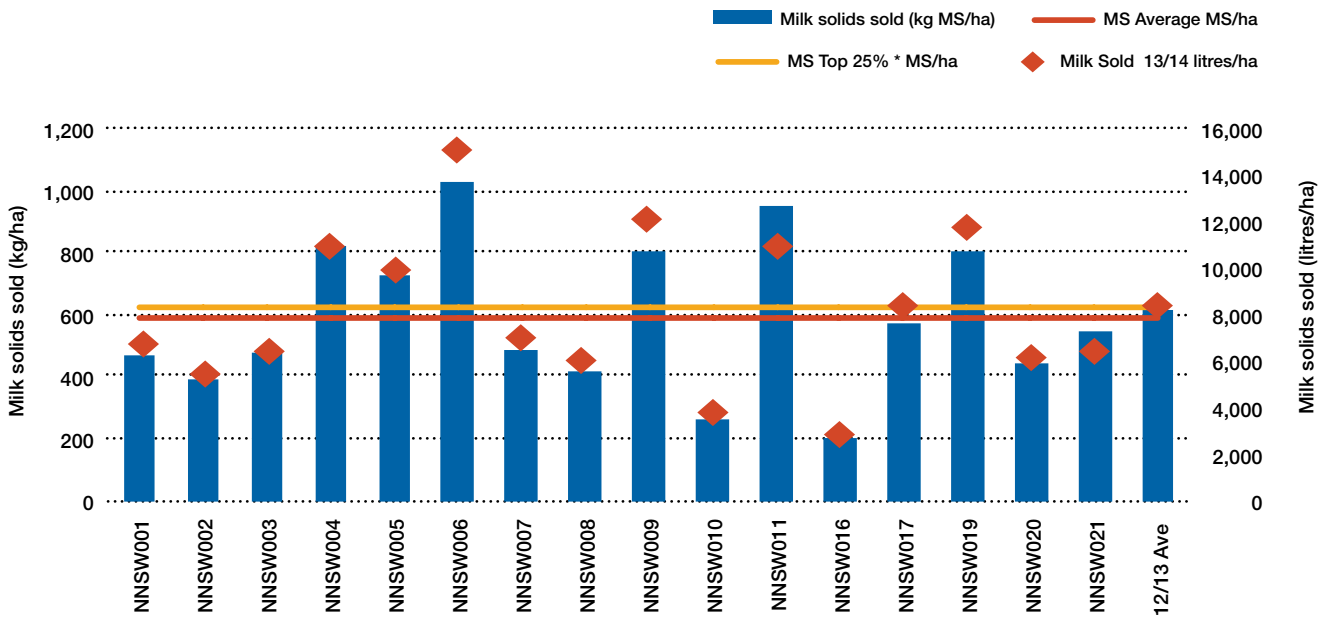


Milk solids production

Average milk production per hectare in 2013/14 of 590 kg MS/ha was lower than last year's average of 615 kg MS/ha. This year's average is shown by the red average line bar in Figure 16. The range of this year's dataset was 203 to 1,032 kg MS/ha.

The average of the top 25% group was also lower than last year's top 25% at 622 kg MS/ha, and slightly above the average of 590 kg MS/ha. However, only one of the farms in the top 25% group was above the average for this measure, suggesting the other three had other attributes which contributed to their performance.

Figure 16: Milk solids sold per hectare—North



Variable costs

The separation of variable and overhead costs per hectare is shown in Figure 28. Variable costs are those costs that change directly according to the amount of output, such as herd, shed and feed costs.

Average variable costs in 2013/14 were $4.35 /kg MS (31.5 c/l) with a wide range from $3.65–$5.23 (26 c/l to 37 c/l). Last year the average variable costs for the North group was $4.00 /kg MS (28.5 c/l).

The variation for Northern farms can be seen by the blue bars in Figure 17.

Feed costs are clearly the major variable cost, accounting for 46% of total costs. Average feed costs this year were $3.68 /kg MS (26.5 c/l) for the North, which is higher than last year's average of $3.34 (24 c/l). The price of the concentrate fed this year was higher than last year, at $443/t DM on average, with consumption of all purchased feed at 2.3 t DM / cow (range 0.8—5.0 t DM/cow).

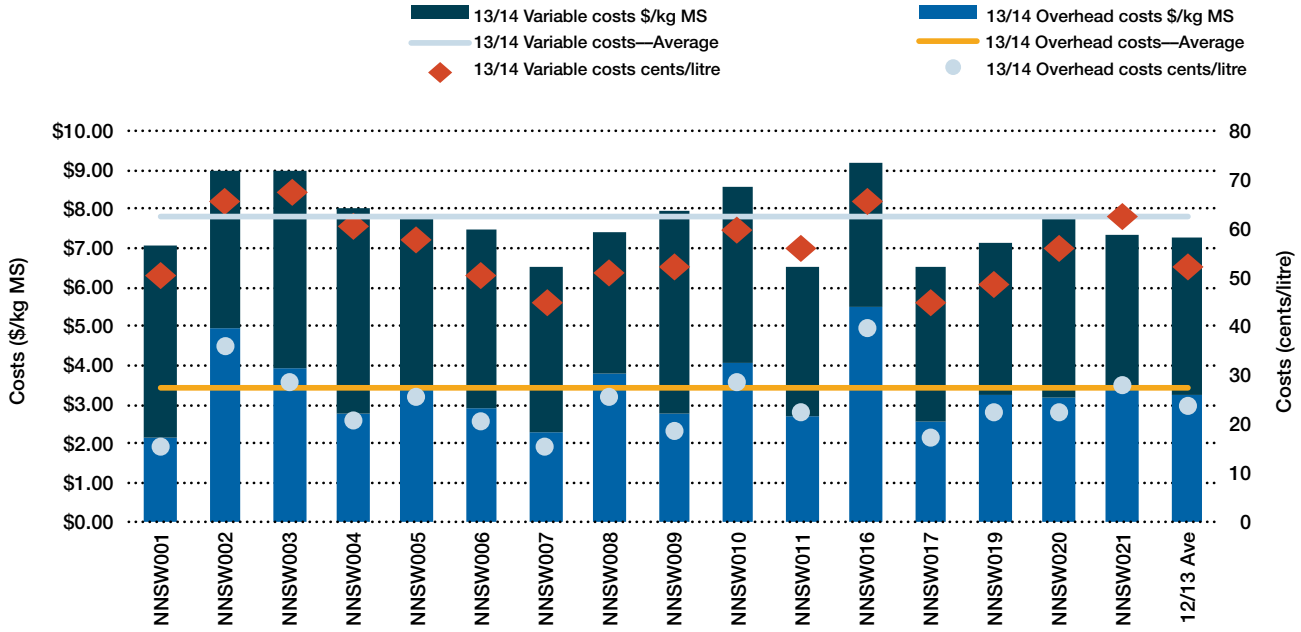
A breakdown of variable costs for the individual businesses on a $/kg MS basis can be seen in Appendix Table B4.

Overhead costs

Overhead costs are those that do not vary with the level of production and includes cash overheads such as paid labour, rates and insurance as well as non-cash costs such as imputed owner operator and family labour and depreciation of plant and equipment. Overhead costs were higher this year $3.36 / kg MS (24 c/l) on average in 2013/14. Figure 17 illustrates the range spent on overhead costs, which was from $2.19 to $5.50 /kg MS (16 c/l to 39 c/l) for farms in the North in 2013/14.

The main overhead cost category is labour, both employed and imputed; followed by depreciation and repairs and maintenance. Imputed labour for farm owners, family members and sharefarmers is valued at $25/hr for all hours worked. The percentage breakdown of the individual totals expressed as percentages is presented in Appendix Table B6.

Figure 17: Whole farm variable and overhead costs per kilogram milk solids—North



Cost of production

Cost of production gives an indication of the average cost of producing a kilogram of milk solids or a litre of milk. It is calculated as variable plus overhead costs and accounting for changes in fodder inventory and livestock trading losses or gains. Considering the changes in inventory is important to establish the true costs to the business. The changes in fodder inventory accounts for the net cost of feed from what was fed out, conserved, purchased and stored over the year. Livestock trading loss is also considered in cost of production where there is a net livestock depreciation or reduced stock numbers.

Table 5 shows that the average cost of production was $7.66 /kg MS (55 c/l), however the top 25% of farms were 18% lower at $6.45 /kg MS (49 c/l). The main difference is in much lower overhead costs in the top 25% farms.

Figure 17 and Table 5 present both variable and overhead costs to give the total cost of production per kilogram of milk solids sold. Cost of production expressed as per kilogram of milk solids sold is a useful risk ratio. The comparison of cost of production with gross income gives the average operating margin, i.e. EBIT/kg MS.

Table 5: Cost of production—North

Farm costs	North average		Q1 to Q3 range	Top 25% average	
	$/kg MS	c/l	$/kg MS	$/kg MS	c/l
Livestock trading loss	$0.00	0.0	$0–$0	$0.00	0.0
Feed inventory change	-$0.05	-0.5	$-0.18–$0.02	-$0.21	0.0
Changes in inventory ($ / kg MS)	-$0.05	-0.5	$-0.18–$0.02	-$0.21	0.0
Variable costs					
Herd costs	$0.30	2.2	$0.21–$0.39	$0.26	2.0
Shed costs	$0.37	2.7	$0.30–$0.41	$0.35	2.6
Purchased feed and agistment	$2.32	16.8	$1.85–$2.60	$2.61	19.1
Home grown feed cost	$1.36	9.9	$1.08–$1.73	$1.00	7.5
Total variable costs ($ / kg MS)	$4.35	31.6	$3.92–$4.74	$4.22	31.2
Overhead costs					
Rates	$0.05	0.4	$0.03–$0.07	$0.04	0.3
Registration and insurance	$0.04	0.3	$0.02–$0.06	$0.02	0.2
Farm insurance	$0.12	0.9	$0.07–$0.19	$0.13	1.0
Repairs and maintenance	$0.58	4.2	$0.43–$0.68	$0.36	2.6
Bank charges	$0.03	0.2	$0.01–$0.04	$0.02	0.1
Other overheads	$0.21	1.5	$0.13–$0.21	$0.19	1.4
Employed labour cost	$0.99	7.1	$0.46–$1.49	$0.46	3.4
Total cash overheads ($ / kg MS)	$2.02	14.5	$1.23–$2.83	$1.23	8.9
Depreciation	$0.45	3.3	$0.59–$1.16	$0.34	2.6
Imputed owner/operator and family labour	$0.89	6.6	$0.26–$0.57	$0.87	6.7
Total overhead costs ($ / kg MS)	$3.36	24.4	$2.76–$3.83	$2.44	18.2
Total cost of production ($ / kg MS)	$7.66	55.5	$6.98–$8.24	$6.45	49.4

Break-even price required

The break-even price required for milk is calculated as variable and overhead costs less income other than milk (including livestock trading profit, changes in feed inventory or other income). The difference between the break-even price required and milk income is earnings before interest and tax (EBIT) per kilogram of milk solids.

Figure 18 shows that the break-even price required varied from $4.93 per kg MS (35 c/l) to $8.16 per kg MS (58 c/l), with an average of $6.88 per kg MS (49 c/l).

The milk price received varied from $6.71 /kg MS (48 c/l) to $7.89 /kg MS (56 c/l), with an average of $7.17 / kg MS (52 c/l). The results highlight that in 2013/14, eleven out of the sixteen North farms recorded a positive EBIT.

Earnings before interest and tax

Earnings before interest and tax is gross income less variable and overhead costs.

Figure 19 shows the wide range in EBIT between farms, from minus $1.11 to $1.90 /kg MS (-8.2 c/l to 13 c/l).

Five of the 16 farms recorded negative EBIT, with the average recorded at $0.29 / kg MS (2 c/l). The top 25% recorded over twice the profit of the average at $0.67 /kg MS (5 c/l), mostly due to lower costs. Generally the farms with the highest EBIT also have the highest return on assets.

Figure 18: Break-even price required per kilogram of milk solids sold—North

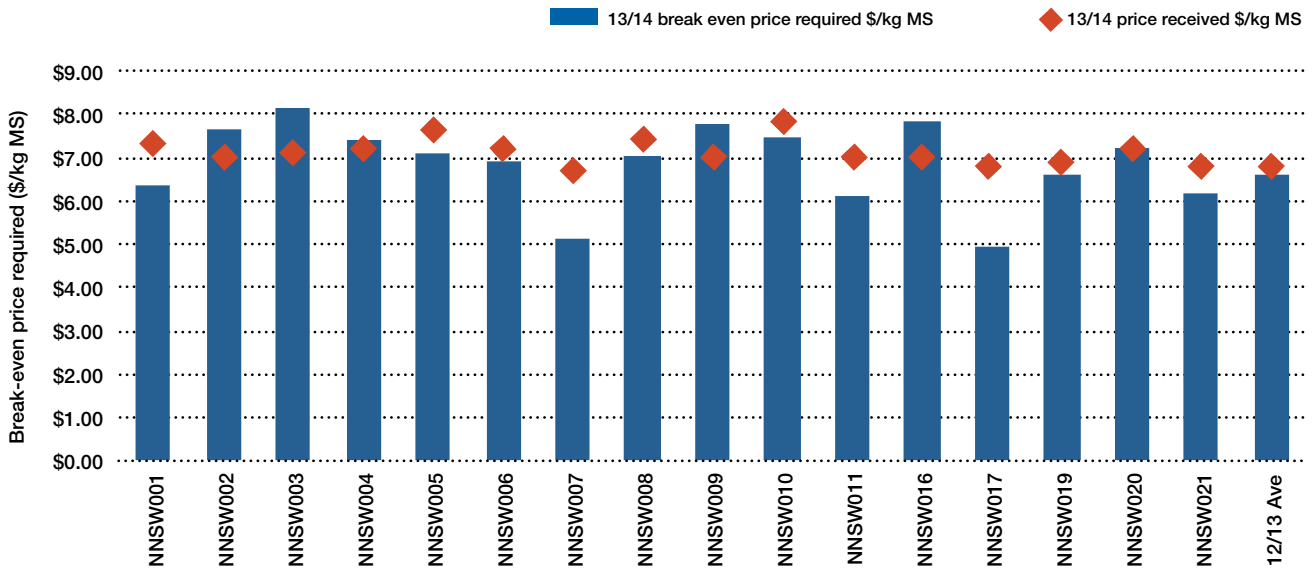
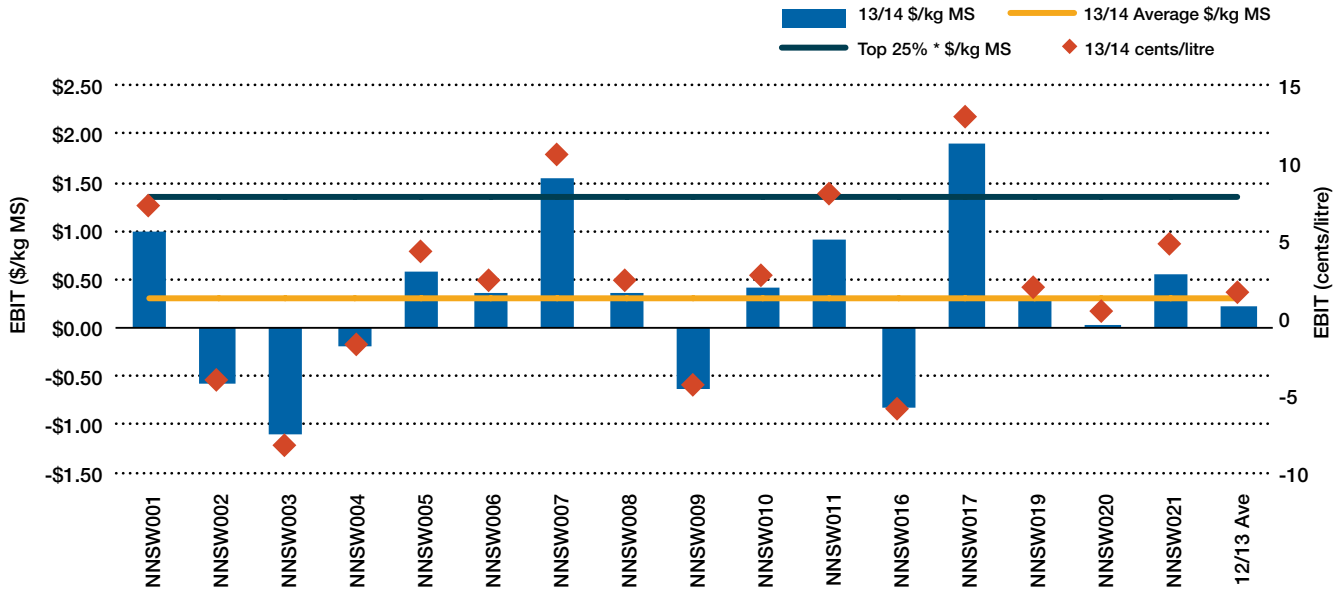


Figure 19: Whole farm earnings before interest & tax per kilogram milk solids—North



Return on assets and equity

Return on assets is the earnings before interest and tax expressed as a percentage of total assets. It is an indicator of the overall earning power of total assets, irrespective of capital structure. Return on equity is the net farm income expressed as a percentage of owner equity. It is a measure of the owner's rate of return on investment.

Figures 20 and 21 were calculated excluding capital appreciation. For return on equity including capital appreciation refer to Appendix Table B1.

Figure 20 shows the distribution of return on assets in 2013/14. The group achieved a low average return on assets of 0.8%, which was slightly better than last year. The top 25% achieved 3.3% return this year. The range for the group was -2.5% to 4.2%.

The distribution of return on equity in 2013/14 is shown in Figure 21, with 9 of the 16 farms recording a negative return. This year the range of return on equity for North farms was -8.6% to 3.7%, with an average of -1.7%. Even the top performers only averaged a 1.7% return on their equity. The average liabilities per cow for the North farms have increased by 39% over the previous year, and equity has dropped from 84% to 79%. This indicates higher debt levels and associated finance costs are affecting return on equity, as farms have had to use debt to support cash flow in a high cost year, and to recover from the previous year of low profit margins.

Figure 20: Return on assets—North

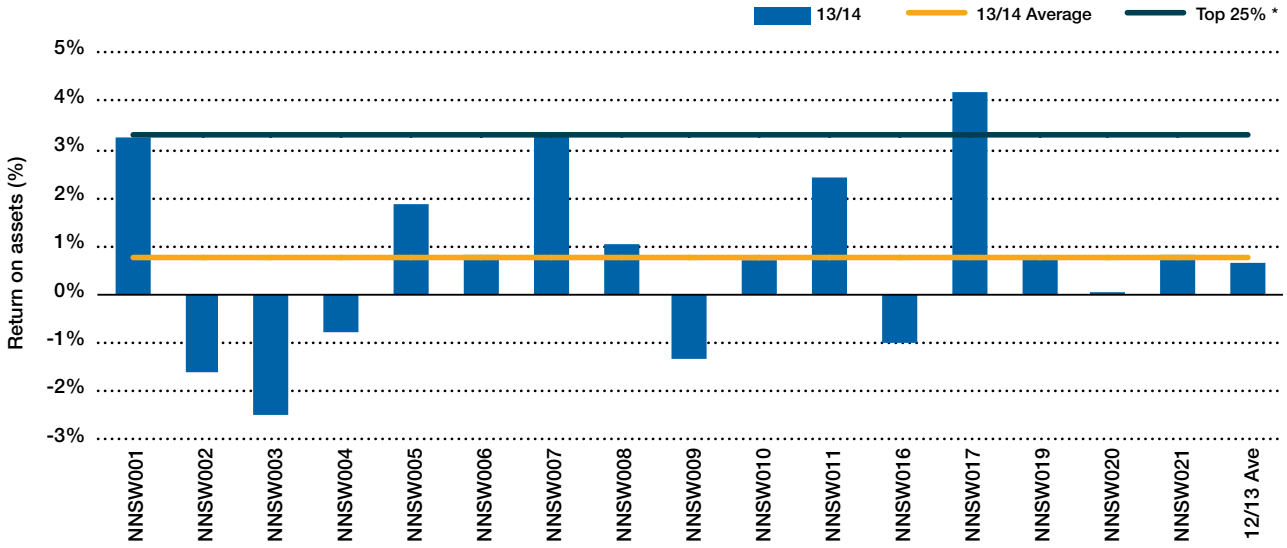
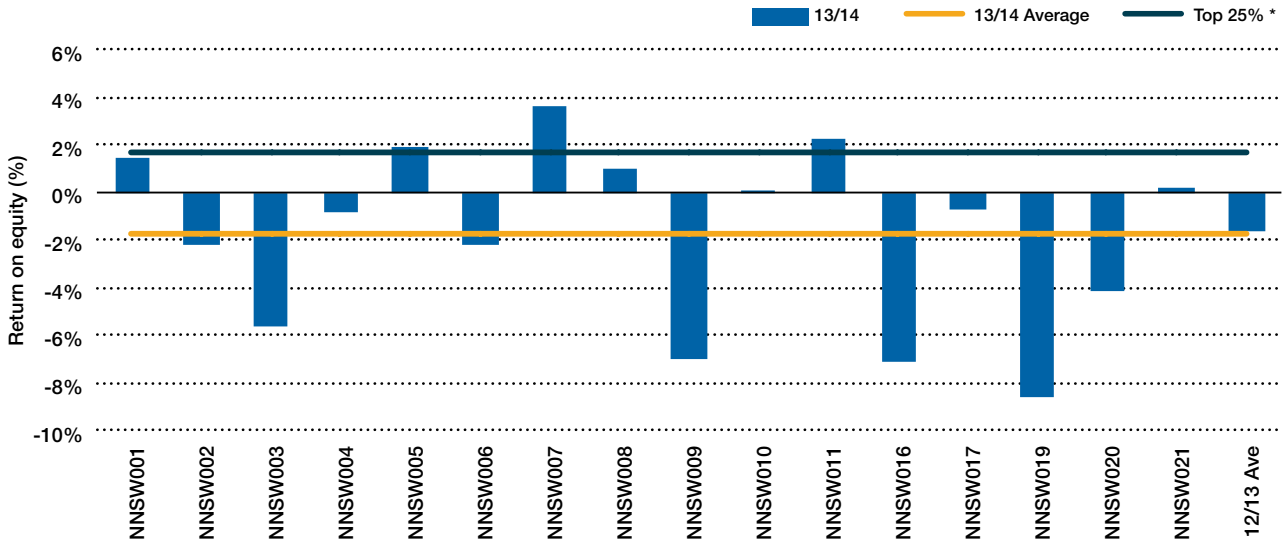


Figure 21: Return on equity—North



Feed consumption and fertiliser use

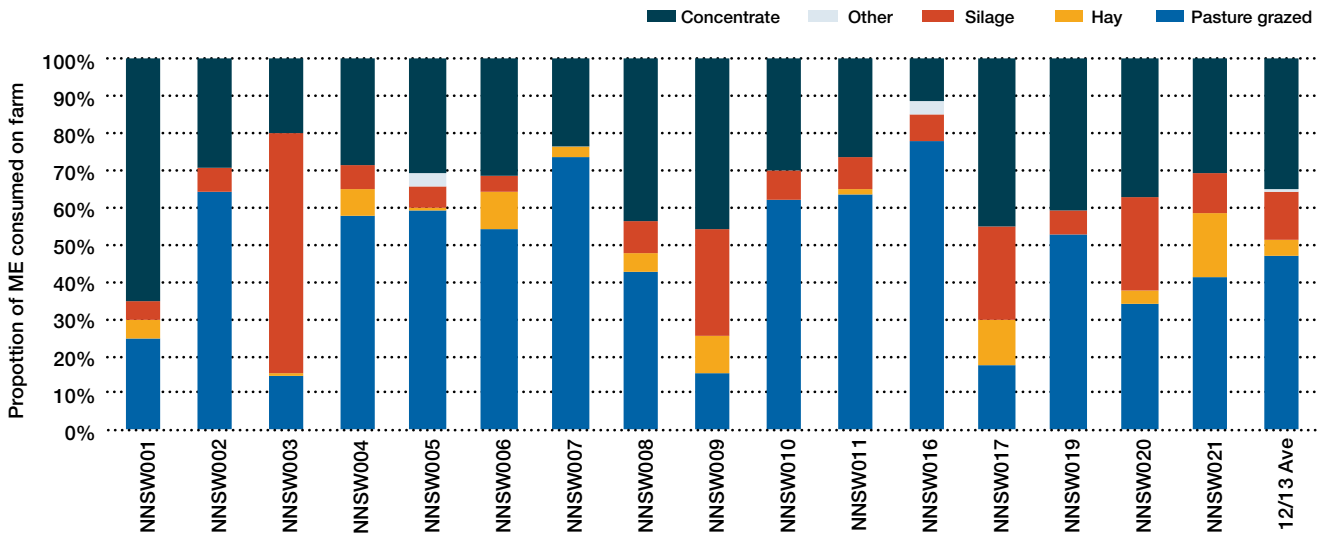
Feed data was collected on a whole farm basis rather than determining which feeds went to each class of stock, as this would have made the data collection process too difficult on many farms.

The relative contribution of each feed type to the ME consumption on the farm in shown in Figure 22. The broad range of different source of metabolisable energy used, both from home grown and purchased feed, on individual farms is evident. Pasture grazed directly accounted for more than 50% of the ME consumed on 9 of the 16 farms, whilst 10 of the 16 farms sourced at least 30% of the metabolisable energy from concentrates

On average, pasture constituted 47% of the diet, with concentrates 34% and silage and hay 19% of the diet.

Figure 23 shows the estimated home grown feed consumed per milking hectare for farms in the North. This graph only shows pasture and fodder consumed on the milking area. It does not include fodder grown and conserved on the non-milking area. A number of farms

Figure 22: Sources of whole farm metabolisable energy—North

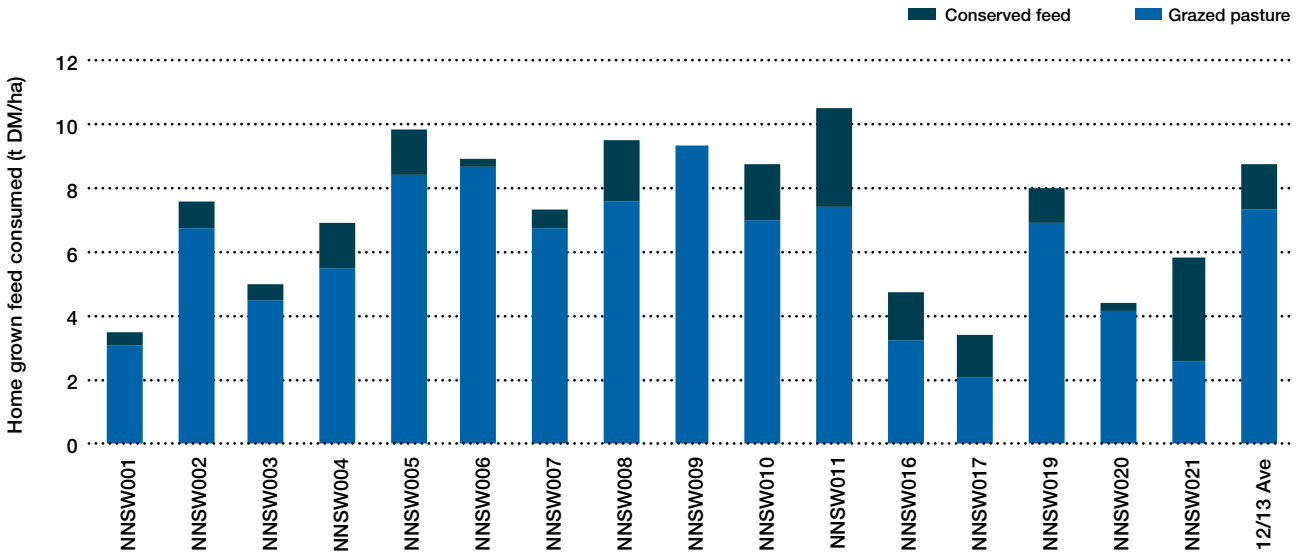


grow fodder crops for silage that are additional sources of home grown feed that are not reflected in Figure 23.

Total pasture harvest for the North was 7.1 t DM/ha on average, which was slightly lower than last year. Of the total pasture harvested, the average amount of home grown feed conserved was 1.2 t DM/ha.

Grazed pasture consumption is estimated by using a back calculation method. It should be noted that there can be a number of sources of error in the method used to calculate home grown pasture consumption including incorrect estimation of liveweight, amounts of fodder and concentrates fed, energy content of fodder and concentrate, energy content of pasture, wastage of feed and associative effects of feeds. Comparing pasture consumption estimated using the back calculation method between farms can lead to incorrect conclusions due to errors in each farm's estimate and it is best to compare pasture consumption on the same farm over time using the same method of estimation. More details on how pasture consumption was calculated can be found in Part One—Statewide or in Appendix E.

Figure 23: Estimated tonnes of home grown feed consumed per milking hectare—North

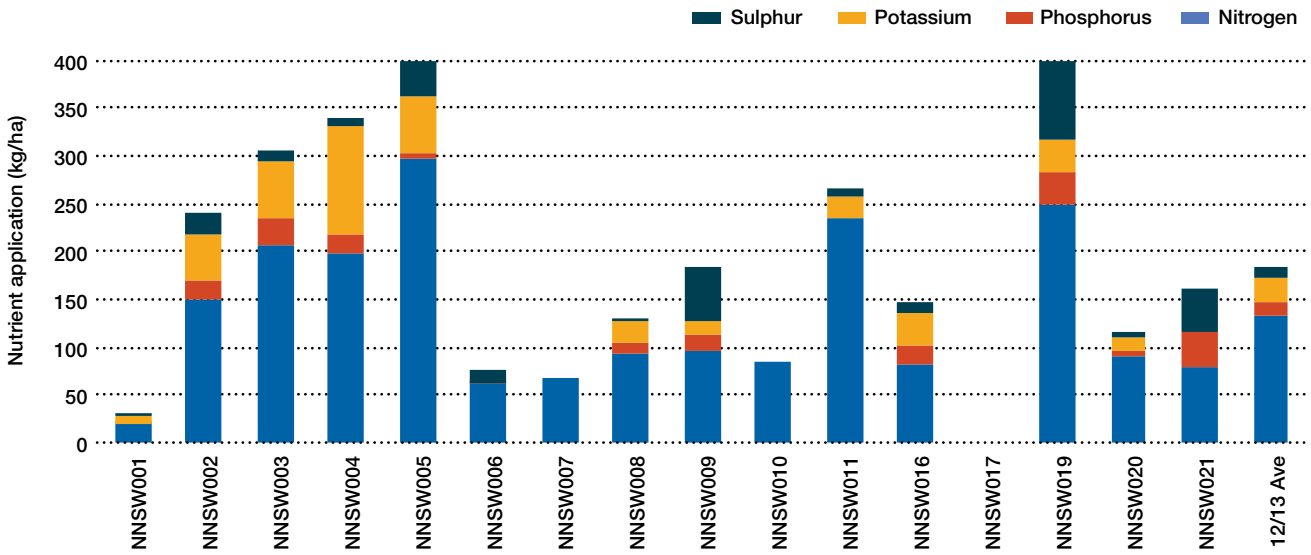


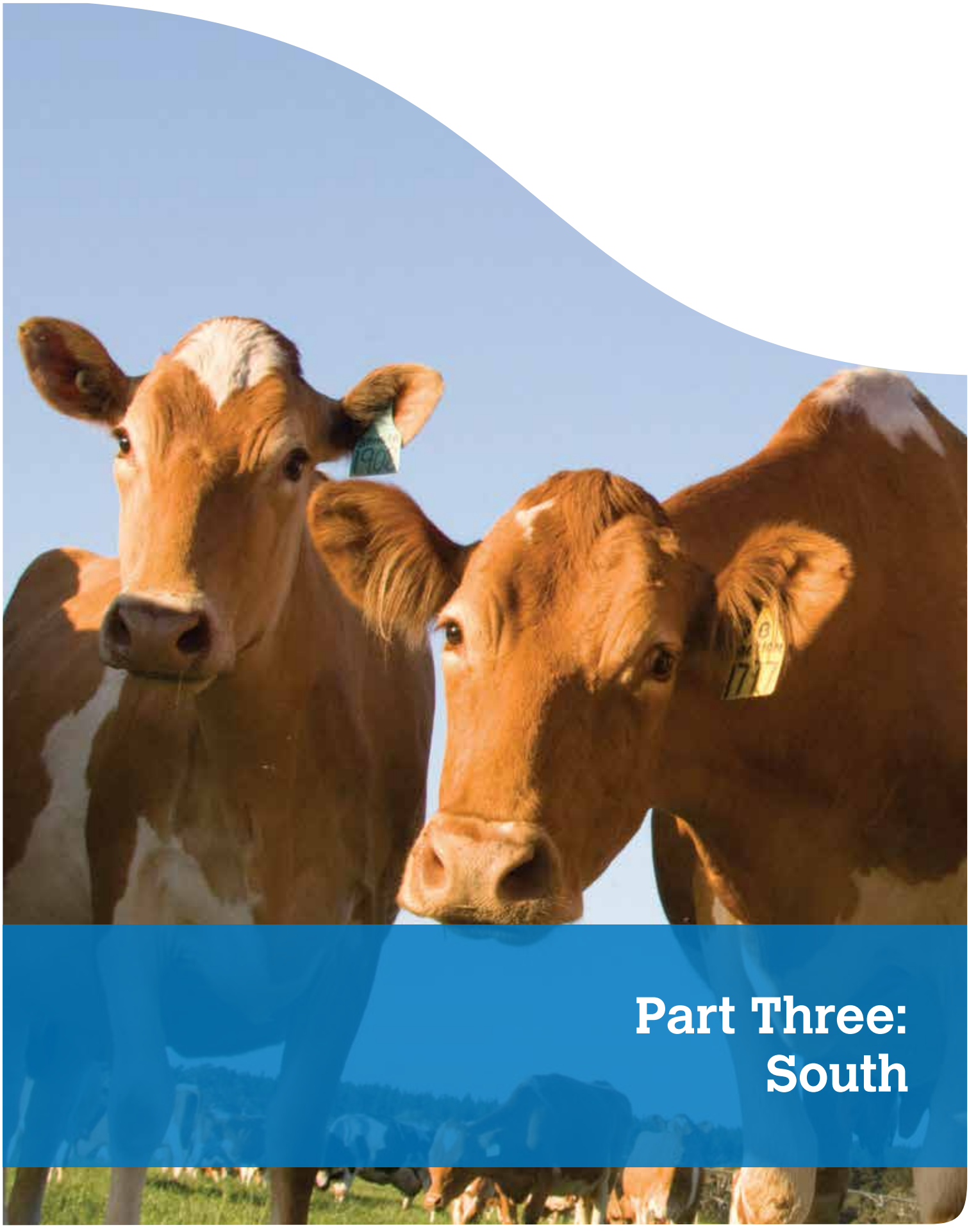
Fertiliser application

The relationship between fertiliser application per hectare and home grown feed consumed per hectare during 2013/14 is shown in Figures 23 and 24. There are no discernible trends between those farms that applied the greatest amount of fertiliser and those that had the greatest amount of home grown feed.

This could be due to a range of factors including soil type, irrigation scheduling, grazing management, and timing of rain events and damage from flooding or insects. Figure 23 is based on the milking area only, whereas Figure 24 refers to nutrients applied over the whole farm usable area. Farms NNS001 and NNSW017 applied very little fertiliser, relying on high residual nutrient levels, recycling of effluent and use of legume pastures.

Figure 24. Nutrient application per hectare—North





Part Three: South

2013/14 Seasonal conditions

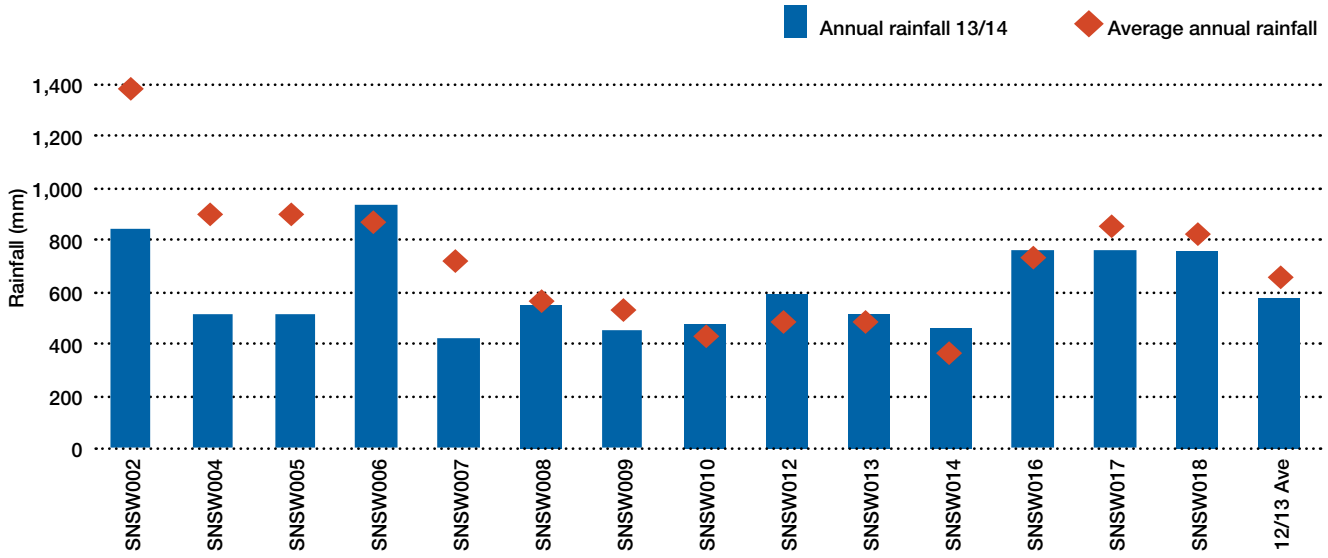
Seasonal conditions varied in the South but were reasonably good in most locations, although there were some extended dry spells experienced in spring and summer. This region covers the coastal and highlands areas south from Sydney, as well as the inland river systems and the southern Riverina.

Most farms received average rainfall across the year, with farm fodder reserves generally being adequate in the inland regions, but more scarce closer to the coast.

These moderate seasonal conditions were combined with higher milk prices and stable input costs, which contributed to a much more profitable year for farmers in the South than in previous years.

The average cost of concentrates this year was $377 / t dry matter, up from $311 last year. South farmers also fed more purchased feed per milker at 2.9 t DM per head, compared to 2.7 t in the previous year.

Figure 25: 2013/14 annual rainfall and long term average rainfall—South



Please refer to page 3 from notes on the presentation of this data.

Farms SNSW 002 to 016 were in the project last year. Farms 017 and 018 are new to the project this year.

Whole farm analysis

The key whole farm physical parameters for the South are presented in Table 6. The Q1–Q3 range shows the band in which the middle 50% of farms for each parameter sit. The top 25% refers to the top four farms in the South group based on return on assets.

The physical characteristics of the top 25% of farms (ranked on return on assets) generally lie within the middle 50% of the South group.

Table 6: Farm physical data—South

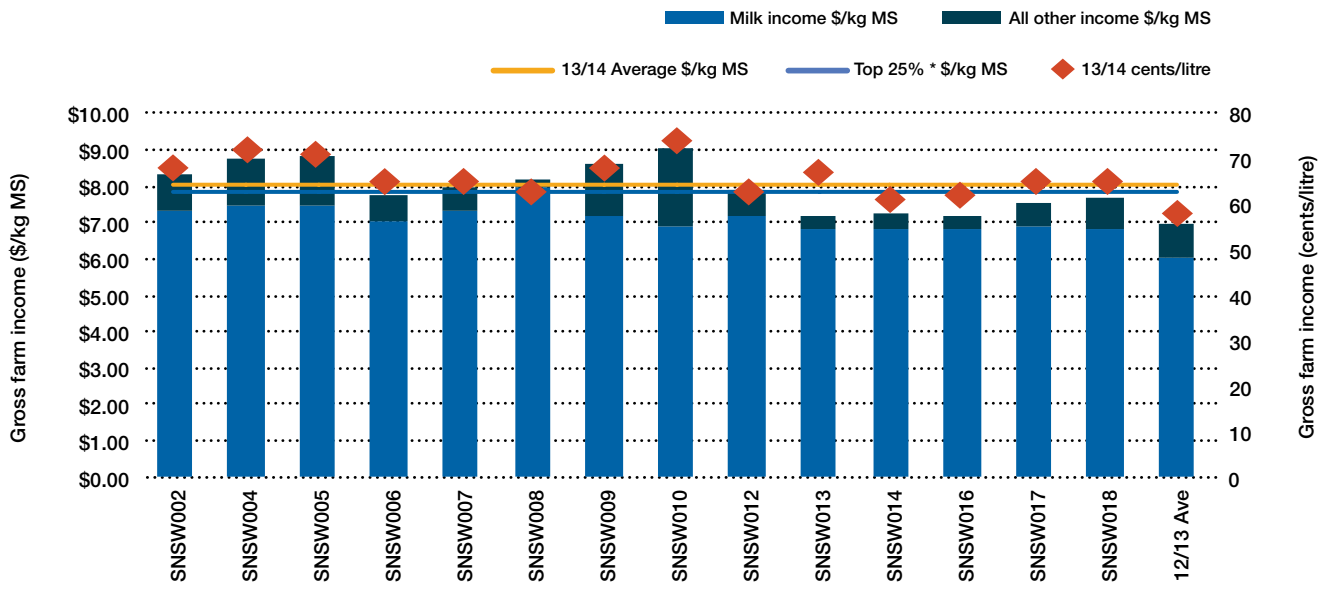
Farm physical parameters	South average	Q1 to Q3 range	Top 25% average
Annual rainfall 12/13	612	487–760	513
Water used (irrigation + rainfall) (mm/ha)	765	581–843	780
Total usable area (hectares)	381	224–394	297
Milking cows per usable hectares	1.0	0.8–1.2	1.0
Milk sold (kg MS /cow)	541	506–582	549
Milk sold (kg MS /ha)	546	432–608	540
Home grown feed as % of ME consumed	54%	49–62%	58%
Labour efficiency (milking cows / FTE)	77	56–97	84
Labour efficiency (kg MS / FTE)	41,500	30,719–50,310	45,108

Gross farm income

Gross farm income includes all farm income, whether that is income from milk sales, changes in inventories of stock or feed, or cash income from livestock trading. The average gross farm income of $8.00 /Kg MS includes milk income of $7.12 /kg MS (52 c/l) and all other income associated with the dairy business of $0.88 / kg MS (6 c/l). The top 25% recorded average gross farm income of $8.49 /kg MS (62 c/l).

Figure 26 shows the gross farm income for all the farms, in the South and the 2012/13 South gross farm income average of $6.95 / kg MS. Livestock trading profit accounted for a large portion of the other farm income this year, indicating that a number of farms are rebuilding herd numbers after having to cull more heavily in the previous year of lower milk prices.

Figure 26: Gross farm income per kilogram milk solids—South



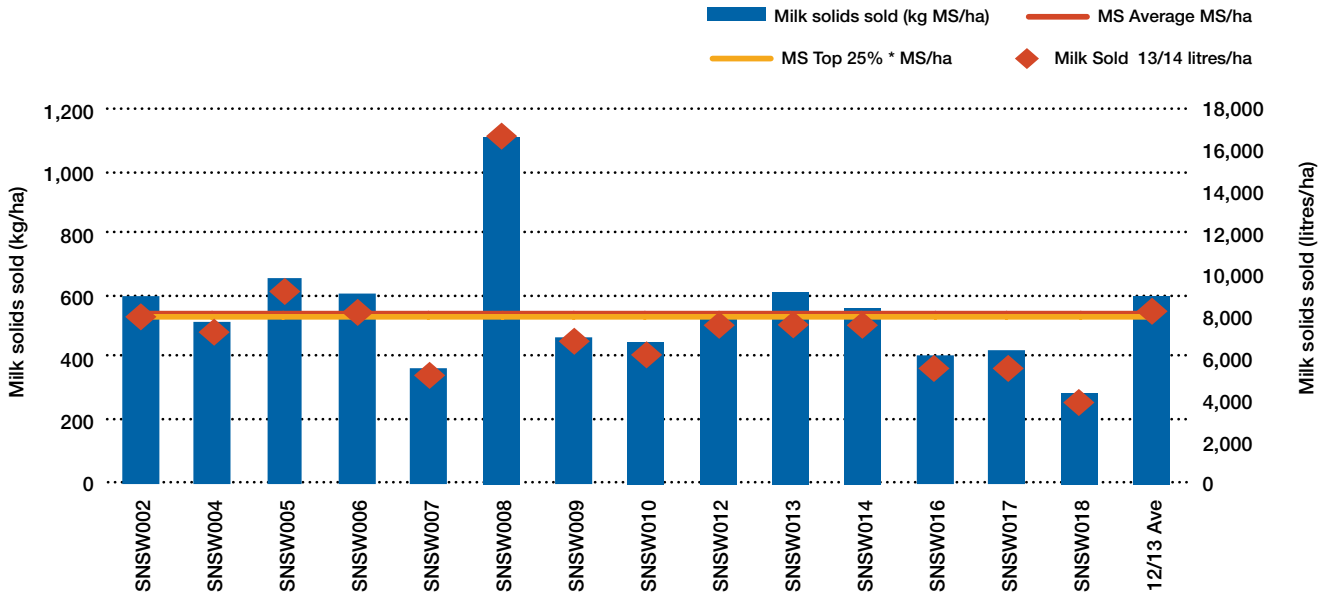
Milk solids production

Average milk production per hectare was 9% lower than last year's average, with 546 kg MS/ha produced in 2013/14. This is shown by the red average line bar in Figure 27. This year's dataset ranged widely from 291 to 1111 kg MS/ha.

The average milk production of the top 25% group was lower than last year at 540 kg MS/ha, and is similar to the average of all South farms at 546 kg MS/ha. However, none of the farms in the top 25% group was above the average for this measure, suggesting they have other attributes which contributed to their performance.

The average is greatly skewed by SNSW008 and when this farm is excluded from this group the average is reduced to 502 kg MS/ha.

Figure 27: Milk solids sold per hectare—South



Variable costs

The separation of variable and overhead costs per kilogram of milk solids is shown in Figure 28. Variable costs are those costs that change directly according to the amount of output, such as herd, shed and feed costs.

Average variable costs in 2013/14 were $3.73 /kg MS (27 c/l) with a wide range from $2.43–$5.73 (18 c/l to 42 c/l). Last year the average variable costs for the South group were slightly lower at $3.57 /kg MS (28.5 c/l).

The variation for Southern farms can be seen by the blue bars in Figure 28.

Feed costs are the major variable cost accounting for 50% of total costs. Average feed costs this year were $3.20 /kg MS (23 c/l) for the South. The price of the concentrate fed was higher this year at $377/t DM on average, with purchased feed contributing 2.9 t DM / cow (range 1.2–5.4 t DM/cow) to the total diet.

A breakdown of variable costs for the individual businesses on a $/kg MS basis can be seen in Appendix Table C4.

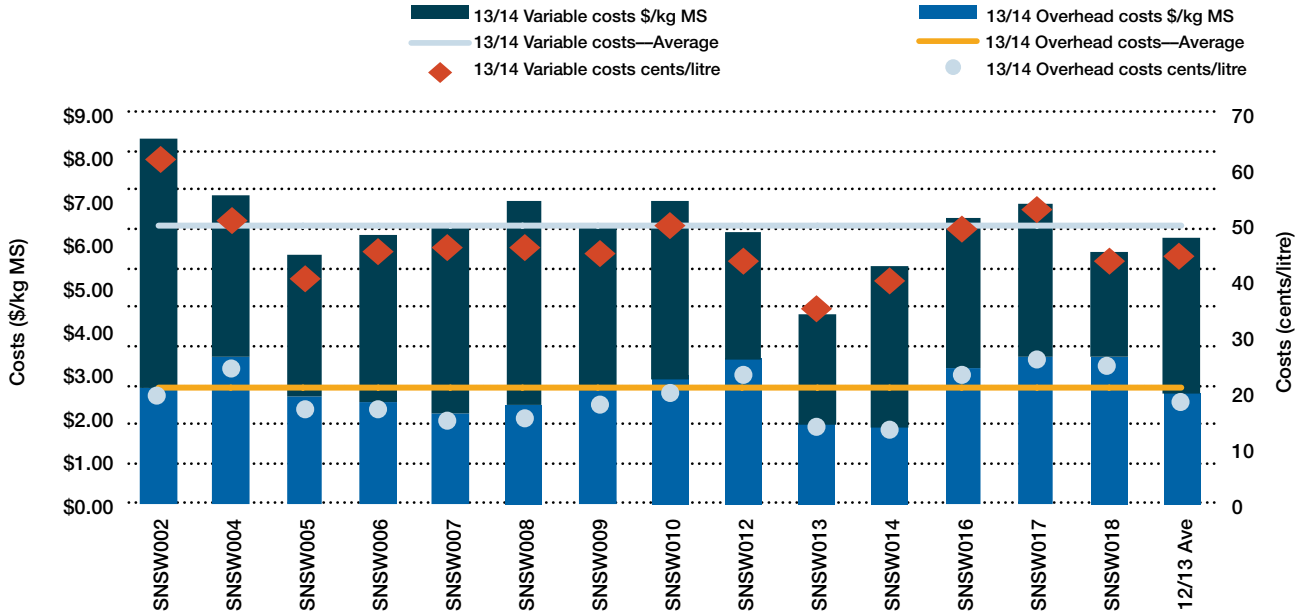
Overhead costs

Overhead costs are those that do not vary with the level of production and includes cash overheads such as rates and insurance as well as non-cash costs such as imputed owner operator and family labour and depreciation of plant and equipment.

Overhead costs were slightly higher this year at $2.69/ kg MS (20 c/l) on average in compared to $2.56/kg MS last year. Figure 28 illustrates the range spent on overhead costs, which was from $1.79 to $3.43 /kg MS (13 c/l to 26 c/l) for farms in the South in 2013/14.

The main overhead cost category is labour, both employed and imputed; followed by depreciation and repairs and maintenance. Imputed labour for farm owners, family members and sharefarmers is valued at $25/hr for all hours worked. The percentage breakdown of the individual totals expressed as percentages is presented in Appendix Table C6.

Figure 28: Whole farm variable and overhead costs per kilogram milk solids—South



Cost of production

Cost of production gives an indication of the average cost of producing a kilogram of milk solids. It is calculated as variable plus overhead costs and accounting for changes in fodder inventory and livestock trading losses or gains. Considering the changes in inventory is important to establish the true costs to the business. The changes in fodder inventory counts for the net cost of feed from what was fed out, conserved, purchased and stored over the year. Livestock trading loss is also considered in cost of production where there is a net livestock depreciation or reduced stock numbers.

Figure 28 and Table 7 present both variable and overhead costs to give total cost of production per kilogram of milk solids sold. Cost of production is a useful risk indicator as it calculates the costs incurred to produce a kilogram of milk solids sold. The comparison of cost of production to gross income returns the percentage of gross income retained as earnings (EBIT %).

Table 7: Cost of production—South

Farm costs	South average		Q1 to Q3 range	Top 25% average	
	$/kg MS	c/l	$/kg MS	$/kg MS	c/l
Livestock trading loss	$0.00	0.0	$0–$0	$0.00	0.0
Feed inventory change	-$0.10	-0.4	$-0.22–$0.02	-$0.34	0.0
Changes in inventory ($ / kg MS)	-$0.10	-0.4	$-0.22–$0.02	-$0.34	0.0
Variable costs					
Herd costs	$0.32	2.3	$0.24–$0.37	$0.22	1.6
Shed costs	$0.21	1.5	$0.17–$0.26	$0.18	1.4
Purchased feed and agistment	$2.28	16.5	$2.03–$2.38	$1.90	14.1
Home grown feed cost	$0.92	6.7	$0.71–$1.06	$1.01	7.3
Total variable costs ($ / kg MS)	$3.73	27.0	$3.33–$4.05	$3.32	24.4
Overhead costs					
Rates	$0.07	0.5	$0.03–$0.1	$0.03	0.2
Registration and insurance	$0.03	0.2	$0.01–$0.04	$0.03	0.2
Farm insurance	$0.08	0.6	$0.06–$0.09	$0.07	0.5
Repairs and maintenance	$0.39	2.8	$0.28–$0.49	$0.33	2.4
Bank charges	$0.02	0.1	$0–$0.02	$0.01	0.1
Other overheads	$0.16	1.1	$0.09–$0.17	$0.21	1.5
Employed labour cost	$0.80	5.8	$0.65–$0.97	$0.74	5.4
Total cash overheads ($ / kg MS)	$1.54	11.1	$1.36–$1.74	$1.41	10.3
Depreciation	$0.35	2.6	$0.29–$0.40	$0.39	2.9
Imputed owner/operator and family labour	$0.80	5.9	$0.48–$1.09	$0.65	4.8
Total overhead costs ($ / kg MS)	$2.69	19.6	$2.3–$3.31	$2.46	18.0
Total cost of production ($ / kg MS)	$6.32	46.2	$5.57–$6.70	$5.43	42.3

Break-even price required

The break-even price required for milk is calculated as variable and overhead costs less income other than milk (including livestock trading profit, changes in feed inventory or other income). The difference between the break-even price required and milk income is earnings before interest and tax (EBIT) per kilogram of milk solids.

Figure 29 shows that the break-even price required varied from $3.93 per kg MS (28 c/l) to $7.41 per kg MS (53 c/l), with an average of $5.56 per kg MS (40 c/l).

The milk price received varied from $6.76 /kg MS (48 c/l) to $7.97 /kg MS (57 c/l), with an average of $7.12 / kg MS (52 c/l). The results highlight that in 2013/14 thirteen out of the fourteen South farms recorded a positive EBIT.

Earnings before interest and tax

Earnings before interest and tax (EBIT) is calculated by subtracting variable and overhead costs, including imputed labour costs from gross income. It is the return from all the capital invested in the business.

Figure 30 shows the range in EBIT and on average, EBIT per kilogram of milk solids for participants in the South was $1.56 /kg MS (11 c/l), almost double last year's average of $0.81 /kg MS (6 c/l).

The strength of the top performers is highlighted by recording an average EBIT of $2.04 /kg MS (15 c/l), 35% higher than the average. All farms in the South except one received a positive EBIT.

Even though costs of production were slightly higher this year, the higher gross income due to stronger milk prices contributed to an increase in farm returns for the South farms.

Figure 29: Break-even price required per kilogram of milk solids sold—South

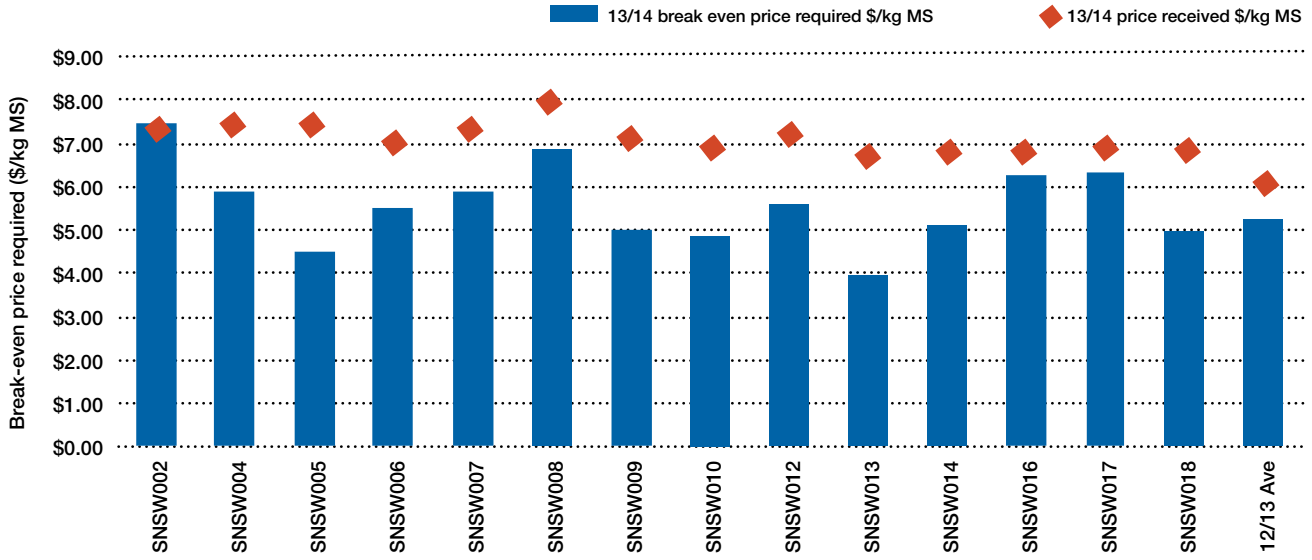
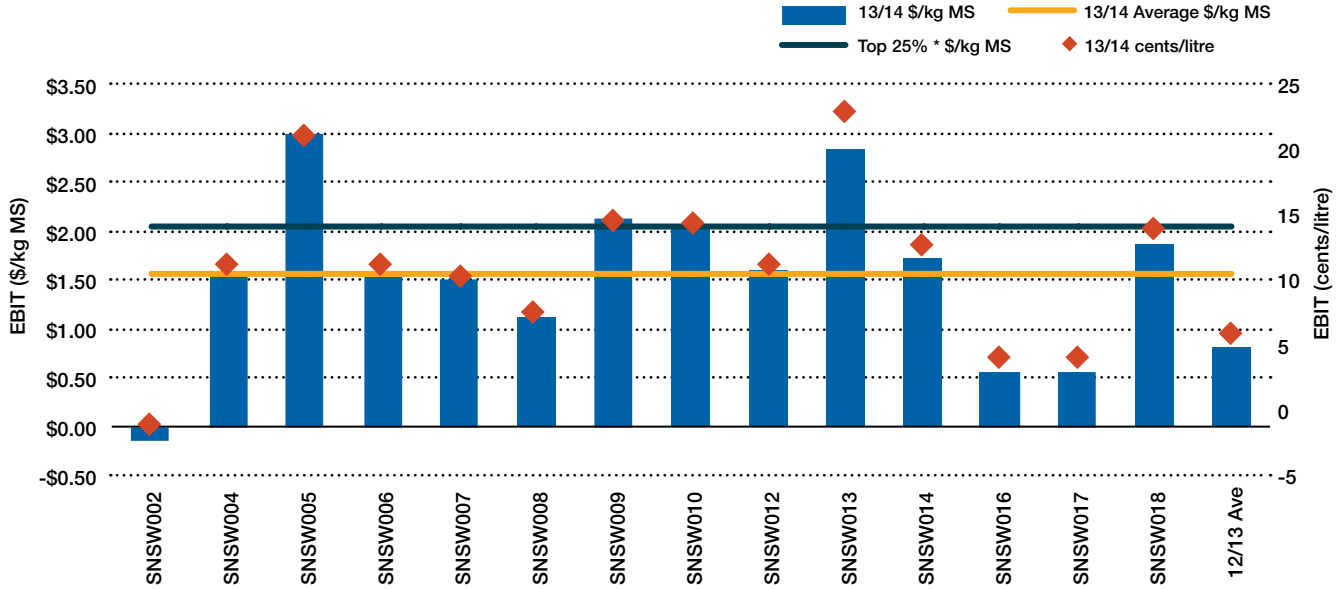


Figure 30: Whole farm earnings before interest & tax per kilogram milk solids—South



Return on assets and equity

Return on assets is the earnings before interest and tax expressed as a percentage of total assets involved in the farm business. It is an indicator of the overall earning power of total assets, irrespective of capital structure. In 2013/14 the ranking of the top 25% of farms is based on return on asset.

Return on equity is a measure of the owner's rate of return on investment. It is calculated as EBIT minus interest and lease costs, expressed as a percentage of the owner's equity. Figures 31 and 32 were calculated excluding capital appreciation. For return on equity including capital appreciation, as well as individual farm results, refer to Appendix Table C1.

The return on assets for the South region ranged from -0.2% to 12.2% (Figure 31), with an average of 4.8%. The top 25% achieved 9.1%. This is significantly higher than last year, when the average ROA was 2.7% and the top 25% achieved 6.3% ROA.

Land value is a major component of the assets under management, and it is worth noting that there is a huge variation in market values for land in the South region. Farm locations include the southern highlands close to Sydney as well as the southern Riverina region where land values have been separated from water entitlement and are relatively low.

This year return on equity had a wide range from -3.6% up to 15.0% as shown in Figure 32. The average was 4.6%, with the top 25 % of farms averaging 10.5% return on equity. This is a significant increase on last year, when the average was 0.5%. Only 1 of the 14 farms in the South recorded a negative return on equity. The average liabilities per cow for the North farms have decreased slightly over the previous year, and average equity has risen from 70% to 72%. This indicates a reduction in debt levels and associated finance costs across the farm in the South, as higher operating margins have allowed farms to reduce debt as they recover from the previous year of low profit margins.

Figure 31: Return on assets—South

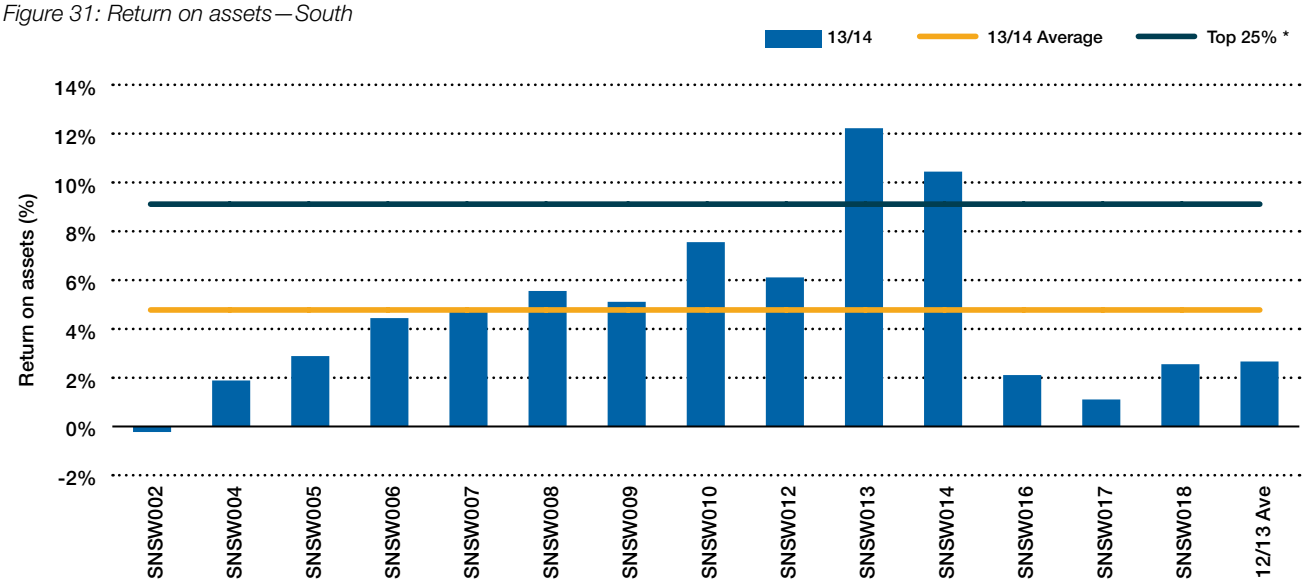
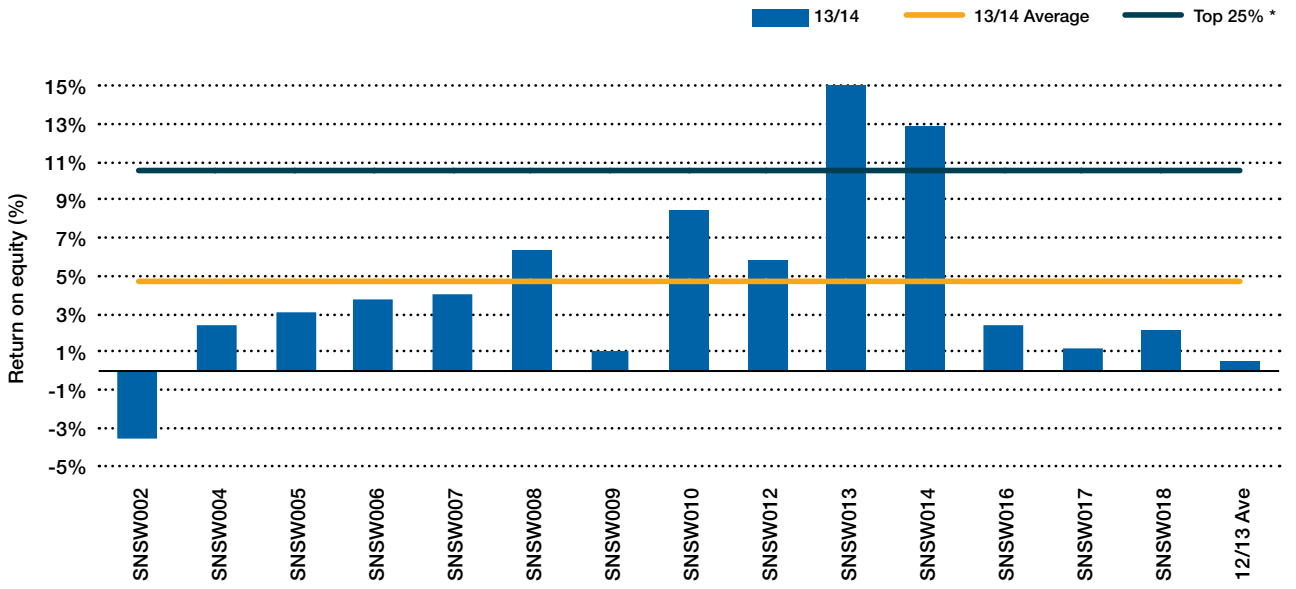


Figure 32: Return on equity—South



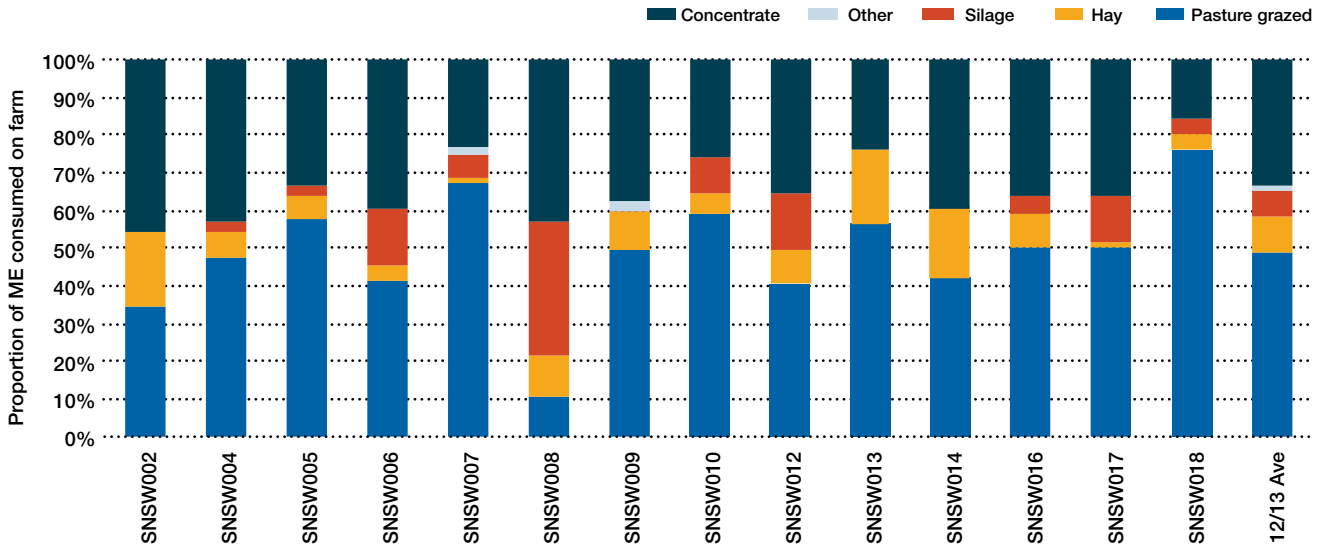
Feed consumption and fertiliser use

Feed data was collected on a whole farm basis rather than determining which feeds went to each class of stock as this would have made the data collection process too difficult on many farms.

Figure 33 shows the relative contribution of each feed type to the ME consumption on the farm. Pasture consumption is calculated as the gap between the calculated total energy required on farm for all stock classes and the energy provided from concentrates, silage, hay and other sources.

The contribution of grazed pasture as a proportion of ME consumed on farm was 49% in 2013/14. Concentrate supplements contributed 34% of total ME fed while silage and hay 17% of total ME consumed on farm on average.

Figure 33: Sources of whole farm metabolisable energy—South

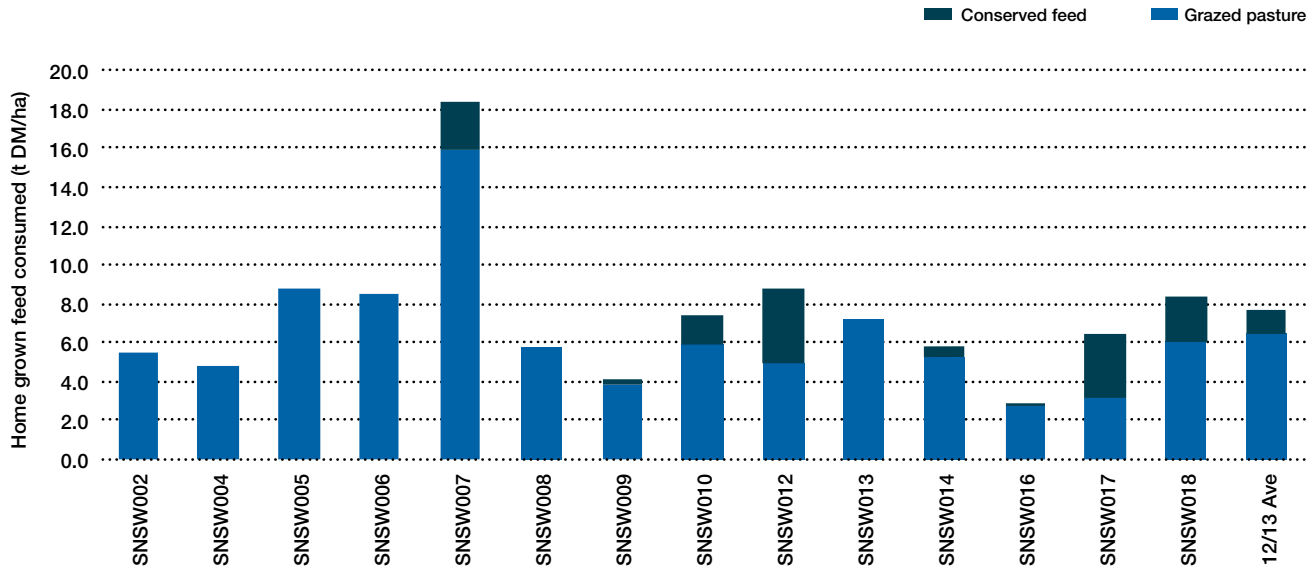


In 2013/14 home grown feed consumption has been measured per milking hectare as opposed to per usable hectare. Pasture consumption for farms in the South is shown in Figure 34. The amount of pasture grazed from the milking area this year ranged from 2.8 tonnes of dry matter per hectare up to 15.9 t DM/ha, with an average of 6.3 t DM/ha. Conserved fodder ranged from 0 t DM/ha to 3.9 t DM/ha, with an average of 1.0 t DM/ha. This resulted in an average total pasture harvest from the milking area of 7.4 t DM/ha, which was slightly lower than last year

Figure 34 shows the estimated home grown feed consumed per milking hectare for farms in the South. This graph only shows pasture and fodder consumed on the milking area. It does not include fodder grown and conserved on the non-milking area. A number of farms grow fodder crops for silage or hay that are additional sources of home grown feed that are not reflected in Figure 34.

It should be noted that there can be a number of potential sources of error in the method used to calculate home grown pasture consumption including incorrect estimation of liveweight, amounts of fodder and concentrates fed, energy content of fodder and concentrate, energy content of pasture, wastage of feed and associative effects of feeds. Comparing pasture consumption estimated using the back calculation method between farms can lead to incorrect conclusions due errors in each farms estimate and it is best to compare pasture consumption on the same farm over time using the same method of estimation.

Figure 34: Estimated tonnes of home grown feed consumed per milking hectare—South

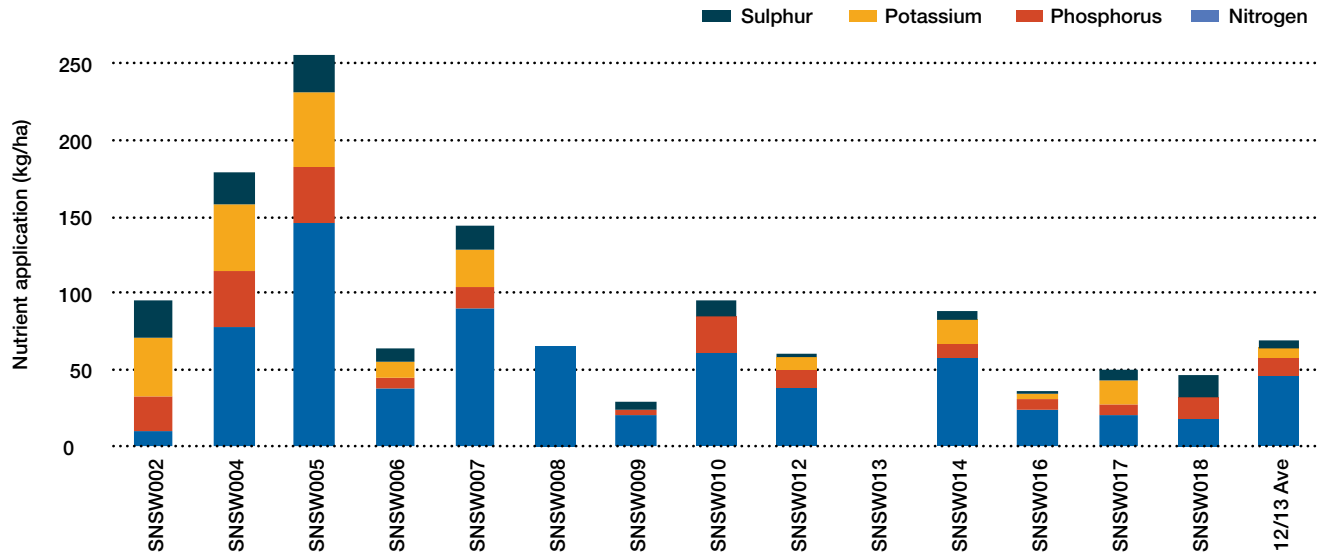


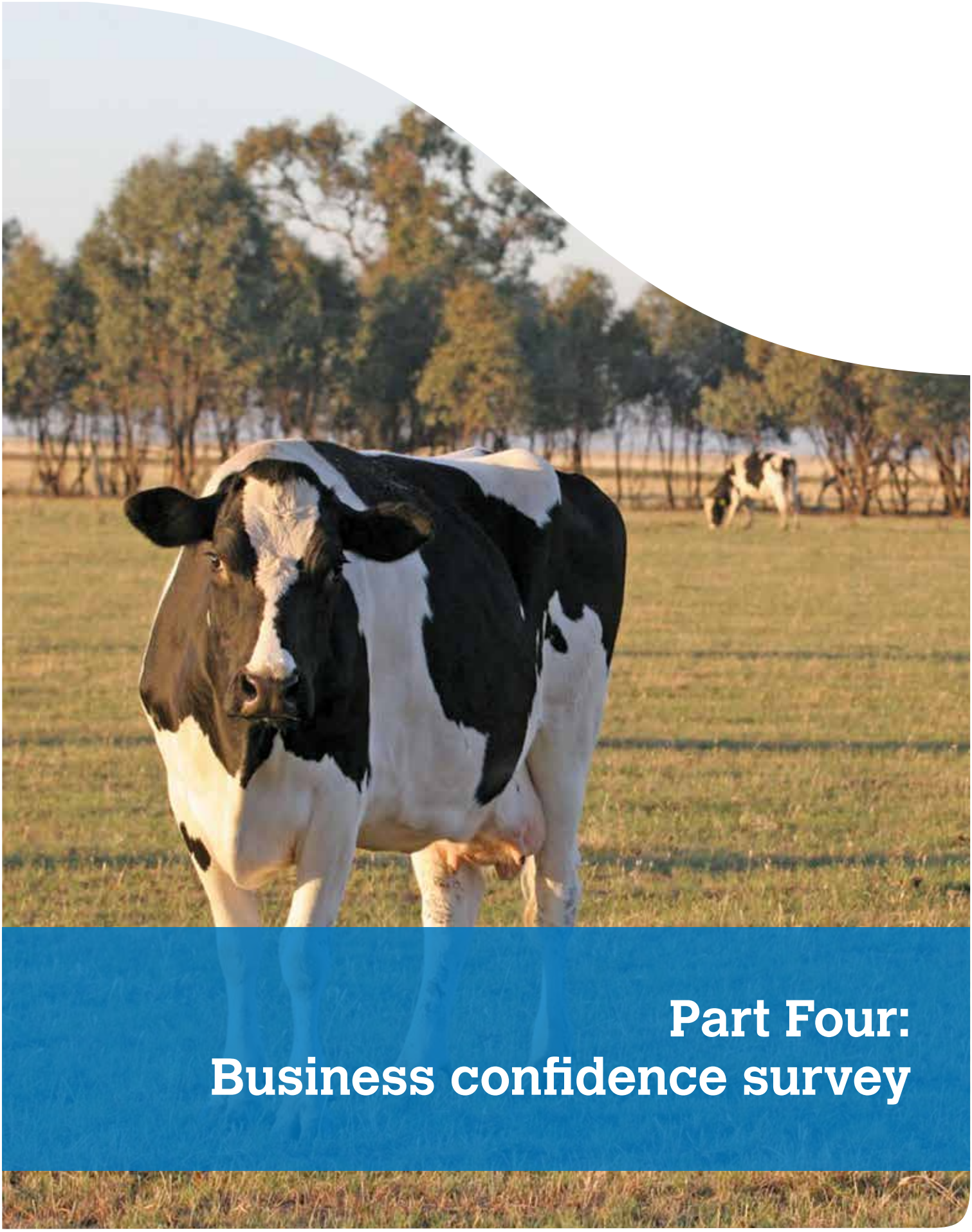
Fertiliser application

The relationship between fertiliser application per hectare and home grown feed consumed per hectare during 2013/14 is shown in Figures 34 and 35. There are no discernible trends between those farms that applied the greatest amount of fertiliser and those that had the greatest amount of home grown feed.

This could be due to a range of factors including soil type, irrigation scheduling, grazing management, and timing of rain events and damage from flooding or locusts. Figure 34 is based on the milking area only, whereas Figure 35 refers to nutrients applied over the whole farm usable area. SNSW013 does not apply imported fertiliser as a common practice and instead uses nutrients from effluent sources on farm.

Figure 35: Nutrient application per hectare—South





Part Four: Business confidence survey

Expectations and issues

Responses to this business confidence survey were made during the data collection phase in July to September 2014 with regard to the 2014/15 financial year.

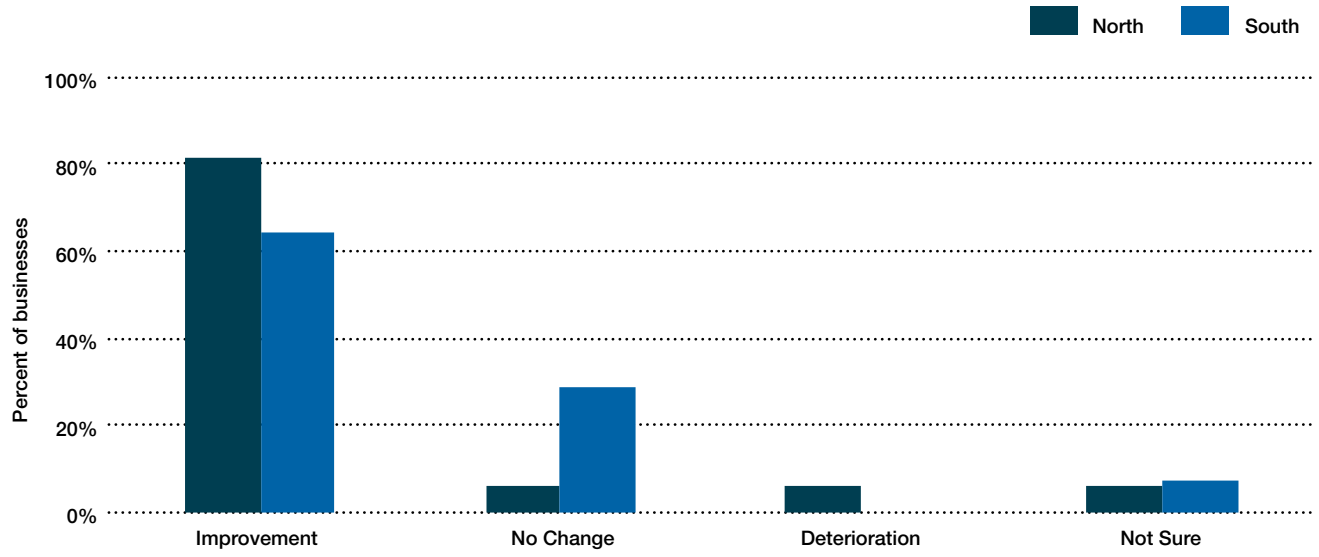
Expectations for business returns

Following an improved 2013/14 year, and the expectation of stable milk prices in the coming year, around 75% of farmers predict an improvement in farm business returns (Figure 36).

Responses to the survey were made with consideration to all aspects of farming, including climate and market conditions for all products bought and sold.

In the North region, around 80% of participants expect their farm business returns to improve in 2014/15 as shown in Figure 36. In the South this figure was lower at 64%, perhaps reflecting the better profits received, or the lower opening in milk prices in Victoria for the year ahead, which have a strong influence on milk prices in the South region. The remainder of the farms in the South expected no change, while in the North only 6% expected no change, and 7% in both groups were not sure.

Figure 36: Expected change to farm business returns in 2014/15

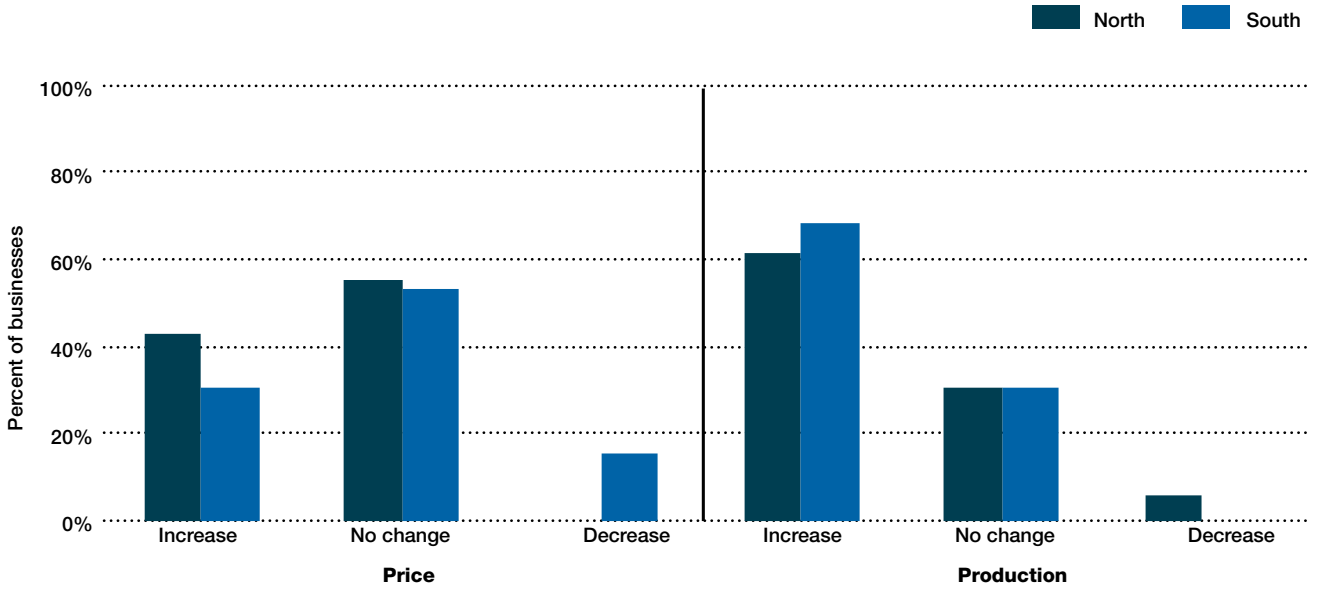


Price and production expectations—milk

Forty-four per cent of farms in the North are anticipating an increase in milk price while the remaining 56% were expecting no change. In the South group, only 31% expected a milk price rise while 54% anticipated no change, and 15% expected prices to fall.

The expectation about future milk production was positive, with 63% in the North and 69% in the South expecting to increase production. In both regions around 30% expected no change in production, whilst 6% of farms in the North anticipate a decrease.

Figure 37: Producer expectations of prices and production of milk in 2013/14



Price and production expectations—fodder

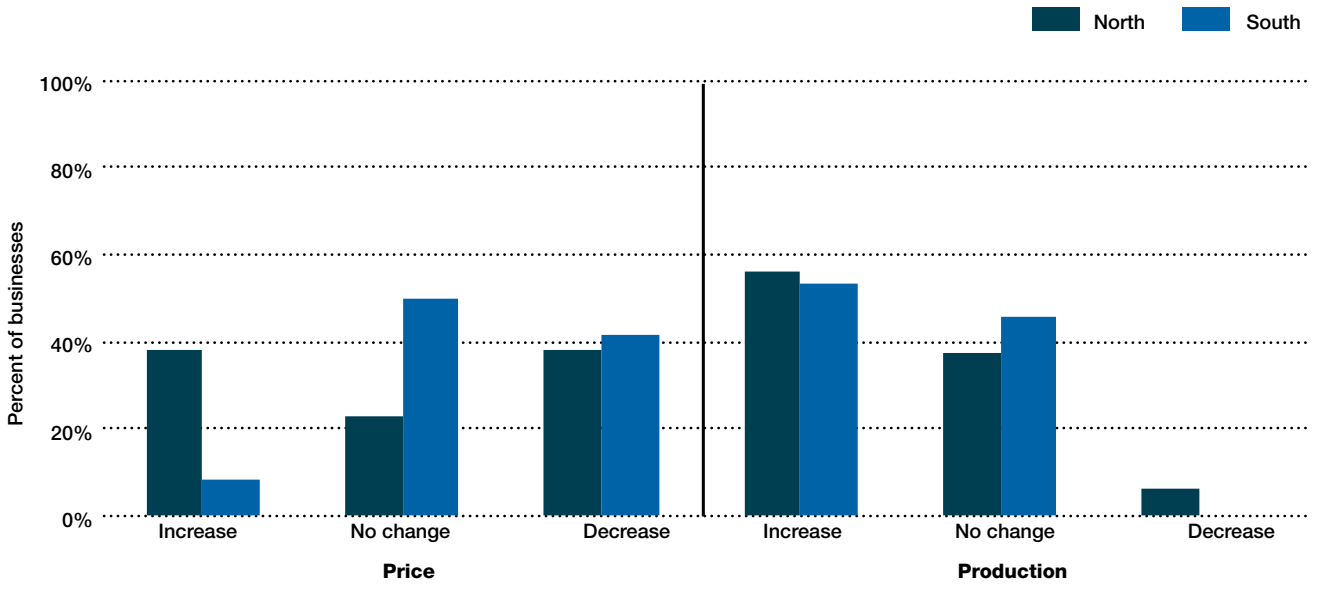
The expectation about future fodder prices was mixed for the North and South regions. The farmers in the North were evenly split across the three options in their expectations about fodder prices next year (Figure 38). The dry finishing conditions in the NSW grain belt with late frosts and even snow in October affected the forecasts for the quantity and quality of the harvest.

The majority of farmers in the South are expecting either no change or a decrease in fodder prices.

These results highlight the huge spread in geographical location of the participating farmers, which affects their outlook for fodder.

The majority of farmers in both regions were expecting to increase their fodder production, in the likelihood of better seasonal conditions, and reflecting the depletion of fodder inventories and the need to rebuild stored fodder supplies.

Figure 38: Producer expectations of prices and production of fodder in 2013/14

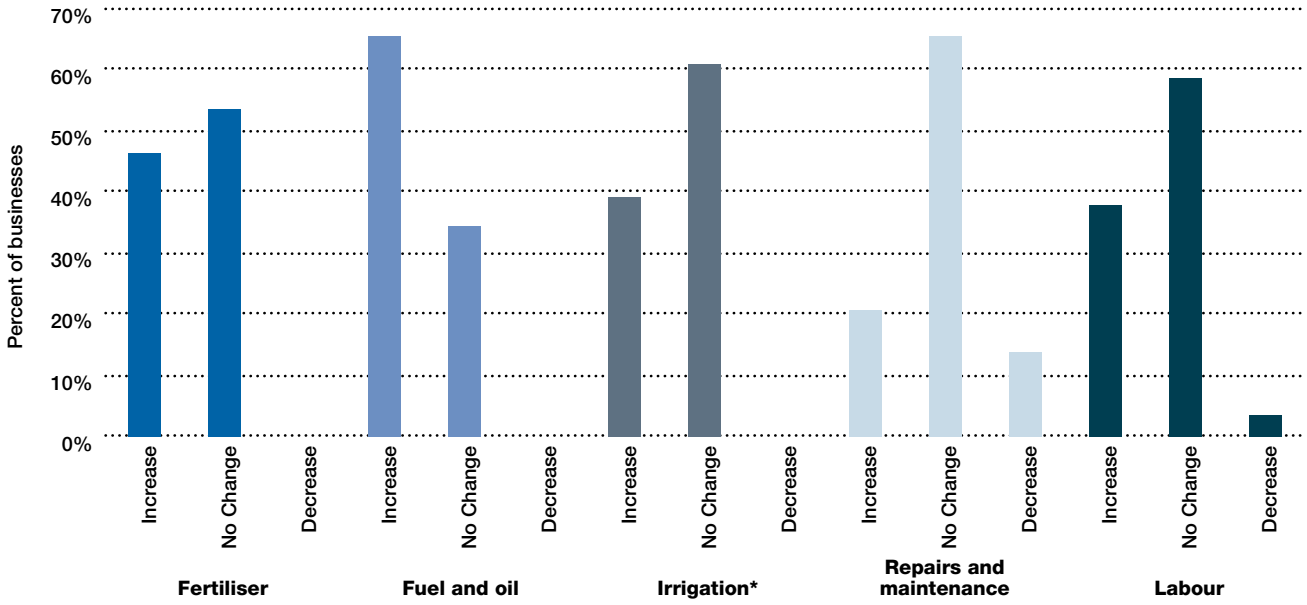


Cost expectations

Data presented in Figure 39 represents the expectations of costs for the dairy industry from the 30 farms in the project, excluding the costs of irrigation which was answered by those farms that have significant irrigation.

There are some clear trends surrounding some of the key costs in the dairy industry with over 50% of participants around the state expecting no change in costs for purchased fertiliser, repairs and maintenance and labour during 2013/14.

Figure 39: Producer expectations of costs for the dairy industry in 2013/14



Major issues in the NSW dairy industry—the next 12 months

A summary of the key issues identified by participant businesses over the coming 12 months are identified in Figure 40 below. All these participating farms had at least one response to this question, with 54 responses recorded.

The major concern identified by participating farms with 19% of responses was around labour issues, particularly finding and retaining skilled reliable people. Climate and seasonal conditions were second with 15%, particularly concerns around the dry season and the prospect of returning to drought.

The declining terms of trade, with the chance of lower milk income and rising costs were next, with a common theme that the returns are low relative to the amount of effort required to run a dairy business. Other issues mentioned were: improving farm physical performance, the need for farm development; and debt management.

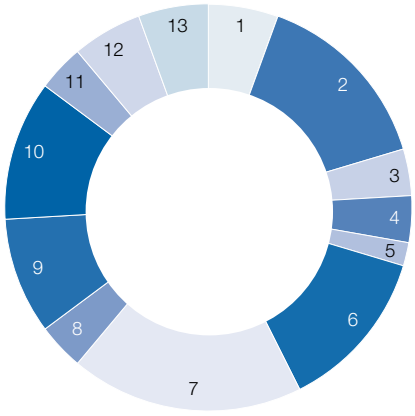
* regards responses from 23 participant farms with significant irrigation.

Major issues in the dairy industry—the next 5 years

The key issues identified by individual participants for their business over the next five years are identified in Figure 41, below. A total of 58 responses were recorded from the 30 farms.

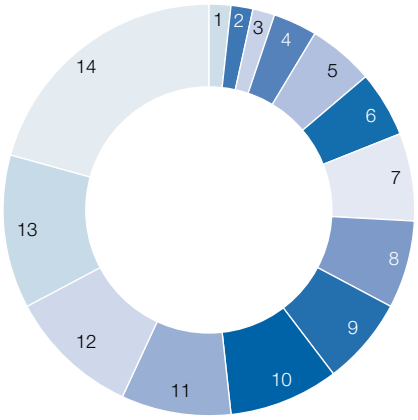
Succession planning, milk price, farm expansion and development, controlling costs of production were identified as the key issues in the dairy industry over the next five years.

Figure 40: Major issues for individual businesses—12 month outlook



1	Cash flow
2	Climate/weather variability
3	Debt management
4	Economic & political pressure
5	Farm development & investment
6	Inputs
7	Labour
8	Land use pressures
9	Milk price
10	Physical performance
11	Succession
12	Water
13	Work-life balance

Figure 41: Major issues for individual businesses—5 year outlook



1	Cash flow
2	Climate/weather variability
3	Farming system
4	Work-life balance
5	Labour
6	Water
7	Debt management
8	Economic & political pressure
9	Land use pressure
10	Farm development & investment
11	Inputs
12	Physical performance
13	Milk price
14	Succession

2013/14 Greenhouse gas emissions

The analysis of greenhouse gas emissions from participating farms is based on the Australian National Greenhouse Gas Inventory method. This model was developed to predict the magnitude and source of greenhouse gasses emitted from a dairy farm. The initial analysis template was sourced from the University of Melbourne's Greenhouse in Agriculture website (**www.greenhouse.unimelb.edu.au**), which provides decision support frameworks for greenhouse accounting on Australian dairy, sheep, beef and grain farms. While comprehensive, this analysis should not be assumed exact, but used as indicative only.

Carbon dioxide equivalents (CO2-e) are used to standardise the greenhouse potentials from different gases. The Global Warming Potential (GWP) is the index used to convert relevant non-carbon dioxide gases to a carbon dioxide equivalent. This is calculated by multiplying the quantity of the gas by its Global Warming Potential (GWP). All of the data in this section is in CO_2-e tonnes.

The GWP for the three gases that are noted in this report are; 1 : 21 : 310 (CO_2 : CH_4 : N_2O). This means that one CO_2-e tonne equates to 47.6 kg of methane (CH_4) and 3.2 kg of nitrous oxide (N_2O).

The distribution of different emissions for 2013/14 is shown in Figure 53. Greenhouse gas emissions per tonne of milk solids (t MS) produced ranged from 9.7 t CO_2-e/t MS to 20.1 t CO_2-e/t MS and the average level of emission was 13.0 t CO_2-e/t MS.

Methane (CH4) was identified as the main greenhouse gas emitted from dairy farms, accounting for 65% of all greenhouse emissions. There are two main sources on farm: ruminant digestion and anaerobic digestion in effluent management systems. Methane produced from ruminant digestion is known as enteric methane and was the major source of emissions from all farms in this report, with an average of 60% of total emissions. Methane from effluent ponds accounted for 5% of total emissions.

The most efficient strategy to reduce enteric methane production is manipulating the diet by increasing the diet quality through improved pastures and adding concentrates. Adding fat supplements such as whole cotton seed and linseed oil into the diet can also reduce methane emissions. This is simple and effective method however it is recommended that fats should not be more than 6-7% of the dietary dry matter.

The second main greenhouse gas emission is nitrous oxide (N_2O) accounting for 21% of total emissions or 2.7 t CO_2e/t MS. N_2O emissions in dairy farms are sourced primarily from direct emissions; including nitrogen fertiliser application, effluent management systems, and animal excreta (dung and urine), as well as indirect emissions such as that from ammonia and nitrate loss in soils.

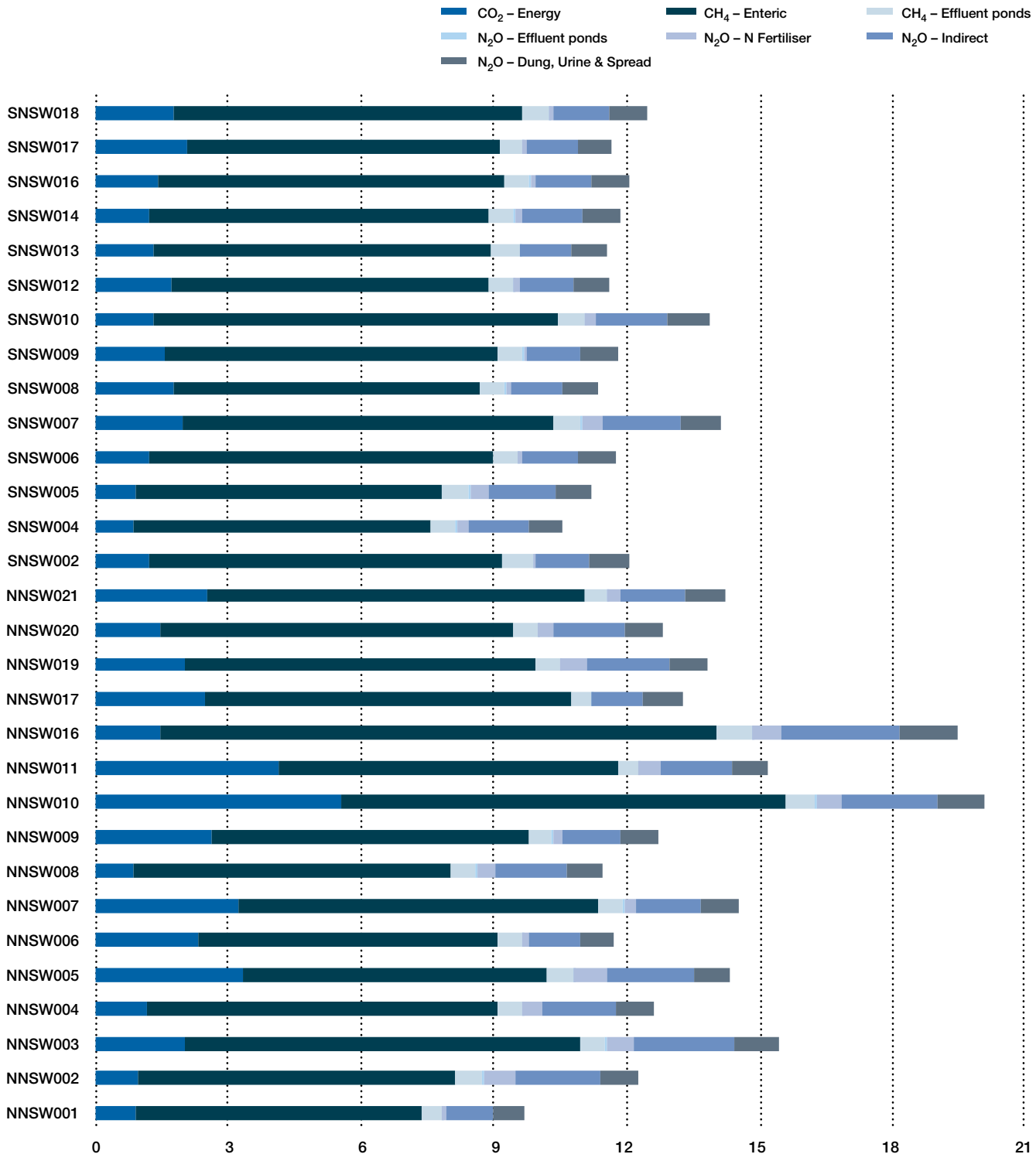
Nitrous oxide emissions from fertiliser accounted for 2% of total emissions, effluent ponds accounted for 0.1% and excreta accounted for 7%. N_2O from indirect emissions were 12%. N_2O emissions are greatest in warm, waterlogged soils with readily available nitrogen. Over application of nitrogen, high stocking intensity and wet soils are all potential causes of increased nitrogen loss as N_2O. Strategic fertiliser management practices can reduce N_2O emissions and improve nitrogen efficiency.

The third main greenhouse gas emission is carbon dioxide (CO_2), which is produced primarily from fossil fuel consumption as either electricity or petrochemicals. CO_2 accounted for 15% of total emissions or 1.9 t CO_2e/t MS. Output levels were highly dependent on the source of electricity used with all farms using brown coal generated electricity. Using renewable energy sources however, could cut electricity emissions significantly. There are also a number of technologies available to improve energy efficiency in the dairy while reducing electricity costs.

We are currently seeing the importance of understanding and monitoring greenhouse gas emissions, and this will potentially become even more essential in the near future. To find detailed information on the Australian National Greenhouse Gas Inventory, sources and strategies for reducing greenhouse gasses on dairy farms visit:
The Department of Environment's website at
www.climatechange.gov.au

Methane (CH_4) was identified as the main greenhouse gas emitted from dairy farms, accounting for 70% of all greenhouse emissions.

Figure 42: Tonnes of co_2-e emissions per tonne of milk solids produced



Part Five: Appendices

Appendix A: Statewide summary tables

Table A1: Main Financial Indicators—Statewide

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	Return on equity (incl. capital apprec.)
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	%	$/ kg MS	%	$/ kg MS	% of income	$/ kg MS	%	%
Average	$7.15	$0.85	$8.00	$4.06	$3.05	57%	$0.89	2.6%	$0.62	7.8%	$0.26	1.3%	2.1%
Top 25%	$7.13	$0.83	$7.96	$3.76	$2.39	61%	$1.81	7.0%	$0.76	9.5%	$1.04	7.2%	10.5%

Table A2: Physical Information—Statewide

Farm number	Total usable area	Milking area	Water used	Number of milking cows	Milking cows per usable area	Milk sold	Milk sold	Fat	Protein
	ha	ha	mm/ha	hd	hd/ha	kg MS/ cow	kg MS/ ha	%	%
Average	301	119	876	309	1.1	504	569	4.0%	3.3%
Top 25%	466	143	769	434	1.1	553	591	3.9%	3.3%

Table A2: Physical Information—Statewide (continued)

Farm number	Estimated grazed pasture*	Estimated conserved feed*	Home grown feed as % of ME consumed	Nitrogen application	Phosphorous application	Potassium application	Sulphur application	Labour efficiency	Labour efficiency
	t DM/ ha	t DM/ ha	% of ME	kg/ ha	kg/ ha	kg/ ha	kg/ ha	hd/ FTE	kg MS/ FTE
Average	6.1	1.1	58%	88.9	13.1	21.3	17.1	74	37,512
Top 25%	7.2	1.1	53%	46.2	8.8	7.4	5.9	89	48,573

*on milking area

Table A3: Purchased feed—Statewide

Farm number	Purchased feed per milker	Concentrate price	Silage price	Hay price	Other feed price	Average purchased feed price	Average ME of purchased feed	Average purchased feed price	Percent of total energy imported
	t DM/hd	$/ t DM	$/ t DM	$/ t DM	$/ t DM	$/ t DM	MJ ME/ kg	c/ MJ	% of ME
Average	2.6	$412	$197	$272	$567	$395	12.2	3.3	42%
Top 25%	3.1	$355	$52	$226	$93	$322	11.9	2.8	47%

Table A4: Variable costs—Statewide

Farm number	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd & shed costs	Fertiliser	Irrigation	Hay and silage making
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS
Average	$0.11	$0.16	$0.04	$0.17	$0.13	$0.60	$0.39	$0.24	$0.12
Top 25%	$0.13	$0.18	$0.02	$0.15	$0.09	$0.57	$0.27	$0.29	$0.07

Farm number	Fuel and oil	Pasture improvement/ cropping	Other feed costs	Fodder purchases	Grain/ concentrates/ other	Agistment costs	Total feed costs	Total variable costs
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS
Average	$0.17	$0.24	$0.13	$0.29	$1.80	$0.08	$3.46	$4.06
Top 25%	$0.16	$0.23	$0.16	$0.43	$1.52	$0.07	$3.19	$3.76

Table A5: Overhead costs—Statewide

Farm number	Rates	Registration & insurance	Farm insurance	Repairs & maintenance	Bank charges	Other overheads	Employed Labour	Total cash overheads	Depreciation	Imputed owner / operator & family labour	Total overheads
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS
Average	$0.06	$0.03	$0.10	$0.49	$0.02	$0.18	$0.90	$1.80	$0.40	$0.85	$3.05
Top 25%	$0.03	$0.02	$0.07	$0.36	$0.01	$0.19	$0.86	$1.55	$0.36	$0.48	$2.39

Table A6: Variable costs—Statewide

Farm number	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd & shed costs	Fertiliser	Irrigation	Hay and silage making
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
Average	1.5%	2.3%	0.5%	2.4%	1.8%	8.5%	5.3%	3.4%	1.6%
Top 25%	2.0%	2.8%	0.3%	2.4%	1.5%	9.1%	4.2%	4.3%	1.1%

Farm number	Fuel and oil	Pasture improvement/ cropping	Other feed costs	Fodder purchases	Grain/ concentrates/ other	Agistment costs	Total feed costs	Total variable costs
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
Average	2.4%	3.2%	1.8%	4.3%	25.6%	1.1%	48.9%	57.4%
Top 25%	2.5%	3.5%	2.4%	7.3%	24.8%	1.0%	51.9%	61.0%

Table A7: Overhead costs

Farm number	Rates	Registration & insurance	Farm insurance	Repairs & maintenance	Bank charges	Other overheads	Employed Labour	Total cash overheads	Depreciation	Imputed owner / operator & family labour	Total overheads
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
Average	0.9%	0.5%	1.4%	6.7%	0.3%	2.6%	12.5%	24.9%	5.7%	12.0%	42.6%
Top 25%	0.5%	0.4%	1.2%	5.5%	0.2%	3.0%	14.1%	24.9%	6.0%	8.0%	39.0%

Table A8: Capital structure

	Farm Assets				Other farm assets (per usable hectare)				
	Land value	Land value	Permanent water value	Permanent water value	Plant and equipment	Livestock	Hay and grain	Other assets	Total assets
	$/ha	$/cow	$/ha	$/cow	$/ha	$/ha	$/ha	$/ha	$/ha
Average	$18,167	$12,766	$2,219	$1,965	$2,346	$2,109	$210	$201	$21,676
Top 25%	$8,080	$7,611	$2,447	$2,444	$2,070	$2,022	$212	$57	$14,300

	Liabilities		Equity	
	Liabilities per usable hectare	Liabilities per milking cow	Equity per usable hectare	Average equity
	$/ha	$/cow	$/ha	%
Average	$5,060	$4,413	$16,615	76%
Top 25%	$5,653	$5,551	$8,647	62%

Appendix B: North summary tables

Table B1: Main Financial Indicators—North

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	Return on equity (incl. capital apprec.)
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	%	$/ kg MS	%	$/ kg MS	% of income	$/ kg MS	%	%
NNSW001	$7.38	$0.72	$8.10	$4.92	$2.19	69%	$1.00	3.2%	$0.81	10%	$0.19	1.4%	1.5%
NNSW002	$7.09	$1.32	$8.41	$3.99	$4.98	44%	-$0.57	-1.6%	$0.16	2%	-$0.73	-2.2%	-2.2%
NNSW003	$7.05	$0.85	$7.90	$5.05	$3.96	56%	-$1.11	-2.5%	$0.48	6%	-$1.59	-5.6%	-5.4%
NNSW004	$7.24	$0.59	$7.83	$5.23	$2.80	65%	-$0.20	-0.8%	$0.00	0%	-$0.20	-0.8%	-0.8%
NNSW005	$7.69	$0.75	$8.45	$4.40	$3.45	56%	$0.59	1.9%	$0.00	0%	$0.59	1.9%	1.9%
NNSW006	$7.28	$0.55	$7.82	$4.56	$2.91	61%	$0.36	0.8%	$0.94	12%	-$0.58	-2.1%	-2.3%
NNSW007	$6.71	$1.35	$8.06	$4.23	$2.27	65%	$1.55	3.3%	$0.24	3%	$1.32	3.7%	3.7%
NNSW008	$7.43	$0.37	$7.80	$3.65	$3.78	49%	$0.36	1.1%	$0.00	0%	$0.36	1.1%	1.1%
NNSW009	$7.12	$0.21	$7.33	$5.19	$2.77	65%	-$0.63	-1.4%	$1.47	20%	-$2.10	-7.0%	-6.9%
NNSW010	$7.89	$1.08	$8.97	$4.49	$4.07	52%	$0.42	0.7%	$0.37	4%	$0.05	0.1%	0.1%
NNSW011	$7.05	$0.37	$7.42	$3.79	$2.72	58%	$0.92	2.4%	$0.09	1%	$0.83	2.3%	2.3%
NNSW016	$7.03	$1.35	$8.37	$3.70	$5.50	40%	-$0.82	-1.0%	$0.35	4%	-$1.17	-7.1%	-7.2%
NNSW017	$6.83	$1.58	$8.41	$3.93	$2.57	60%	$1.90	4.2%	$2.03	24%	-$0.13	-0.7%	-0.7%
NNSW019	$6.91	$0.53	$7.44	$3.86	$3.27	54%	$0.31	0.8%	$1.39	19%	-$1.09	-8.6%	-8.8%
NNSW020	$7.26	$0.63	$7.88	$4.68	$3.17	60%	$0.04	0.1%	$1.41	18%	-$1.37	-4.1%	-4.1%
NNSW021	$6.76	$1.13	$7.90	$3.94	$3.40	54%	$0.56	0.8%	$0.44	6%	$0.11	0.2%	0.2%
Average	$7.17	$0.84	$8.01	$4.35	$3.36	57%	$0.29	0.8%	$0.64	8%	-$0.34	-1.7%	-1.7%

Table B2: Physical Information—North

Farm number	Total usable area	Milking area	Water used	Number of milking cows	Milking cows per usable area	Milk sold	Milk sold	Fat	Protein
	ha	ha	mm/ha	hd	hd/ha	kg MS/ cow	kg MS/ ha	%	%
NNSW001	303	90	848	235	0.8	612	474	3.9%	3.4%
NNSW002	108	50	784	96	0.9	443	394	4.0%	3.2%
NNSW003	238	104	1,188	370	1.6	310	481	4.1%	3.3%
NNSW004	95	80	940	150	1.6	521	823	4.1%	3.4%
NNSW005	197	100	971	280	1.4	511	726	4.1%	3.3%
NNSW006	101	100	900	201	2.0	519	1,032	3.7%	3.1%
NNSW007	255	160	860	236	0.9	526	487	3.8%	3.2%
NNSW008	292	85	947	235	0.8	518	417	3.7%	3.2%
NNSW009	300	89	771	445	1.5	541	803	3.4%	3.2%
NNSW010	361	101	967	240	0.7	398	265	3.9%	3.1%
NNSW011	180	140	1,508	330	1.8	520	954	4.8%	3.9%
NNSW016	220	116	1,119	150	0.7	297	203	4.1%	3.1%
NNSW017	607	226	915	840	1.4	415	574	3.7%	3.1%
NNSW019	148	93	1,015	232	1.6	517	810	3.7%	3.1%
NNSW020	207	55	974	191	0.9	483	445	3.9%	3.2%
NNSW021	88	50	870	120	1.4	405	552	4.8%	3.7%
Average	231	102	974	272	1.2	471	590	4.0%	3.3%

Table B2: Physical Information—North (continued)

Farm number	Estimated grazed pasture**	Estimated conserved feed**	Home grown feed as % of ME consumed	Nitrogen application	Phosphorous application	Potassium application	Sulphur application	Labour efficiency	Labour efficiency
	t DM/ ha	t DM/ ha	% of ME	kg/ ha	kg/ ha	kg/ ha	kg/ ha	hd/ FTE	kg MS/ FTE
NNSW001	3.0	0.4	28%	18.7	1.8	6.0	2.3	107	65,452
NNSW002	6.7	0.8	71%	148.2	20.5	49.5	21.4	61	26,824
NNSW003	4.5	0.5	65%	207.3	25.8	60.3	11.7	61	18,836
NNSW004	5.5	1.4	62%	197.5	18.9	113.8	8.3	52	26,971
NNSW005	8.4	1.4	64%	297.3	6.4	57.5	36.8	64	32,633
NNSW006	8.7	0.2	59%	60.6	2.0	0.0	13.7	72	37,486
NNSW007	6.7	0.6	76%	68.5	0.0	0.0	0.0	69	36,531
NNSW008	7.6	1.9	50%	93.8	11.0	21.1	5.0	68	35,039
NNSW009	9.3	0.0	34%	94.5	17.3	14.3	57.3	68	36,725
NNSW010	7.0	1.8	70%	84.1	0.0	0.0	0.0	84	33,264
NNSW011	7.4	3.2	74%	235.1	0.0	21.0	8.5	64	33,219
NNSW016	3.2	1.5	81%	80.7	21.0	34.2	12.0	71	21,185
NNSW017	2.1	1.3	56%	0.0	0.0	0.0	0.0	97	40,163
NNSW019	7.0	1.1	59%	249.3	32.4	35.5	145.7	69	35,602
NNSW020	4.2	0.2	52%	90.7	3.9	15.5	6.7	71	34,134
NNSW021	2.6	3.3	69%	78.4	37.0	0.0	46.3	75	30,290
Average	5.9	1.2	61%	125.3	12.4	26.8	23.5	72	34,022

**on milking area

Table B3: Purchased feed—North

Farm number	Purchased feed per milker	Concentrate price	Silage price	Hay price	Other feed price	Average purchased feed price	Average ME of purchased feed	Average purchased feed price	Percent of total energy imported
	t DM/hd	$/ t DM	$/ t DM	$/ t DM	$/ t DM	$/ t DM	MJ ME/ kg	c/ MJ	% of ME
NNSW001	5.0	$331	$347	$235		$321	12.1	2.7	72%
NNSW002	1.5	$486				$486	12.5	3.9	29%
NNSW003	0.8	$455		$96		$441	13.2	3.4	35%
NNSW004	2.6	$634		$494		$597	11.8	5.3	38%
NNSW005	2.0	$432	$212	$294	$587	$432	12.2	3.6	36%
NNSW006	2.9	$407	$139	$180		$326	12.4	2.8	41%
NNSW007	2.1	$581			$1,199	$596	12.9	4.7	24%
NNSW008	2.2	$399				$399	12.7	3.2	50%
NNSW009	3.8	$380		$384		$381	11.6	3.4	66%
NNSW010	1.7	$406				$406	12.7	3.2	30%
NNSW011	1.7	$532				$532	12.7	4.2	26%
NNSW016	1.0	$405			$308	$380	12.6	3.1	19%
NNSW017	2.4	$333				$333	13.0	2.6	44%
NNSW019	2.6	$392	$267			$390	12.9	3.1	41%
NNSW020	2.8	$484		$347		$467	12.0	4.0	48%
NNSW021	1.7	$424				$424	12.5	3.4	31%
Average	2.3	$443	$241	$290	$698	$432	12.5	3.5	39%

Table B4: Variable costs—North

Farm number	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd & shed costs	Fertiliser	Irrigation	Hay and silage making
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS
NNSW001	$0.00	$0.09	$0.00	$0.12	$0.13	$0.34	$0.23	$0.00	$0.01
NNSW002	$0.07	$0.11	$0.00	$0.17	$0.20	$0.55	$0.62	$0.34	$0.17
NNSW003	$0.16	$0.19	$0.05	$0.35	$0.10	$0.85	$0.69	$0.00	$0.53
NNSW004	$0.08	$0.13	$0.01	$0.21	$0.13	$0.55	$0.50	$0.01	$0.46
NNSW005	$0.13	$0.27	$0.00	$0.17	$0.18	$0.74	$0.80	$0.35	$0.23
NNSW006	$0.08	$0.18	$0.01	$0.16	$0.14	$0.57	$0.41	$0.26	$0.19
NNSW007	$0.05	$0.11	$0.00	$0.18	$0.23	$0.57	$0.09	$0.57	$0.05
NNSW008	$0.14	$0.18	$0.00	$0.12	$0.11	$0.55	$0.42	$0.06	$0.08
NNSW009	$0.13	$0.29	$0.00	$0.15	$0.13	$0.70	$0.36	$0.38	$0.03
NNSW010	$0.10	$0.30	$0.03	$0.31	$0.09	$0.82	$0.46	$0.42	$0.03
NNSW011	$0.18	$0.11	$0.09	$0.20	$0.21	$0.78	$0.32	$0.65	$0.06
NNSW016	$0.02	$0.11	$0.13	$0.18	$0.16	$0.59	$0.89	$0.01	$0.26
NNSW017	$0.20	$0.22	$0.00	$0.26	$0.07	$0.75	$0.04	$0.38	$0.12
NNSW019	$0.07	$0.09	$0.03	$0.13	$0.16	$0.48	$0.80	$0.21	$0.04
NNSW020	$0.03	$0.12	$0.23	$0.30	$0.29	$0.97	$0.38	$0.10	$0.15
NNSW021	$0.03	$0.22	$0.00	$0.23	$0.41	$0.89	$0.67	$0.31	$0.00
Average	$0.09	$0.17	$0.04	$0.20	$0.17	$0.67	$0.48	$0.25	$0.15

Farm number	Fuel and oil	Pasture improvement/ cropping	Other feed costs	Fodder purchases	Grain/ concentrates/ other	Agistment costs	Total feed costs	Total variable costs
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS
NNSW001	$0.18	$0.30	$0.66	$0.59	$2.62	$0.00	$4.58	$4.92
NNSW002	$0.32	$0.30	$0.00	$0.00	$1.64	$0.05	$3.44	$3.99
NNSW003	$0.31	$0.66	$0.27	$0.01	$1.11	$0.62	$4.20	$5.05
NNSW004	$0.11	$0.22	$0.06	$0.73	$2.35	$0.23	$4.68	$5.23
NNSW005	$0.10	$0.32	-$0.11	$0.05	$1.91	$0.00	$3.66	$4.40
NNSW006	$0.10	$0.50	$0.26	$0.37	$1.58	$0.32	$3.99	$4.56
NNSW007	$0.12	$0.28	$0.01	$0.00	$2.56	$0.00	$3.67	$4.23
NNSW008	$0.20	$0.17	$0.19	$0.00	$1.86	$0.12	$3.10	$3.65
NNSW009	$0.18	$0.21	$0.54	$0.53	$2.22	$0.02	$4.49	$5.19
NNSW010	$0.32	$0.49	$0.02	$0.00	$1.92	$0.00	$3.67	$4.49
NNSW011	$0.11	$0.12	$0.00	$0.00	$1.75	$0.00	$3.01	$3.79
NNSW016	$0.33	$0.29	$0.00	$0.00	$1.33	$0.00	$3.11	$3.70
NNSW017	$0.13	$0.25	$0.00	$0.00	$1.92	$0.34	$3.18	$3.93
NNSW019	$0.12	$0.24	-$0.02	$0.02	$1.97	$0.00	$3.38	$3.86
NNSW020	$0.20	$0.17	$0.01	$0.26	$2.43	$0.00	$3.70	$4.68
NNSW021	$0.22	$0.02	$0.00	$0.00	$1.82	$0.00	$3.04	$3.94
Average	$0.19	$0.28	$0.12	$0.16	$1.94	$0.11	$3.68	$4.35

Table B5: Overhead costs—North

Farm number	Rates	Registration & insurance	Farm insurance	Repairs & maintenance	Bank charges	Other overheads	Employed Labour	Total cash overheads	Depreciation	Imputed owner / operator & family labour	Total overheads
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS
NNSW001	$0.03	$0.01	$0.05	$0.55	$0.01	$0.18	$0.01	$0.84	$0.46	$0.88	$2.19
NNSW002	$0.09	$0.10	$0.20	$1.18	$0.03	$0.72	$1.00	$3.32	$0.57	$1.09	$4.98
NNSW003	$0.06	$0.02	$0.07	$0.51	$0.01	$0.17	$1.86	$2.70	$0.15	$1.10	$3.96
NNSW004	$0.06	$0.02	$0.00	$0.52	$0.00	$0.08	$0.56	$1.24	$0.23	$1.33	$2.80
NNSW005	$0.03	$0.02	$0.10	$0.65	$0.00	$0.08	$1.42	$2.30	$0.58	$0.57	$3.45
NNSW006	$0.03	$0.02	$0.06	$0.77	$0.06	$0.16	$0.46	$1.56	$0.25	$1.09	$2.91
NNSW007	$0.05	$0.03	$0.12	$0.31	$0.01	$0.14	$0.46	$1.10	$0.16	$1.01	$2.27
NNSW008	$0.06	$0.00	$0.00	$0.56	$0.00	$0.07	$2.53	$3.23	$0.55	$0.00	$3.78
NNSW009	$0.03	$0.02	$0.25	$0.37	$0.01	$0.27	$0.48	$1.43	$0.42	$0.92	$2.77
NNSW010	$0.08	$0.09	$0.14	$1.10	$0.01	$0.15	$1.70	$3.28	$0.79	$0.00	$4.07
NNSW011	$0.04	$0.02	$0.13	$0.15	$0.01	$0.13	$0.43	$0.91	$0.46	$1.35	$2.72
NNSW016	$0.10	$0.09	$0.22	$0.78	$0.06	$0.12	$2.10	$3.47	$0.68	$1.34	$5.50
NNSW017	$0.04	$0.04	$0.21	$0.44	$0.05	$0.33	$0.95	$2.06	$0.27	$0.24	$2.57
NNSW019	$0.03	$0.02	$0.09	$0.58	$0.03	$0.37	$1.18	$2.29	$0.38	$0.60	$3.27
NNSW020	$0.08	$0.05	$0.11	$0.38	$0.03	$0.17	$0.60	$1.44	$0.85	$0.88	$3.17
NNSW021	$0.07	$0.07	$0.19	$0.50	$0.10	$0.14	$0.14	$1.21	$0.39	$1.80	$3.40
Average	$0.05	$0.04	$0.12	$0.58	$0.03	$0.21	$0.99	$2.02	$0.45	$0.89	$3.36

Table B6: Variable costs—North

Farm number	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd & shed costs	Fertiliser	Irrigation	Hay and silage making
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
NNSW001	0.0%	1.3%	0.0%	1.7%	1.9%	4.8%	3.3%	0.0%	0.1%
NNSW002	0.8%	1.2%	0.0%	1.9%	2.2%	6.1%	6.9%	3.8%	1.9%
NNSW003	1.8%	2.1%	0.6%	3.9%	1.1%	9.5%	7.6%	0.0%	5.8%
NNSW004	1.0%	1.7%	0.1%	2.6%	1.6%	6.8%	6.3%	0.1%	5.7%
NNSW005	1.6%	3.4%	0.0%	2.2%	2.3%	9.4%	10.2%	4.5%	2.9%
NNSW006	1.0%	2.5%	0.2%	2.1%	1.9%	7.7%	5.5%	3.5%	2.6%
NNSW007	0.7%	1.7%	0.0%	2.8%	3.5%	8.7%	1.3%	8.7%	0.8%
NNSW008	1.9%	2.5%	0.0%	1.6%	1.4%	7.4%	5.7%	0.8%	1.1%
NNSW009	1.6%	3.7%	0.0%	1.9%	1.6%	8.8%	4.5%	4.8%	0.3%
NNSW010	1.1%	3.5%	0.3%	3.7%	1.0%	9.6%	5.4%	4.9%	0.3%
NNSW011	2.7%	1.7%	1.3%	3.0%	3.3%	12.0%	4.9%	10.0%	0.9%
NNSW016	0.2%	1.2%	1.4%	1.9%	1.7%	6.5%	9.7%	0.1%	2.9%
NNSW017	3.0%	3.4%	0.0%	4.0%	1.1%	11.6%	0.6%	5.9%	1.9%
NNSW019	0.9%	1.3%	0.4%	1.9%	2.3%	6.7%	11.2%	2.9%	0.6%
NNSW020	0.4%	1.5%	2.9%	3.8%	3.7%	12.4%	4.9%	1.3%	1.9%
NNSW021	0.5%	3.0%	0.0%	3.1%	5.6%	12.2%	9.1%	4.3%	0.0%
Average	1.2%	2.2%	0.4%	2.6%	2.3%	8.8%	6.1%	3.5%	1.9%

Farm number	Fuel and oil	Pasture improvement/ cropping	Other feed costs	Fodder purchases	Grain/ concentrates/ other	Agistment costs	Total feed costs	Total variable costs
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
NNSW001	2.5%	4.2%	9.2%	8.3%	36.9%	0.0%	64.5%	69.2%
NNSW002	3.5%	3.3%	0.0%	0.0%	18.3%	0.5%	38.3%	44.4%
NNSW003	3.4%	7.4%	3.0%	0.1%	12.4%	6.9%	46.6%	56.1%
NNSW004	1.4%	2.7%	0.8%	9.0%	29.3%	2.9%	58.3%	65.1%
NNSW005	1.2%	4.1%	-1.4%	0.7%	24.3%	0.0%	46.6%	56.0%
NNSW006	1.3%	6.7%	3.5%	4.9%	21.1%	4.3%	53.4%	61.1%
NNSW007	1.8%	4.3%	0.1%	0.0%	39.3%	0.0%	56.4%	65.1%
NNSW008	2.6%	2.3%	2.5%	0.0%	25.1%	1.7%	41.7%	49.1%
NNSW009	2.3%	2.7%	6.8%	6.7%	27.9%	0.3%	56.4%	65.2%
NNSW010	3.8%	5.8%	0.3%	0.0%	22.4%	0.0%	42.8%	52.4%
NNSW011	1.7%	1.8%	0.0%	0.0%	26.9%	0.0%	46.2%	58.2%
NNSW016	3.6%	3.1%	0.0%	0.0%	14.4%	0.0%	33.8%	40.2%
NNSW017	2.0%	3.8%	0.0%	0.0%	29.5%	5.2%	48.9%	60.5%
NNSW019	1.8%	3.4%	-0.2%	0.2%	27.5%	0.0%	47.4%	54.1%
NNSW020	2.6%	2.2%	0.1%	3.3%	31.0%	0.0%	47.2%	59.6%
NNSW021	3.0%	0.2%	0.0%	0.0%	24.8%	0.0%	41.5%	53.7%
Average	2.4%	3.6%	1.6%	2.1%	25.7%	1.4%	48.1%	56.9%

Table B7: Overhead costs—North

Farm number	Rates	Registration & insurance	Farm insurance	Repairs & maintenance	Bank charges	Other overheads	Employed Labour	Total cash overheads	Depreciation	Imputed owner / operator & family labour	Total overheads
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
NNSW001	0.4%	0.1%	0.8%	7.8%	0.1%	2.6%	0.1%	11.9%	6.5%	12.4%	30.8%
NNSW002	0.9%	1.1%	2.3%	13.1%	0.3%	8.0%	11.2%	37.0%	6.4%	12.2%	55.6%
NNSW003	0.7%	0.2%	0.8%	5.7%	0.1%	1.9%	20.6%	30.0%	1.7%	12.2%	43.9%
NNSW004	0.8%	0.3%	0.0%	6.5%	0.0%	1.0%	6.9%	15.4%	2.9%	16.6%	34.9%
NNSW005	0.4%	0.2%	1.2%	8.3%	0.0%	1.0%	18.1%	29.3%	7.4%	7.3%	44.0%
NNSW006	0.4%	0.2%	0.8%	10.4%	0.8%	2.2%	6.2%	21.0%	3.4%	14.6%	38.9%
NNSW007	0.7%	0.4%	1.9%	4.7%	0.1%	2.1%	7.0%	16.9%	2.5%	15.5%	34.9%
NNSW008	0.9%	0.0%	0.0%	7.5%	0.0%	1.0%	34.1%	43.5%	7.4%	0.0%	50.9%
NNSW009	0.4%	0.2%	3.1%	4.7%	0.2%	3.4%	6.0%	18.0%	5.2%	11.6%	34.8%
NNSW010	1.0%	1.0%	1.7%	12.8%	0.2%	1.8%	19.9%	38.4%	9.2%	0.0%	47.6%
NNSW011	0.6%	0.3%	2.0%	2.3%	0.1%	2.0%	6.6%	13.9%	7.1%	20.8%	41.8%
NNSW016	1.0%	1.0%	2.4%	8.5%	0.6%	1.3%	22.8%	37.7%	7.4%	14.6%	59.8%
NNSW017	0.6%	0.6%	3.3%	6.8%	0.8%	5.1%	14.6%	31.7%	4.1%	3.7%	39.5%
NNSW019	0.4%	0.2%	1.3%	8.1%	0.4%	5.2%	16.5%	32.1%	5.3%	8.4%	45.9%
NNSW020	1.1%	0.7%	1.4%	4.8%	0.4%	2.2%	7.7%	18.3%	10.9%	11.2%	40.4%
NNSW021	1.0%	1.0%	2.6%	6.8%	1.3%	1.9%	2.0%	16.5%	5.3%	24.5%	46.3%
Average	0.7%	0.5%	1.6%	7.4%	0.3%	2.7%	12.5%	25.7%	5.8%	11.6%	43.1%

Table B8: Capital structure—North

	Farm Assets				Other farm assets (per usable hectare)				
	Land value	Land value	Permanent water value	Permanent water value	Plant and equipment	Livestock	Hay and grain	Other assets	Total assets
	$/ha	$/cow	$/ha	$/cow	$/ha	$/ha	$/ha	$/ha	$/ha
Average	$17,985	$10,797	$2,467	$1,926	$,2666	$2,323	$198	$286	$22,695

	Liabilities		Equity	
	Liabilities per usable hectare	Liabilities per milking cow	Equity per usable hectare	Average equity
	$/ha	$/cow	$/ha	%
Average	$5,158	$3,948	$17,537	79%

Appendix C: South summary tables

Table C1: Main Financial Indicators—South

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	Return on equity (incl. capital apprec.)
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	%	$/ kg MS	%	$/ kg MS	% of income	$/ kg MS	%	%
SNSW002	$7.26	$1.02	$8.29	$5.73	$2.60	69%	-$0.05	-0.1%	$1.07	12.9%	-$1.12	-3.3%	-3.8%
SNSW004	$7.48	$1.24	$8.72	$3.73	$3.40	52%	$1.58	1.9%	$0.25	2.9%	$1.33	2.5%	2.5%
SNSW005	$7.47	$1.30	$8.77	$3.29	$2.48	57%	$3.00	2.9%	$0.37	4.2%	$2.63	3.1%	3.2%
SNSW006	$7.01	$0.72	$7.73	$3.86	$2.34	62%	$1.53	4.5%	$0.94	12.2%	$0.59	3.8%	3.6%
SNSW007	$7.32	$0.62	$7.94	$4.37	$2.09	68%	$1.49	4.8%	$0.65	8.2%	$0.84	4.1%	4.1%
SNSW008	$7.97	$0.17	$8.14	$4.73	$2.29	67%	$1.12	5.5%	$0.48	5.8%	$0.65	6.4%	6.3%
SNSW009	$7.13	$1.45	$8.58	$3.85	$2.60	60%	$2.12	5.2%	$1.91	22.3%	$0.21	1.0%	1.0%
SNSW010	$6.86	$2.13	$8.99	$4.12	$2.85	59%	$2.02	7.6%	$0.39	4.4%	$1.63	8.5%	7.6%
SNSW012	$7.16	$0.71	$7.86	$2.90	$3.36	46%	$1.60	6.1%	$0.82	10.4%	$0.78	5.8%	33.2%
SNSW013	$6.76	$0.42	$7.18	$2.54	$1.81	58%	$2.83	12.2%	$0.41	5.7%	$2.42	15.0%	15.1%
SNSW014	$6.82	$0.41	$7.22	$3.71	$1.79	67%	$1.73	10.4%	$0.51	7.0%	$1.22	12.9%	13.2%
SNSW016	$6.78	$0.37	$7.15	$3.44	$3.16	52%	$0.54	2.1%	$0.07	1.0%	$0.47	2.4%	2.4%
SNSW017	$6.85	$0.67	$7.52	$3.51	$3.43	51%	$0.57	1.2%	$0.00	0.0%	$0.57	1.2%	1.2%
SNSW018	$6.80	$0.88	$7.68	$2.43	$3.39	42%	$1.86	2.6%	$0.70	9.1%	$1.17	2.2%	2.2%
Average	$7.12	$0.87	$7.98	$3.73	$2.69	58%	$1.57	4.8%	$0.61	7.6%	$0.96	4.7%	6.5%

Table C2: Physical Information—South

Farm number	Total usable area	Milking area	Water used	Number of milking cows	Milking cows per usable area	Milk sold	Milk sold	Fat	Protein
	ha	ha	mm/ha	hd	hd/ha	kg MS/ cow	kg MS/ ha	%	%
SNSW002	242	80	849	262	1.1	557	603	3.9%	3.4%
SNSW004	184	117	512	188	1.0	512	523	4.0%	3.2%
SNSW005	218	100	535	256	1.2	559	656	3.9%	3.2%
SNSW006	281	76	984	350	1.2	490	610	4.1%	3.3%
SNSW007	1,569	280	543	1,007	0.6	580	372	4.0%	3.2%
SNSW008	409	150	985	775	1.9	586	1111	3.6%	3.1%
SNSW009	280	156	523	232	0.8	571	473	3.7%	3.2%
SNSW010	389	139	812	296	0.8	596	454	3.9%	3.3%
SNSW012	276	101	790	254	0.9	576	530	3.8%	3.2%
SNSW013	126	60	693	178	1.4	434	614	4.5%	3.6%
SNSW014	395	185	825	378	1.0	590	564	3.9%	3.4%
SNSW016	430	277	801	410	1.0	433	412	4.1%	3.4%
SNSW017	160	80	823	135	0.8	504	425	4.1%	3.4%
SNSW018	369	140	1,043	184	0.5	583	291	4.2%	3.3%
Average	381	139	765	350	1.0	541	546	4.0%	3.3%

Table C2: Physical Information—South (continued)

Farm number	Estimated grazed pasture**	Estimated conserved feed**	Home grown feed as % of ME consumed	Nitrogen application	Phosphorous application	Potassium application	Sulphur application	Labour efficiency	Labour efficiency
	t DM/ ha	t DM/ ha	% of ME	kg/ ha	kg/ ha	kg/ ha	kg/ ha	hd/ FTE	kg MS/ FTE
SNSW002	5.8	0.0	35%	10.6	22.2	38.9	23.1	56	31,212
SNSW004	4.8	0.0	48%	76.9	37.9	42.9	21.3	52	26,578
SNSW005	8.7	0.0	61%	145.9	36.9	48.8	23.8	82	45,842
SNSW006	8.5	0.0	54%	37.4	7.6	10.8	7.2	86	42,129
SNSW007	15.9	2.4	73%	89.3	14.8	24.7	15.6	116	67,006
SNSW008	5.8	0.0	11%	65.5	0.0	0.0	0.0	102	59,671
SNSW009	3.8	0.3	55%	20.2	2.9	0.0	6.4	69	39,348
SNSW010	5.9	1.5	69%	60.9	24.2	0.0	10.5	64	38,354
SNSW012	4.9	3.9	59%	38.3	11.9	8.0	1.3	53	30,554
SNSW013	7.2	0.0	57%	0.0	0.0	0.0	0.0	119	51,799
SNSW014	5.3	0.5	48%	58.0	8.7	15.8	6.0	101	59,723
SNSW016	2.8	0.1	51%	23.4	6.6	4.4	0.5	75	32,240
SNSW017	3.1	3.3	62%	19.5	7.4	16.8	6.2	57	28,960
SNSW018	6.1	2.3	79%	17.8	14.1	0.0	14.2	47	27,584
Average	6.3	1.0	54%	47.4	13.9	15.1	9.7	77	41,500

**on milking area

Table C3: Purchased feed—South

Farm number	Purchased feed per milker	Concentrate price	Silage price	Hay price	Other feed price	Average purchased feed price	Average ME of purchased feed	Average purchased feed price	Percent of total energy imported
	t DM/hd	$/ t DM	$/ t DM	$/ t DM	$/ t DM	$/ t DM	MJ ME/ kg	c/ MJ	% of ME
SNSW002	5.4	$428		$364		$405	10.9	3.8	65%
SNSW004	3.2	$381		$281		$361	11.7	3.2	52%
SNSW005	2.8	$401		$267		$371	11.6	3.3	39%
SNSW006	2.5	$436		$278		$423	12.5	3.4	46%
SNSW007	1.8	$390		$170	$593	$385	12.2	3.2	27%
SNSW008	4.9	$302	$184	$311		$281	11.5	2.6	89%
SNSW009	3.4	$349		$267	$150	$319	12.1	2.8	45%
SNSW010	2.2	$336	$94	$214		$291	12.3	2.4	31%
SNSW012	3.0	$347	$138	$175		$318	12.2	2.7	41%
SNSW013	3.1	$306		$188		$242	10.2	2.6	43%
SNSW014	3.5	$371		$208		$315	12.0	2.8	52%
SNSW016	2.0	$424		$333		$412	12.6	3.4	49%
SNSW017	1.9	$514		$349		$507	12.9	4.0	38%
SNSW018	1.2	$295				$295	12.9	2.3	21%
Average	2.9	$377	$139	$262	$371	$352	12.0	3.0	46%

Table C4: Variable costs—South

Farm number	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd & shed costs	Fertiliser	Irrigation	Hay and silage making
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS
SNSW002	$0.11	$0.18	$0.17	$0.09	$0.10	$0.65	$0.29	$0.00	$0.00
SNSW004	$0.16	$0.19	$0.00	$0.08	$0.09	$0.52	$0.38	$0.00	$0.07
SNSW005	$0.14	$0.13	$0.00	$0.12	$0.08	$0.47	$0.40	$0.09	$0.07
SNSW006	$0.08	$0.21	$0.00	$0.12	$0.07	$0.47	$0.35	$0.09	$0.26
SNSW007	$0.15	$0.20	$0.09	$0.21	$0.14	$0.80	$0.57	$0.36	$0.02
SNSW008	$0.32	$0.35	$0.04	$0.16	$0.13	$1.00	$0.14	$0.20	$0.00
SNSW009	$0.19	$0.16	$0.00	$0.21	$0.09	$0.66	$0.11	$0.10	$0.07
SNSW010	$0.15	$0.19	$0.00	$0.15	$0.04	$0.53	$0.38	$0.44	$0.16
SNSW012	$0.06	$0.07	$0.01	$0.07	$0.03	$0.24	$0.21	$0.24	$0.06
SNSW013	$0.01	$0.01	$0.01	$0.13	$0.15	$0.30	$0.00	$0.37	$0.00
SNSW014	$0.10	$0.26	$0.02	$0.12	$0.04	$0.54	$0.39	$0.55	$0.01
SNSW016	$0.13	$0.08	$0.08	$0.13	$0.06	$0.48	$0.16	$0.18	$0.02
SNSW017	$0.07	$0.09	$0.07	$0.09	$0.03	$0.35	$0.20	$0.17	$0.24
SNSW018	$0.08	$0.08	$0.01	$0.15	$0.06	$0.39	$0.32	$0.34	$0.20
Average	$0.12	$0.16	$0.04	$0.13	$0.08	$0.53	$0.28	$0.22	$0.08

Farm number	Fuel and oil	Pasture improvement/ cropping	Other feed costs	Fodder purchases	Grain/ concentrates/ other	Agistment costs	Total feed costs	Total variable costs
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS
SNSW002	$0.18	$0.09	$0.58	$1.30	$2.64	$0.00	$5.08	$5.73
SNSW004	$0.20	$0.08	$0.00	$0.39	$1.98	$0.11	$3.21	$3.73
SNSW005	$0.09	$0.12	$0.00	$0.41	$1.54	$0.08	$2.82	$3.29
SNSW006	$0.17	$0.16	$0.00	$0.16	$2.13	$0.07	$3.39	$3.86
SNSW007	$0.09	$0.52	$0.78	$0.06	$1.19	$0.00	$3.57	$4.37
SNSW008	$0.11	$0.23	$0.23	$1.17	$1.50	$0.14	$3.73	$4.73
SNSW009	$0.26	$0.28	$0.14	$0.22	$1.80	$0.21	$3.20	$3.85
SNSW010	$0.18	$0.36	$0.05	$0.51	$1.47	$0.04	$3.58	$4.12
SNSW012	$0.24	$0.18	$0.02	$0.14	$1.53	$0.04	$2.67	$2.90
SNSW013	$0.12	$0.02	$0.00	$0.72	$1.00	$0.00	$2.24	$2.54
SNSW014	$0.08	$0.05	$0.04	$0.48	$1.55	$0.02	$3.17	$3.71
SNSW016	$0.14	$0.21	$0.01	$0.46	$1.79	$0.00	$2.96	$3.44
SNSW017	$0.07	$0.09	$0.00	$0.11	$2.28	$0.00	$3.17	$3.51
SNSW018	$0.19	$0.13	$0.20	$0.00	$0.66	$0.00	$2.04	$2.43
Average	$0.15	$0.18	$0.15	$0.44	$1.65	$0.05	$3.20	$3.73

Table C5: Overhead costs—South

Farm number	Rates	Registration & insurance	Farm insurance	Repairs & maintenance	Bank charges	Other overheads	Employed Labour	Total cash overheads	Depreciation	Imputed owner / operator & family labour	Total overheads
	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS	$/ kg MS
SNSW002	$0.12	$0.03	$0.07	$0.20	$0.02	$0.09	$0.99	$1.52	$0.38	$0.71	$2.60
SNSW004	$0.09	$0.07	$0.10	$0.38	$0.01	$0.11	$0.52	$1.27	$0.38	$1.75	$3.40
SNSW005	$0.11	$0.02	$0.05	$0.52	$0.01	$0.06	$0.58	$1.34	$0.35	$0.79	$2.48
SNSW006	$0.02	$0.02	$0.12	$0.38	$0.00	$0.16	$1.03	$1.74	$0.38	$0.22	$2.34
SNSW007	$0.03	$0.02	$0.03	$0.34	$0.01	$0.18	$1.17	$1.78	$0.31	$0.00	$2.09
SNSW008	$0.02	$0.02	$0.06	$0.27	$0.05	$0.19	$1.23	$1.82	$0.26	$0.21	$2.29
SNSW009	$0.06	$0.01	$0.07	$0.54	$0.03	$0.14	$0.54	$1.40	$0.35	$0.85	$2.60
SNSW010	$0.03	$0.04	$0.04	$0.75	$0.01	$0.10	$0.74	$1.72	$0.41	$0.73	$2.85
SNSW012	$0.04	$0.05	$0.08	$0.36	$0.01	$0.57	$0.90	$2.00	$0.46	$0.90	$3.36
SNSW013	$0.03	$0.01	$0.10	$0.02	$0.00	$0.08	$0.65	$0.89	$0.45	$0.47	$1.81
SNSW014	$0.02	$0.01	$0.07	$0.20	$0.00	$0.08	$0.65	$1.04	$0.25	$0.50	$1.79
SNSW016	$0.09	$0.01	$0.09	$0.48	$0.00	$0.10	$0.82	$1.59	$0.42	$1.16	$3.16
SNSW017	$0.22	$0.04	$0.12	$0.50	$0.01	$0.10	$0.70	$1.68	$0.29	$1.47	$3.43
SNSW018	$0.17	$0.04	$0.08	$0.46	$0.06	$0.22	$0.70	$1.73	$0.26	$1.40	$3.39
Average	$0.07	$0.03	$0.08	$0.39	$0.02	$0.16	$0.80	$1.54	$0.35	$0.80	$2.69

Table C6: Variable costs—South

Farm number	AI and herd test	Animal health	Calf rearing	Shed power	Dairy supplies	Total herd & shed costs	Fertiliser	Irrigation	Hay and silage making
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
SNSW002	1.3%	2.2%	2.1%	1.1%	1.2%	7.8%	3.4%	0.0%	0.0%
SNSW004	2.2%	2.7%	0.0%	1.2%	1.2%	7.2%	5.3%	0.0%	1.0%
SNSW005	2.5%	2.2%	0.0%	2.0%	1.4%	8.2%	7.0%	1.6%	1.2%
SNSW006	1.3%	3.3%	0.0%	1.9%	1.1%	7.6%	5.7%	1.5%	4.1%
SNSW007	2.4%	3.1%	1.4%	3.2%	2.2%	12.3%	8.8%	5.5%	0.2%
SNSW008	4.5%	5.0%	0.5%	2.3%	1.9%	14.3%	2.0%	2.9%	0.0%
SNSW009	3.0%	2.5%	0.0%	3.3%	1.3%	10.2%	1.7%	1.5%	1.1%
SNSW010	2.2%	2.7%	0.0%	2.2%	0.6%	7.6%	5.4%	6.3%	2.3%
SNSW012	1.0%	1.0%	0.1%	1.2%	0.5%	3.8%	3.3%	3.9%	1.0%
SNSW013	0.2%	0.2%	0.3%	2.9%	3.3%	7.0%	0.0%	8.5%	0.0%
SNSW014	1.8%	4.6%	0.4%	2.2%	0.8%	9.8%	7.1%	4.0%	0.1%
SNSW016	1.9%	1.2%	1.2%	1.9%	1.0%	7.2%	2.5%	2.7%	0.3%
SNSW017	1.0%	1.3%	0.9%	1.3%	0.4%	5.0%	2.9%	2.4%	3.5%
SNSW018	1.4%	1.4%	0.2%	2.6%	1.0%	6.7%	5.6%	5.9%	3.5%
Average	1.9%	2.4%	0.5%	2.1%	1.3%	8.2%	4.3%	3.3%	1.3%

Farm number	Fuel and oil	Pasture improvement/ cropping	Other feed costs	Fodder purchases	Grain/ concentrates/ other	Agistment costs	Total feed costs	Total variable costs
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
SNSW002	2.2%	1.1%	7.0%	15.6%	31.7%	0.0%	61.0%	68.8%
SNSW004	2.8%	1.1%	0.0%	5.5%	27.8%	1.6%	45.0%	52.3%
SNSW005	1.6%	2.1%	0.1%	7.2%	26.7%	1.3%	48.9%	57.1%
SNSW006	2.7%	2.6%	0.0%	2.6%	34.3%	1.1%	54.6%	62.2%
SNSW007	1.3%	8.0%	12.1%	0.9%	18.4%	0.0%	55.3%	67.6%
SNSW008	1.6%	3.2%	3.3%	16.7%	21.4%	2.0%	53.1%	67.4%
SNSW009	4.1%	4.4%	2.2%	3.4%	27.8%	3.3%	49.5%	59.7%
SNSW010	2.5%	5.1%	0.7%	7.3%	21.1%	0.6%	51.4%	59.0%
SNSW012	3.9%	2.9%	0.3%	2.3%	24.4%	0.6%	42.5%	46.3%
SNSW013	2.7%	0.5%	0.0%	16.6%	23.0%	0.0%	51.4%	58.3%
SNSW014	1.5%	0.9%	0.7%	8.8%	28.2%	0.4%	57.6%	67.4%
SNSW016	2.1%	3.1%	0.1%	7.0%	27.1%	0.0%	44.9%	52.1%
SNSW017	1.0%	1.4%	0.0%	1.6%	32.8%	0.0%	45.6%	50.6%
SNSW018	3.2%	2.2%	3.4%	0.0%	11.3%	0.0%	35.0%	41.7%
Average	2.4%	2.8%	2.1%	6.8%	25.4%	0.8%	49.7%	57.9%

Table C7: Overhead costs—South

Farm number	Rates	Registration & insurance	Farm insurance	Repairs & maintenance	Bank charges	Other overheads	Employed Labour	Total cash overheads	Depreciation	Imputed owner / operator & family labour	Total overheads
	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs	% of costs
SNSW002	1.4%	0.4%	0.9%	2.4%	0.2%	1.1%	11.9%	18.2%	4.5%	8.5%	31.2%
SNSW004	1.2%	1.0%	1.4%	5.3%	0.1%	1.6%	7.2%	17.9%	5.3%	24.5%	47.7%
SNSW005	1.8%	0.4%	0.9%	9.0%	0.1%	1.0%	10.0%	23.2%	6.1%	13.6%	42.9%
SNSW006	0.4%	0.4%	1.9%	6.1%	0.1%	2.6%	16.6%	28.0%	6.1%	3.6%	37.8%
SNSW007	0.4%	0.3%	0.4%	5.2%	0.2%	2.8%	18.2%	27.5%	4.8%	0.0%	32.4%
SNSW008	0.3%	0.2%	0.8%	3.8%	0.7%	2.7%	17.5%	25.9%	3.8%	2.9%	32.6%
SNSW009	1.0%	0.2%	1.1%	8.4%	0.4%	2.2%	8.4%	21.7%	5.5%	13.1%	40.3%
SNSW010	0.4%	0.5%	0.6%	10.8%	0.2%	1.5%	10.6%	24.6%	5.9%	10.5%	41.0%
SNSW012	0.6%	0.8%	1.3%	5.7%	0.2%	9.1%	14.3%	32.0%	7.3%	14.4%	53.7%
SNSW013	0.7%	0.2%	2.3%	0.5%	0.1%	1.8%	14.9%	20.5%	10.4%	10.7%	41.7%
SNSW014	0.3%	0.2%	1.3%	3.7%	0.0%	1.5%	11.9%	18.9%	4.5%	9.2%	32.6%
SNSW016	1.3%	0.1%	1.4%	7.3%	0.1%	1.5%	12.4%	24.1%	6.3%	17.5%	47.9%
SNSW017	3.2%	0.6%	1.7%	7.2%	0.1%	1.4%	10.1%	24.1%	4.1%	21.1%	49.4%
SNSW018	3.0%	0.8%	1.3%	7.8%	1.0%	3.9%	12.1%	29.8%	4.5%	24.0%	58.3%
Average	1.2%	0.4%	1.2%	6.0%	0.2%	2.5%	12.6%	24.0%	5.7%	12.4%	42.1%

Table C8: Capital structure—South

	Farm Assets				Other farm assets (per usable hectare)				
	Land value	Land value	Permanent water value	Permanent water value	Plant and equipment	Livestock	Hay and grain	Other assets	Total assets
	$/ha	$/cow	$/ha	$/cow	$/ha	$/ha	$/ha	$/ha	$/ha
Average	$18,376	$15,017	$1,935	$2,009	$1,979	$1,865	$223	$104	$20,511

	Liabilities		Equity	
	Liabilities per usable hectare	Liabilities per milking cow	Equity per usable hectare	Average equity
	$/ha	$/cow	$/ha	%
Average	$4,949	$4,945	$15,562	72%

Appendix D: Glossary of terms

All other income

Income to the farm from all sources except milk. Includes livestock trading profit, feed inventory change, dividends, interest payments received, rents from cottages, rebates and grants.

Annual hours

Total hours worked by a person during the given twelve month period.

Appreciation

An increase in the value of an asset in the market place. Often only applicable to land value.

Asset

Anything managed by the farm, whether it is owned or not. Assets include land and buildings, plant and machinery, fixtures and fittings, trading stock, investments, debtors, and cash.

Break-even price required

Cost of production minus income only sourced from the main enterprise output. Allows for direct comparison with price received of main output.

Cash overheads

All fixed costs that have a cash cost to the business. Includes all overhead costs except imputed people costs and depreciation.

Cost of production

Variable costs plus overhead costs. Usually expressed in terms of the main enterprise output ie kilograms of milk solids.

Cost structure

Variable costs as a percentage of total costs, where total costs equals variable costs plus overhead costs.

Debt servicing ratio

Interest and lease costs as a percentage of gross farm income.

Depreciation

Decrease is value over time of capital asset, usually as a result of using the asset. Depreciation is not cash, but reduces the book value of the asset and is therefore a cost.

Earnings before interest & tax (EBIT)

Gross income minus total variable costs, total overhead costs.

EBIT %

The ratio of EBIT compared to gross income. Indicates the percentage of each dollar of gross income that is retained as EBIT.

Employed labour cost

Cash cost of any paid employee, including on-costs such as superannuation, workcover etc.

Equity

Total assets minus total liabilities. Equal to the total value of capital invested in the farm business by the owner/ operator(s).

Equity %

Total equity as a percentage of the total assets managed. The proportion of the total assets owned by the business.

Farm income

See gross farm income.

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.

Finance costs

Total interest plus total lease costs paid.

Full time equivalent (FTE)

Standardised people unit. Equal to 24,00 hours a year. Calculated as 50 hours a week, 48 weeks a year.

Grazed area

Total usable area minus any area used only for fodder production during the year.

Grazed pasture

Calculated using the energetics method. Grazed pasture is calculated as the gap between total energy required by livestock over the year and amount of energy available from other sources (hay, silage, grain and concentrates).

Total energy required by livestock is a factor of; age, weight, growth rate, pregnancy and lactation requirements, distance to shed and terrain, and number of animals.

Total energy available is the sum of energy available from all feed sources except pasture, calculated as (weight (kg) x dry matter content (DM %) x metabolisable energy (MJ/kg DM)).

Gross farm income

Farm income including milk sales, livestock and feed trading gains and other income such as income from grants and rebates.

Gross margin

Gross income minus total variable costs.

Herd costs

Cost of 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 cost of owner/operator, family and sharefarmer time in the business, taken as the greater of $400 per cow less employed labour or $25 per hour.

Liability

Money owed to someone else, eg family or an institute such as a bank.

Metabolisable energy

Energy available to livestock in feed, expressed in megajoules per kilogram of dry matter (MJ/kg DM).

Milk income

Income through the sales of milk.

Milking area

Total usable area minus outblocks or run-off areas.

Net farm income

Previously reported as business profit

Earnings before interest and tax minus interest and lease costs. The amount of profit available for capital investment, loan principal repayments and tax.

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 external sources. Includes dividends, interest payments received, rents from cottage, rebates and grants.

Overhead costs

All fixed costs incurred by the farm business e.g. rates, administration, depreciation, insurance, imputed labour. Interest, leases, capital expenditure, principal repayments and tax are not included.

Labour cost

Cost of the labour resource on farm. Includes both imputed and employed labour cost.

Labour efficiency

FTEs per cow and per kilogram of milk solid. Measures of productivity of the total labour resources in the business.

Labour resource

Any person who works in the business, be they the owner, family, sharefarmer or employed on a permanent, part time or contract basis.

Livestock trading profit

An estimate of the annual contribution to gross 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. An increase in livestock trading indicates there was an appreciation of livestock or an increase in livestock numbers over the year.

Return on assets (RoA)

Earnings before interest and tax divided by the value of total assets under management.

Return on equity (RoE)

Net farm income divided by the value of total equity.

Shed costs

Cost of shed power and dairy supplies such as filter socks, rubber ware, vacuum pump oil etc.

Total income

See gross farm income.

Total usable area

Total hectares managed minus that area of land which is of little or no value for livestock production eg house and shed area.

Total water used

Total rainfall plus average irrigation water used expressed as millimetres per hectare, where irrigation water is calculated as; (total megalitres of water used/total usable area) x 100.

Variable costs

All costs that vary with the size of production in the enterprise eg herd, shed and feed costs.

Appendix E: List of abbreviations

AI	Artificial insemination.
BPR	Break-even price required.
c/l	Cents per litre.
CoP	Cost of production.
DFMP	Dairy Farm Monitor Project.
DM	Dry matter of feed stuffs.
DPI	Department of Primary Industries New South Wales.
EBIT	Earnings before interest and tax.
FTE	Full time equivalent.
ha	Hectares.
hd	Head of cattle.
kg	Kilograms.
ME	Metabolisable energy (MJ/kg).
MJ	Megajoules of energy.
mm	Millimetres. 1 mm is equivalent to 4 points or 1/25th of an inch of rainfall.
MS	Milk solids (proteins and fats).
Q1	First quartile, i.e. the value of which one quarter, or 25%, of data in that range is less than.
Q3	Third quartile, i.e. the value of which one quarter, or 25%, of data in that range is greater than.
RoA	Return on assets.
RoE	Return on equity.
t	Tonne = 1,000 kg.





Dairy Australia ABN 60 105 227 987
Level 5, IBM Centre
60 City Road, Southbank VIC 3006 Australia
T + 61 3 9694 3777 F + 61 3 9694 3701
E enquiries@dairyaustralia.com.au
www.dairyaustralia.com.au

Dairy Australia
Your Levy at Work