DEPARTMENT OF
PRIMARY INDUSTRIES

Dairy Industry Farm Monitor Project

Summary of Results 2007/2008

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ACKNOWLEDGMENTS

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

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To find out the latest information on the project visit the project website at www.dpi.vic.gov.au/dairyfarmmonitor

Find out more information about DPI on the internet at http://www.dpi.vic.gov.au

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PRIMARY INDUSTRIES

Dairy Industry Farm Monitor Project

Summary of Results 2007/2008

EXECUTIVE SUMMARY

This is the second year of the Dairy Industry Farm Monitor Project in Victoria. The project aims to provide the Victorian dairy industry with valuable farm level data relating to productivity gains and profitability, as well as identify the key drivers of productivity and profitability growth.

Data was collected from 73 farms from across three regions of Victoria; Northern Victoria, South West Victoria and Gippsland. Participants have been selected with the objective of representing a distribution of farm sizes, herd sizes and geographical locations within each region. 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.

The results from the 2007/08 year reflected the strong world price for milk. The average profitability across the participant farms was $2.39 per kilogram of milk solids sold or $1,460 per hectare. This equated to an average return on assets across the state of 10%.

The majority of participants expect there to be either no change or an improvement in farm business returns over the next 12 months. There is a high expectation that the cost of most inputs will rise, particularly fuel and oil.

A greenhouse gas emission audit was conducted using the Australian National Greenhouse Gas Inventory method. The average level of greenhouse gases emitted was 10.8 tonnes per tonne of milk solids produced which is similar to the 10.3 tonnes per tonne of milk solids produced in 2006/07.

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NOTES ON THE PRESENTATION OF DATA IN THIS REPORT

This report is presented in 7 parts;

- **Statewide overview**
- **North region overview**
- **South West region overview**
- **Gippsland region overview**
- **Business confidence survey**
- **Greenhouse report**
- **Appendices**

The appendices include detailed data tables, a list of abbreviations and a glossary of terms.

The report presents visual descriptions of the data for the 2007/08 year. Data is presented for individual farms, regional averages and regional top 25% of farms ranked on earnings before interest and tax per hectare. 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. The top 25% of farms are presented as striped bars in the regional overview graphs. Earnings before interest
and tax has been used as the determinate of the top producers due to the subjective nature of asset valuation resulting in return on assets being a less certain figure. 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 of data in that range is less than. The Q3 value is the quartile 3 value. That is, the value of which one quarter of data in that range is greater than. This means that the middle 50% of data sits in the Q1-Q3 data range. Given the differences in variation in the regional data, caution is highly recommended when comparing one region to another.

Detailed data can be found in the appendix tables.

Milk production data is presented in kilograms of milk solids as farms are paid according to milk solids.

To reduce wordiness, this report will often refer to the group of participating farms in each region by their regional name;

- The 25 participating farms in the Northern Victoria region are referred to as 'the North'.
- The 24 participating farms in the South Western Victoria region are referred to as 'the South West'.
- The 24 participating farms in the Gippsland region are referred to as 'Gippsland'.

Percentage differences are calculated as [original – different value]/[original] e.g. 'costs went from $80/ha to $120/ha, a 50% increase'; [(80-120)/80] = [40/80] = 0.50, unless otherwise stated.

The methodology used is a combination of that used in the South West Farm Monitor Project, Taking Stock and various other referenced sources. Attention should be paid to methodology when directly comparing figures from this report with those generated via other means.

The report will focus on measures on a per hectare basis, with occasional referral to measure on a per kilogram of milk solids sold or per cow basis. The appendix tables contain the majority of financial information in a per kilogram of milk solids basis. This is done to give a broader range of information and to ensure that data is presented in the format relevant to the discussion.

Top 25% consists of 6 farms in all regions and 18
farms on a statewide basis. The 18 farms in the statewide top 25% are taken by considering all 73 as the one sample and not from combining the top 6 farms from each region.

Discussion on 'last year' refers to the 2006/07 Dairy Industry Farm Monitor Project report. Farms that were included in last years 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.

Please note that this data was collected during June and some forecasting of costs and production has occurred.

WHAT'S NEW IN 2008!

The Dairy Industry Farm Monitor Report for 2007/08 includes a number of changes sine last years report. The following highlights the most significant of those.

- The reporting of data around cost and productivity of the people in the dairy business has been updated to be consistent with the terminology and coefficients used in Dairy Australia's *The People in Dairy* project. A full time equivalent has been updated to be 50 hours per week, to give a total annual hours of 2,400 hours per year. This means that if comparing data with the 2006/07 report, the people productivity data will need to be converted. To do this, multiply last years results by 1.25. Alternatively you can multiply this years results by 0.80 to equate to last years figures. This does not effect the calculations for cost of people given the per cow or hourly rate for owners, family and sharefarmers were not changed.
  For a more in depth analysis on the people in dairy, see the project feature article available through the project website. We thank The People In Dairy project for their input into these improvements.
- Some names of terms have been changed to more closely reflect industry standards.
  The most notable of these is the use of the term Earnings Before Interest and Tax (EBIT) as opposed to Operating Profit as it was reported last year. Term changes are indicated in the glossary.
- Figures in the regional chapters have been extended to include the average data from the 2006/07 report where applicable.
- A section has been added to the Statewide overview on risk and different risk ratios are also discussed through the text in the regional summaries.
- Some minor adjustments have been made to the appendix tables. Care should be taken if comparing sets of data from one year to the next. Also, the glossary has been extended.

Keep an eye on the project website for further reports and updates on the project.

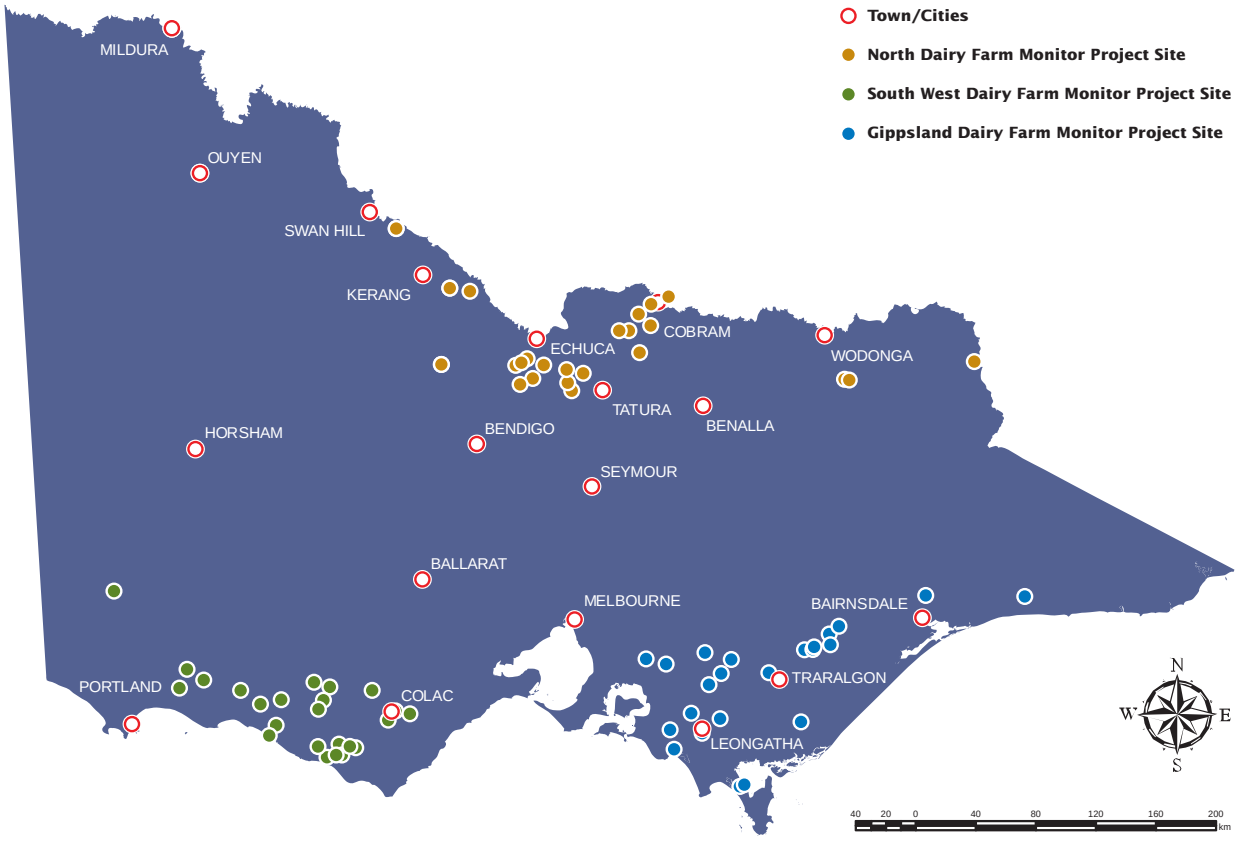
www.dpi.vic.gov.au/dairyfarmmonitor

PART ONE: STATEWIDE OVERVIEW

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

The approximate location of the participating farms is shown in Figure 1.

FIGURE 1: DISTRIBUTION OF FARMS ACROSS VICTORIA.

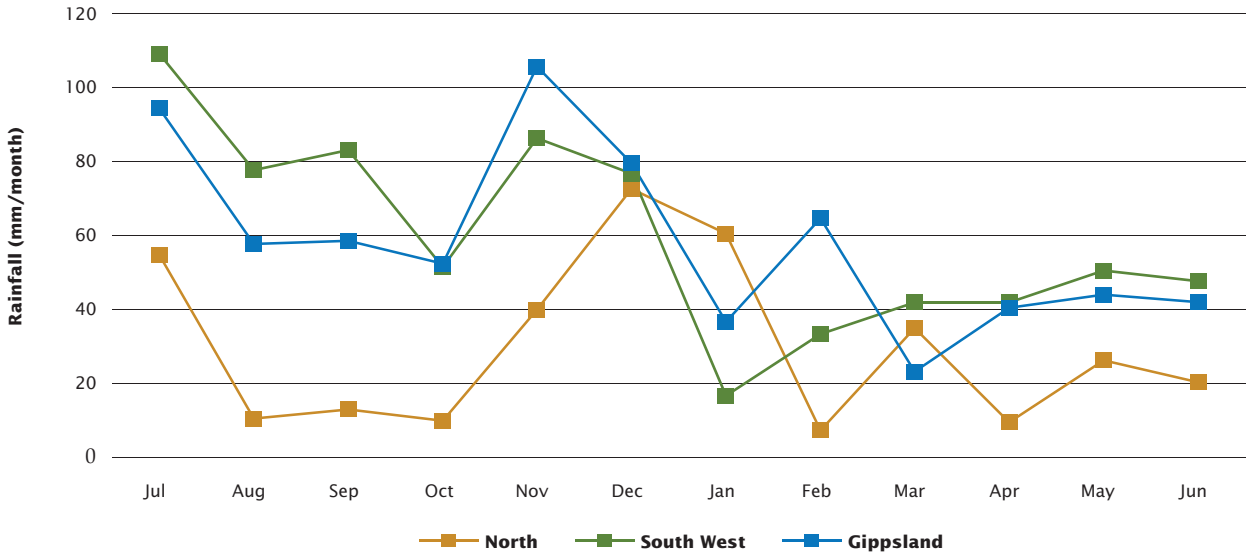


2007/08 SEASONAL CONDITIONS

The average rainfall across the farms in each region was below the long term averages. The North received 360mm over the year, approximately 74% of the long term average for these farms of 485mm. Farms in the South West received on average 716mm, or 89% of their long term average rainfall of 803mm. Gippsland received an average of 699mm, which is equivalent to 84% of their long term average rainfall of 832mm. Figure 2 shows the rainfall pattern during the year and the wide variation that occurred.

The regional chapters provide more detail on the 2007/08 seasonal conditions.

FIGURE 2: 2007/08 MONTHLY RAINFALL



WHOLE FARM ANALYSIS

On average, farms in the South West ran the largest herds over the largest area. Gippsland had a much smaller average useable area compared to the other two regions at 181 hectare, but the much higher average stocking rate of 1.6 resulted in a similar production of milk solids per hectare. Cows in the north had the highest average production across the year.

Total water use per hectare was down in the North as there was limited allocation of irrigation water as well as below average rainfall. The two main systems, the Murray and the Goulburn, closed at 43% and 57% allocations respectively for the year. Conversely, the Macalister Irrigation District in Gippsland had a 200% allocation resulting from some very heavy falls in that catchment during June and November 2007. Table 1 suggests that as much water was used for irrigation per hectare on Gippsland farms as in the North during 2007/08.

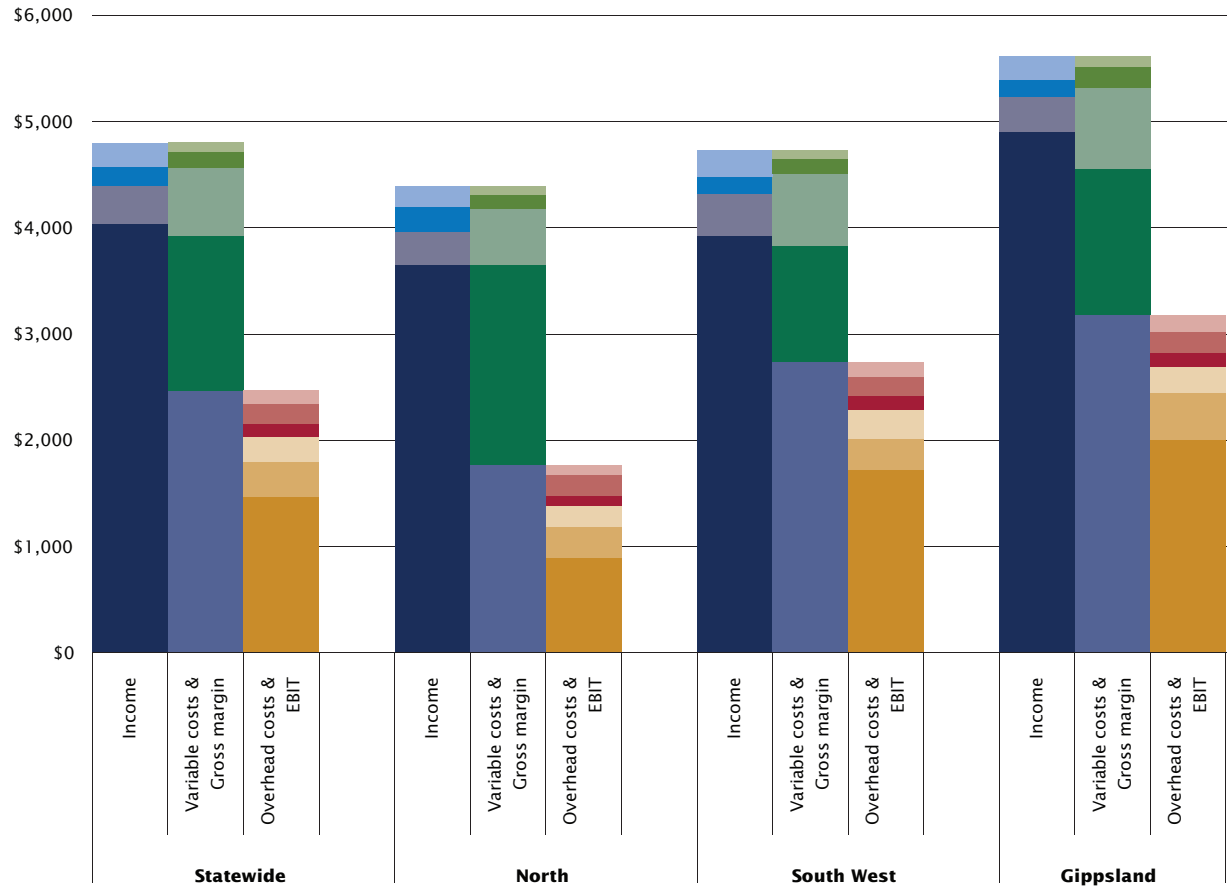
Average people productivity was similar between the regions.

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

TABLE 1: FARM PHYSICAL DATA

Farm physical parameters	Statewide	North	South West	Gippsland
Number of farms in sample	73	25	24	24
Herd size (max no. milker for at least 3 months)	332	321	387	289
Annual rainfall 07/08	588	360	716	699
Water used (irrigation + rainfall) (mm/ha)	683	490	728	838
Total useable area (hectares)	265	294	320	181
Stocking rate (milking cows per useable hectares)	1.3	1.1	1.2	1.6
Milk sold (kg MS /cow)	489	511	489	464
Milk sold (kg MS /ha)	612	559	591	741
Milk price received ($/kg MS)	$6.61	$6.57	$6.60	$6.66
People productivity (milking cows / FTE)	98	96	95	102
People productivity (kg MS / FTE)	47,726	49,309	46,638	47,345

FIGURE 3: AVERAGE FARM FINANCIAL PERFORMANCE PER HECTARE



See Table 2 for the legend on Figure 3.

Figure 3 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 *violet* gross margin values. From the gross margin we subtract the *red/orange* overhead costs to give us the *gold* earnings before interest and tax. The legend for Figure 3 and the values for category can be found in Table 2.

GROSS FARM INCOME

Gross farm income includes all farm income, whether that is income from milk sales, an increase 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.

The variation in gross income per hectare between the regions closely reflects the stocking rates of the three regions. While Figure 3 shows just how much milk income dominates gross income, other sources are still important to the farm business. In the North, income from sources other than milk totalled $743 per hectare, which was more than 80% of the average earnings before interest and tax of $888 per hectare.

Milk prices were key in the much higher average income per hectare in all regions compared to the 2006/07 average. Across the state, milk income per hectare increased by $1,200. While some of this may be explained in the sampling of farms, the near 50% increase on last year's price per kilogram of milk solids was the major factor.

TABLE 2: AVERAGE FARM FINANCIAL PERFORMANCE PER HECTARE

Farm income and cost category	Statewide	North	South West	Gippsland
INCOME				
Feed inventory gain	$221	$189	$251	$224
Other farm income	$187	$241	$154	$154
Livestock trading	$348	$313	$392	$332
Milk income (net)	$4,021	$3,649	$3,876	$4,906
Total income	$4,778	$4,392	$4,672	$5,616
VARIABLE COSTS				
Livestock trading loss	$0	$0	$0	$0
Shed cost	$86	$81	$83	$98
Herd cost	$148	$127	$135	$205
Home grown feed cost	$639	$532	$672	$761
Purchased feed, inventory loss and agistment	$1,448	$1,885	$1,073	$1,372
Total variable costs	$2,321	$2,625	$1,964	$2,437
GROSS MARGIN				
per hectare	$2,457	$1,767	$2,709	$3,179
OVERHEAD COSTS				
Other overheads	$125	$92	$139	$158
Repairs and maintenance	$190	$193	$183	$197
Depreciation	$118	$99	$128	$131
Employed people	$232	$194	$263	$242
Imputed people cost	$330	$301	$288	$452
Total overhead costs	$995	$879	$1,001	$1,179
EARNINGS BEFORE INTEREST AND TAX				
per hectare	$1,462	$888	$1,708	$1,994

VARIABLE COSTS

Variable costs are costs directly associated with production. Examples include animal health, contract services, supplementary feeding, agistment and pasture costs. Figure 3 shows the large cost of purchased feed and agistment (seen as dark green), particularly in the North. Home grown feed was the other major variable cost. The cost of feed accounted for around 90% of total variable costs in all regions. The high milk price will have allowed for the use of high cost inputs such as fertiliser and grain to have remained economic on the majority of farms. See Appendix Tables 6 for a breakdown of variable costs as a percentage of total costs in each region.

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, it can be a useful measure in dairy for analysis changes on farm that don't require capital investment.

OVERHEAD COSTS

Overhead costs or 'fixed costs' are relatively unresponsive to small changes in the scale of operation of a business. Examples include depreciation, administration, repairs and maintenance and the cost of peoples time. Imputed people 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 people cost is calculated as the greater of $400 per cow less paid people cost (the method used in Taking Stock) or $15 per hour of imputed people time.

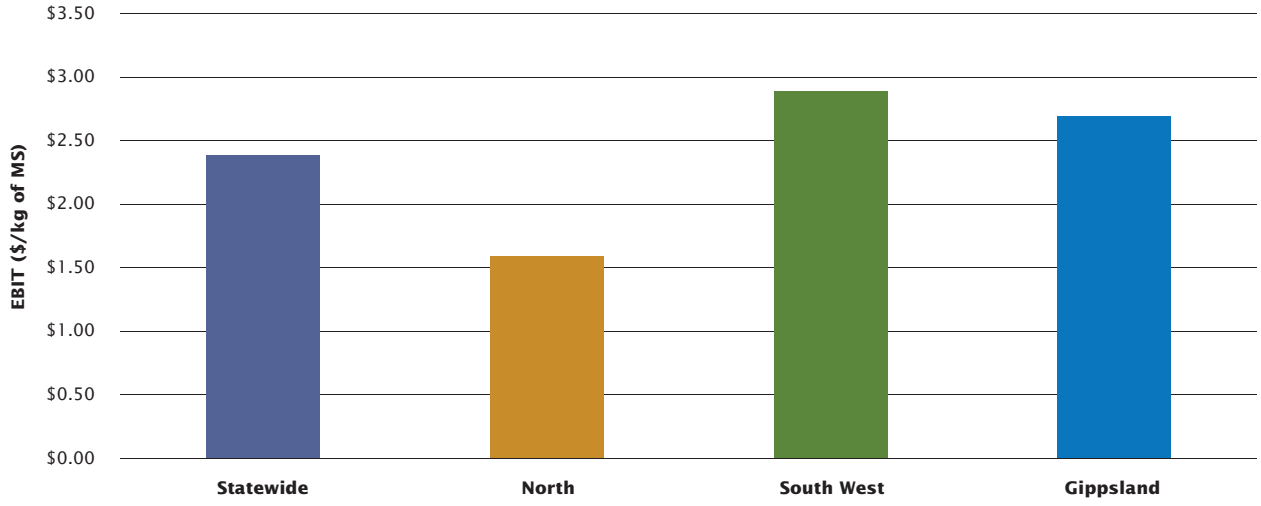
Table 2 shows that participants in Gippsland had a much higher average imputed people costs per hectare than those in the other two regions, which relates to the higher stocking rate of the region. The North incurred lower total overhead costs per hectare than the other two regions, thanks mainly to lower depreciation, employed people and other overheads costs. On a per kilogram of milk solids basis (see Appendix Tables 5), there is little difference in the averages.

EARNINGS BEFORE INTEREST AND TAX

Earnings before interest and tax (EBIT) is the gross income, less variable costs and overhead costs including imputed costs. As this Figure excludes tax and interest and lease costs, it can be used to compare the operational efficiency of the whole farm business.

Figure 4 below, as per kilogram of milk solids, and Table 2 above, as per hectare, both show strong average EBITs in all three regions. Average EBITs of $888, $1,708 and $1,994 for the North, the South West and Gippsland respectively see a high proportion of the gross income retained as earnings available to pay interest and tax, and then capital expenditure or personal expenditure above the imputed level. These average EBITs were substantially up on the 2006/07 average. Figures 17, 28 and 39 in the regional chapters provide a visual representation of the turnaround in EBIT between the samples this year and last.

FIGURE 4: AVERAGE EARNINGS BEFORE INTEREST AND TAX PER KILOGRAM OF MILK SOLIDS SOLD

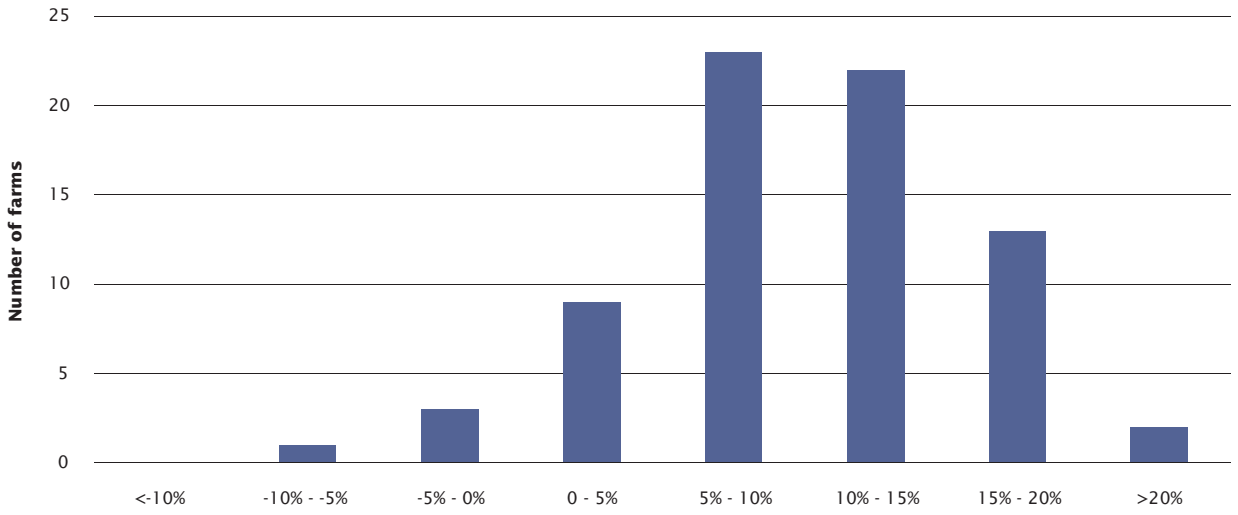


RETURN ON ASSETS AND ON EQUITY

The return on assets is the earnings before interest and tax expressed as a percentage of total farm assets 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. Return on assets is sometimes referred to return on capital.

The average return on assets for participants across the state was 10%, with a range of -6% to 21% and a median of 10% also (see Appendix Tables 1). 60 of the 73 participant farms had a return on assets greater than 5%, with only 4 farms returning a negative EBIT and thus return on assets in this economic analysis.

FIGURE 5: DISTRIBUTION OF FARMS BY RETURN ON ASSETS

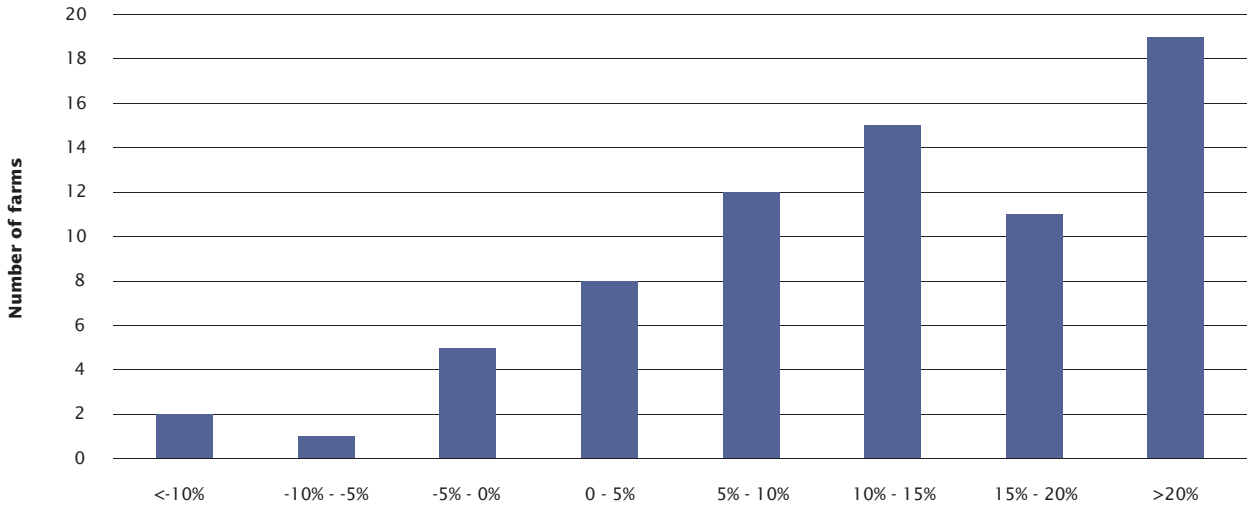


Return on equity is the net farm income (earnings before interest and tax less interest and lease charges) expressed as a percentage of owner equity. Items not accounted for in net farm income are loan principle repayments and tax. Return on equity is a measure of the owner's rate of return on their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

The average return on equity for the 73 farms during 2007/08 was 12%. During 2007/08 the All Ordinaries Price Index lost 15% on its opening value, superannuation funds on the whole saw losses of anywhere up to 15% and the official cash rate was around 7% (with no capital gains). In short, dairy farming was a strong option in the broader economy during 2007/08 as a place to have capital invested. Figure 6 shows that only 8 of all 73 participants had a negative return on equity in this analysis, with 19 having a return on equity of greater than 20%.

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

FIGURE 6: 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…"[1]

Table 3 presents some risk ratios.

TABLE 3: RISK RATIOS

	Statewide	North	South West	Gippsland
Cost structure	69%	80%	63%	64%
Debt services ratio (percentage of income as finance costs)	8%	7%	9%	8%
Debt per cow	$3,100	$2,808	$3,412	$3,021
Equity percentage (ownership of total assets managed)	71%	73%	71%	71%
Percentage of feed imported (as a % of total ME)	36%	53%	29%	26%

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. It thus holds that in regions where risk is higher, less risk is taken. While in good times this will result in lower returns, in bad times it will lessen the losses.

The North has a much greater exposure to fluctuations in prices and supply in the market for feed given the greater use of imported feed stuffs. Conversely, the North on average had a slightly lower exposure to financial risk given the greater equity held. Higher equity levels mean lower exposure to changes in interest rates.

The benefit of taking some risks and borrowing money can be seen in the many farms that had a return on equity higher than their return on assets. Fifty farms in total where able to borrow money or lease land and make a return from the extra available capital beyond the cost of having access to it, i.e. interest or lease charges. In some cases this magnification was substantial (see Appendix Tables 1). If the net profit was negative, this magnification of return on equity by borrowing would also have occurred, but in the negative.

The ratios in Table 3 can be found in Appendix Tables 1, 3 and 8 for each region. The higher the ratio (or lower with equity %), the greater the exposure to the risk of a shock in those areas of the business. Further, the data in Appendix Tables 4 and 5 are in cost per kilograms of milksolids sold. This data is best used as risk ratios, given it is measured against the product produced and sold currently and not the capital invested.

[1] 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 7 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.

While grazed pasture was the major component of the average cows diet in all regions, the dependence of the North on conserved feed in 2007/08, be it home grown or purchased, is clear. Thirty percent of the North's ME was sourced from conserved feed, compared to 18% in the South West and 12% in Gippsland. All regions are dependent on concentrates with average proportion of ME sourced from concentrates at 28% (North), 24% (South West) and 22% (Gippsland).

Appendix Tables 3 give further information on purchased feed.

FIGURE 7: SOURCES OF WHOLE FARM METABOLISABLE ENERGY

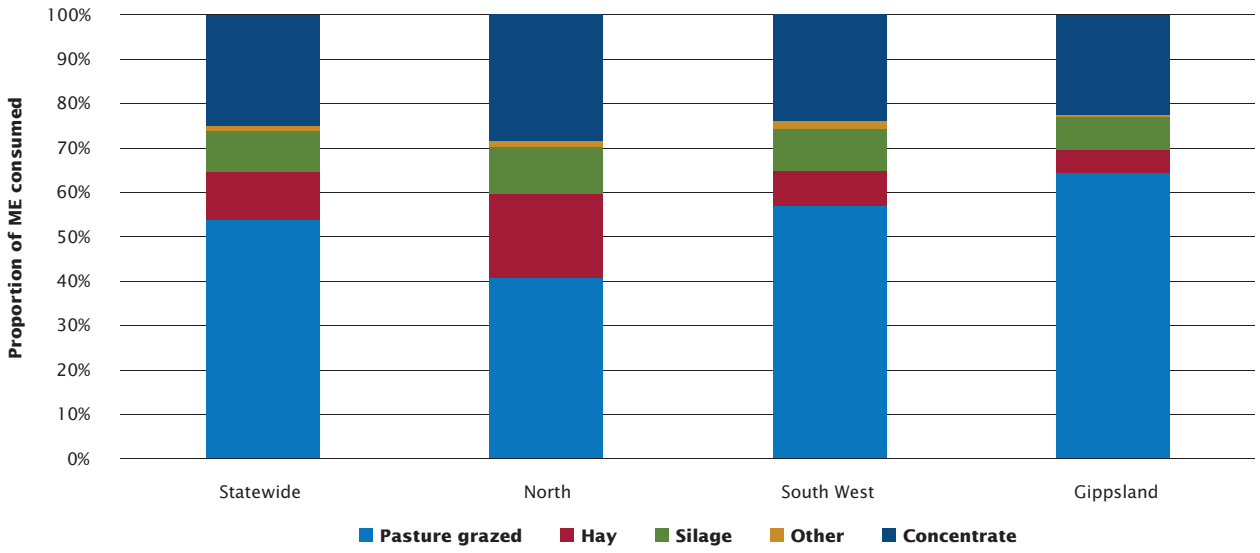
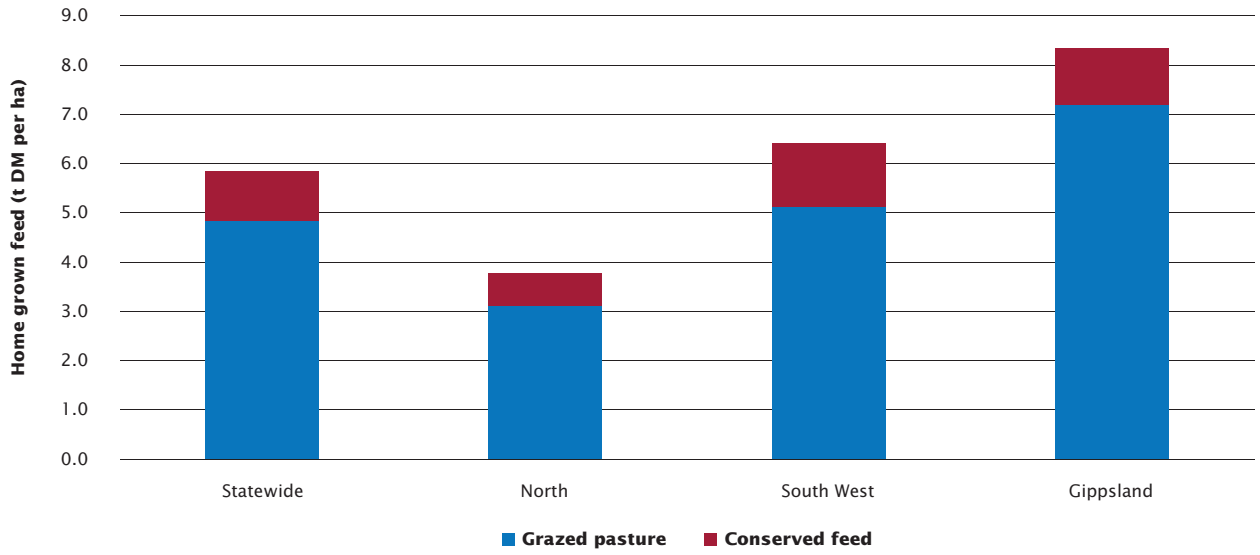


Figure 8 shows the average estimated home grown feed production per hectare. Both Figures 7 and 8 were estimated using an Energetics method. This involves first a calculation of the total energy required on the farm, which is a factor of stock numbers held on the farm, the stock weights, distance the 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 gown feed produced per hectare will be dependent on numerous factors, with water availability, fertiliser application rates and grazing management being central. The lack of total water available in the North will have had a marked affect on the group average. The average estimates were, as grazed feed and conserved feed, 3.1t/ha and 0.7t/ha for the North, 5.1t/ha and 1.3t/ha for the South West and 7.2t/ha and 1.1 t/ha for Gippsland.

Appendix Tables 2 give estimates of individual tonnes of home grown feed produced per hectare.

FIGURE 8: ESTIMATED TONNES OF HOME GROWN FEED PRODUCED PER HECTARE

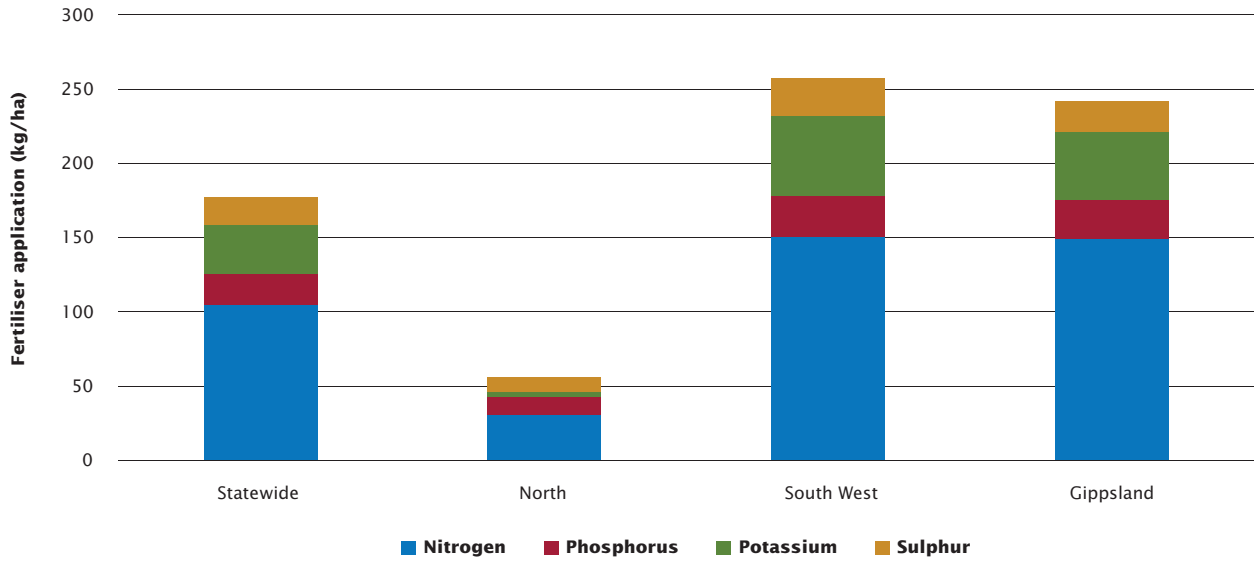


FERTILISER APPLICATION

Figures 8 and 9 do not show a direct relationship between estimated home grown feed produced and fertiliser applied per hectare. 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. Gippsland and the South West had very similar rates of application of key macronutrients. There was a slightly higher rate of potassium application in the South West, at 53kg/ha compared to 45kg/ha in Gippsland. Farms in the North applied approximately three quarters of fertiliser to the irrigated portion of their total useable area in 2007/08.

Appendix Tables 2 give further information on fertiliser application.

FIGURE 9: FERTILISER APPLICATION PER HECTARE

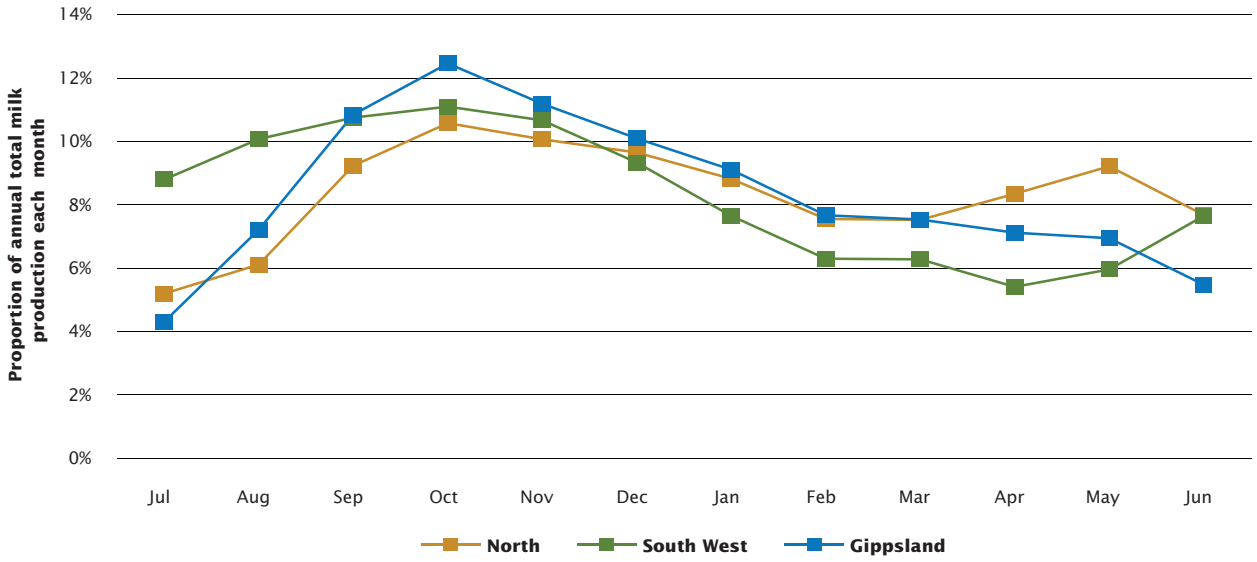


The digestion of feed in the rumen and the use of fertiliser are major sources of greenhouse gases on dairy farms. A summary of greenhouse gas emissions can be found on page 46 of this report.

MILK PRODUCTION

Average distribution of milk production in all regions saw the main production peak in spring, but only the North saw another small peak in autumn 2008. Gippsland farms on average experienced the most rapid increase in production coming into the 2007 spring, going from 4.3% of total production in July to 12.5% by October. The South West had a much smoother average peak production across winter and spring.

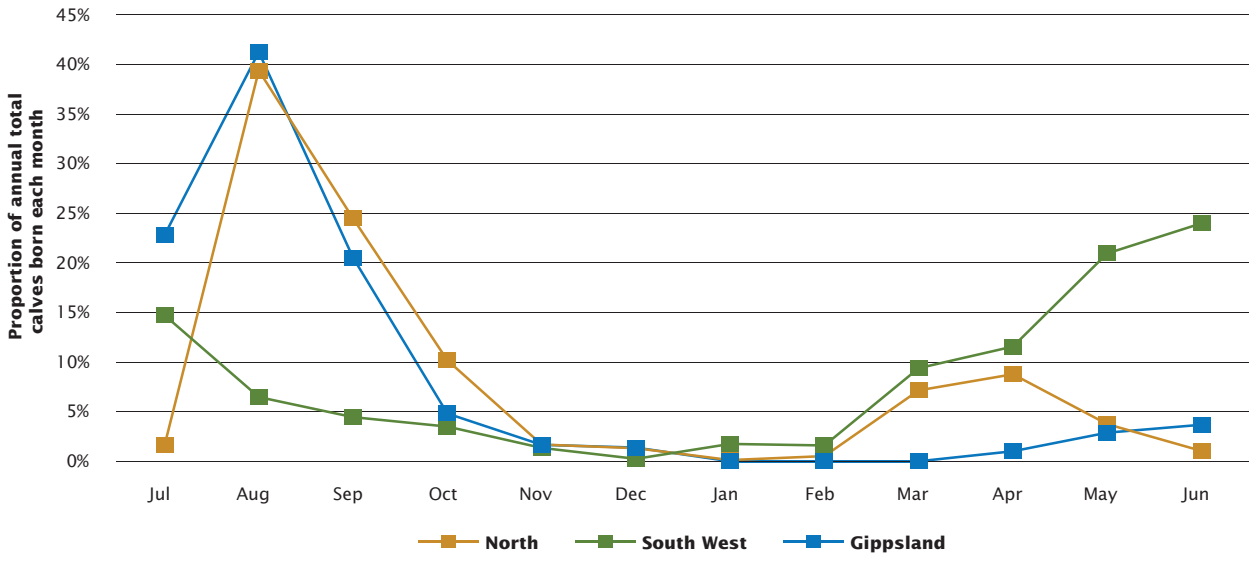
FIGURE 10: MONTHLY DISTRIBUTION OF MILK PRODUCTION



CALVING PATTERN

The milk production shown in Figure 10 follows a similar pattern to the calving pattern shown in Figure 11 below, with a two to three month delay. This can be seen best in the peak production and peak calving times. Gippsland had a very concentrated calving pattern, with 41% of calves born in August and 85% born in the three months of winter. There were no calves born on the participant farms in Gippsland during the three months from January to March. The North achieved a similarly concentrated calving pattern, with 39% of calves born in August and 74% between August and October. The smoother peak in milk production of the South West mirrors the smoother calving pattern.

FIGURE 11: MONTHLY DISTRIBUTION OF CALVES BORN



PART TWO: NORTH

Farms ranked in the top 25% by earnings before interest and tax per hectare are shown as the striped bars in all graphs. Farms NO001 to NO018 were included in the 2006/07 sample. Please refer to page 6 for notes on the presentation of data.

2007/08 SEASONAL CONDITIONS

FIGURE 12: 2007/08 ANNUAL RAINFALL AND LONG TERM AVERAGE RAINFALL – NORTH

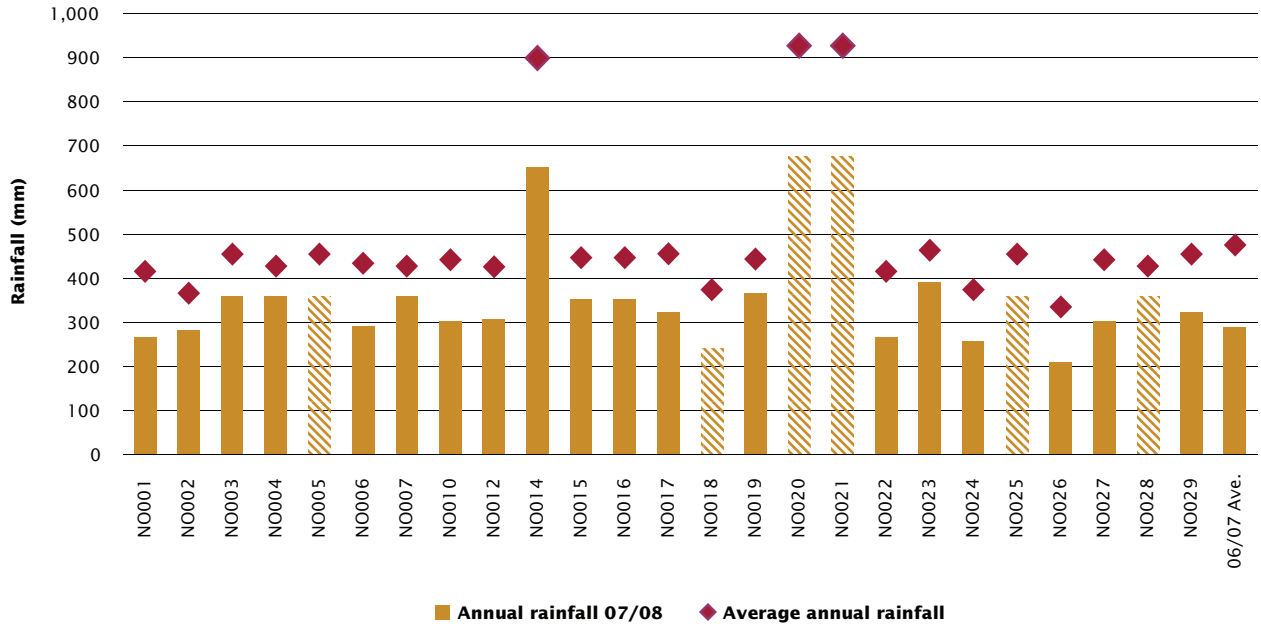


Figure 12 shows the difficult climatic conditions participants across the North faced during the 2007/08 year. For many of these businesses, this was compounded by a reduced irrigation allocation. The maximum seasonal allocation for 2007/08 on the Murray system was 43% and the Goulburn system was 57%. The low water allocations, were compounded by the availability and the increased cost of supplementary feed. Having the cash flow to source good quality feed was an issue for many dairy farmers in the region.

WHOLE FARM ANALYSIS

Table 4 below presents the key whole farm physical parameters for the North. The Q1 – Q3 range shows the band in which the middle 50% of farms for each parameter sit.

The top 25% of farms ranked on earnings before interest and tax per hectare had higher annual rainfall and grew more home grown feed as a % of ME consumed. These top farms also had a higher stocking rate, and sold more milk solids per hectare.

TABLE 4: FARM PHYSICAL DATA – NORTH

Farm physical parameters	North average	Q1 to Q3 range	Top 25% average
Annual rainfall 07/08	360	291 – 359	445
Water used (irrigation + rainfall) (mm/ha)	490	437 – 554	549
Total useable area (hectares)	294	143 – 427	235
Stocking rate (milking cows per useable hectares)	1.1	0.9 – 1.9	1.4
Milk sold (kg MS /cow)	511	466 – 560	532
Milk sold (kg MS /ha)	559	475 – 891	771
Home grown feed as % of ME consumed	47%	34% – 64%	62%
People productivity (milking cows / FTE)	96	077 – 115	115
People productivity (kg MS / FTE)	49,309	38,743 – 58.258	61,168

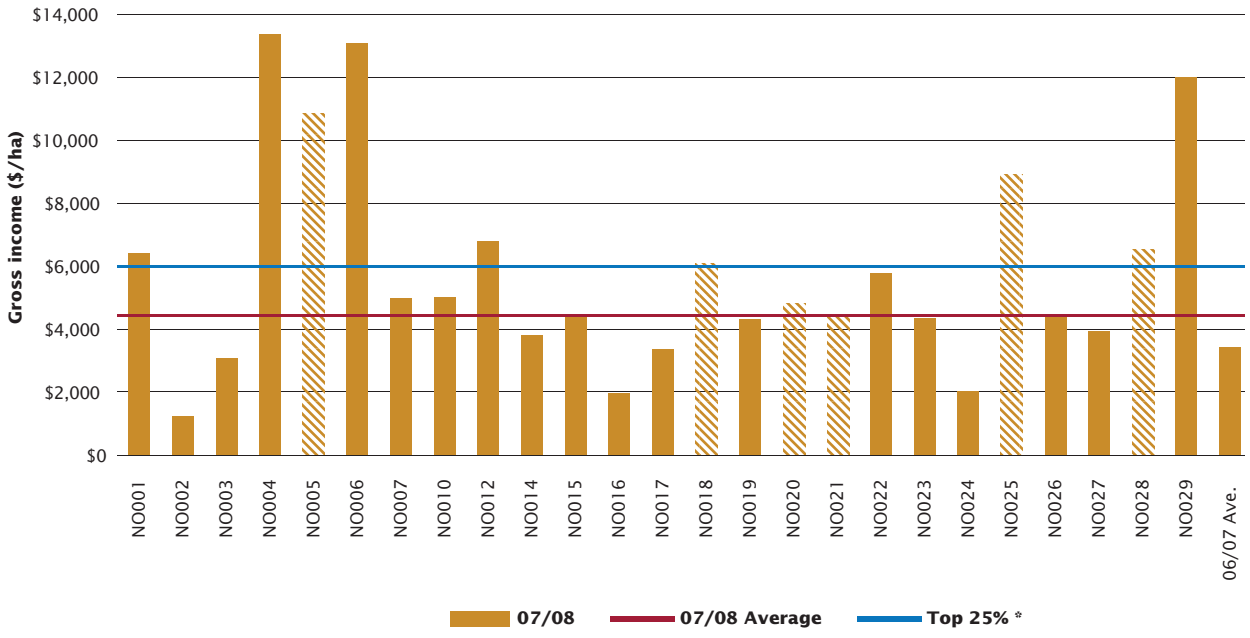
GROSS FARM INCOME

Gross farm income includes all farm income, whether that is income from milk sales, an increase in inventories of stock or feed or cash income from livestock trading. Figure 13 shows that the top 25% of farms had a higher gross income than the average for the North. It also shows that the top farms ranked on Earnings before interest and tax per hectare did not necessarily have the highest gross income per hectare.

The group average gross income was $4,390/ha, while the top 25% achieved $5,990/ha. The average gross income increased by about 30%, up from $3,420/ha in 2006/07. This increase was mainly due to record milk prices which are reflected in the results which show a 41% increase in average milk price to $6.53/kg MS in 2007/08.

It should be noted that the effects of drought over the past few seasons has meant that some farmers have changed their farming system to be more reliant on purchased feed. This means that some farms have a high percentage of imported feed, which can be seen in Appendix Table A2. This has impacted on the per hectare indicators.

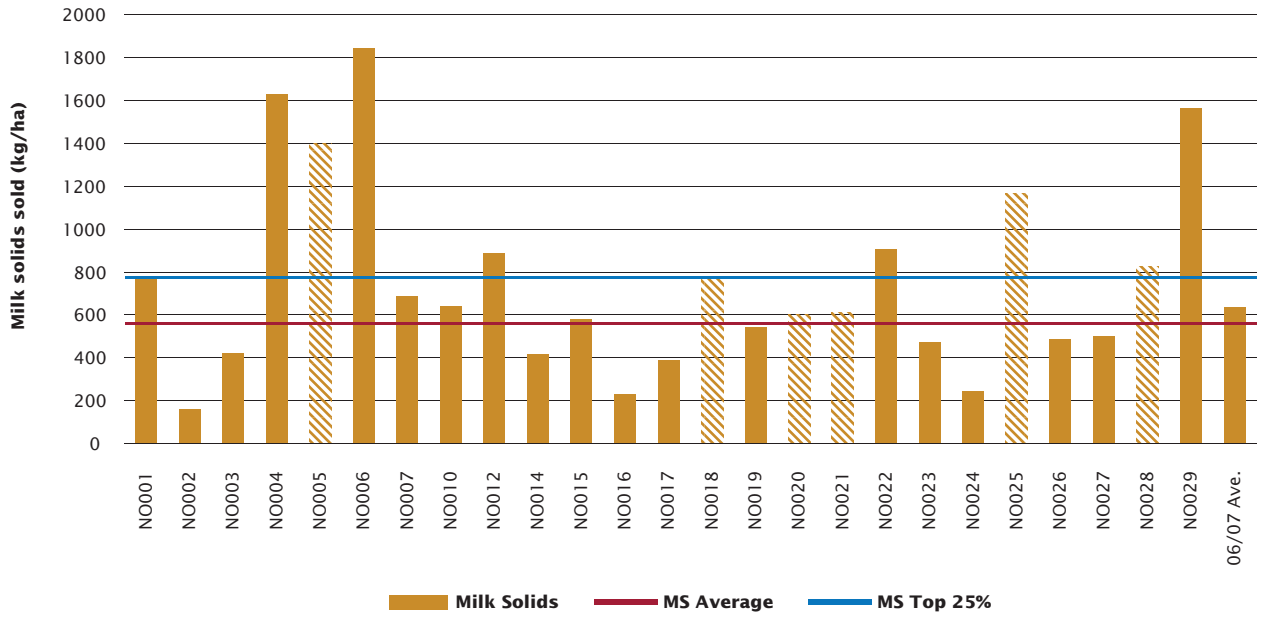
FIGURE 13: GROSS FARM INCOME PER HECTARE – NORTH



MILK SOLIDS PRODUCTION

Figures 13 and 14 show the very strong correlation between income and milk solids sold per hectare. The top 25% of farms in the North produced an average 771kg MS/ha more than the whole group average at 559kg MS/ha.

FIGURE 14: MILK SOLIDS SOLD PER HECTARE – NORTH

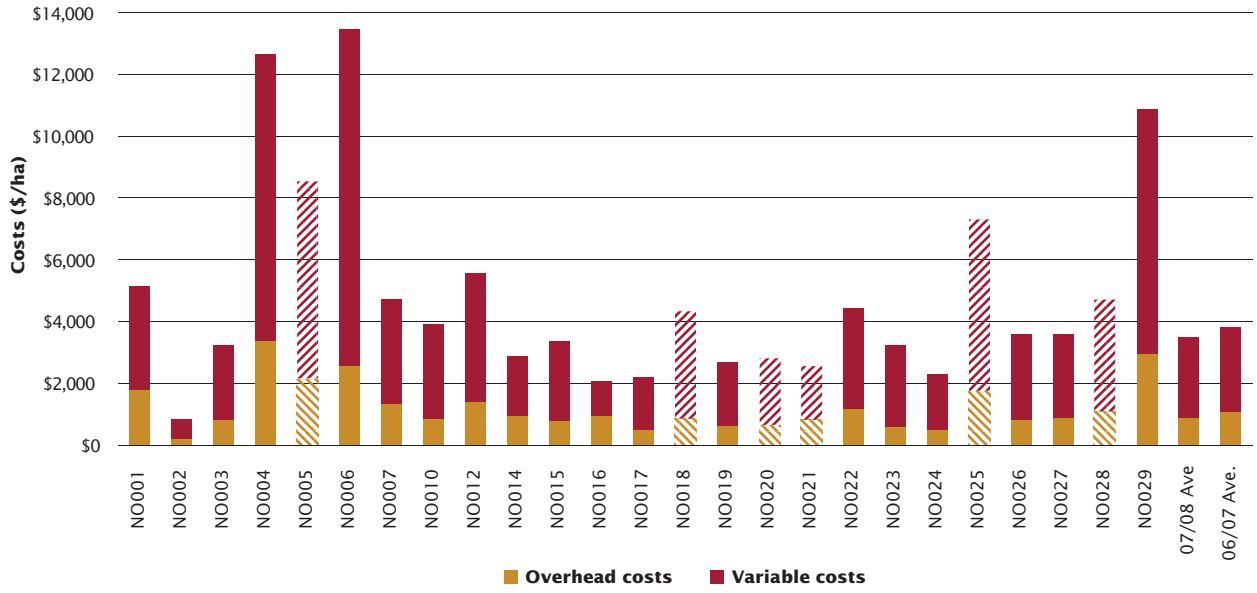


VARIABLE COSTS

Table 5 shows that the top 25% of farms had equal or lower costs per kilogram of milk solids sold in most categories when compared to the average of the entire North. In particular, the top 25% farms spent 17% less on purchased feed, inventory loss and agistment. A break down of variable costs for the individual businesses can be seen in Appendix Table A4.

The wide range in total variable costs per hectare is seen in Figure 15. The average for the region, presented as the second last bar on the right of Figure 15, was $2,630/ha. The percentage breakdown of the individual totals is presented in Appendix Table A6.

FIGURE 15: WHOLE FARM VARIABLE AND OVERHEAD COSTS PER HECTARE – NORTH



OVERHEAD COSTS

Figure 15 illustrates the overhead costs per hectare, which includes imputed people cost and depreciation. There was a large range of overhead costs amongst the farms. Appendix Tables A5 and A7 show that much of this variation is from the large differences in imputed people cost between participants. Imputed people cost accounted for an average of 38% of the total overhead costs, or $300/ha, and varied from $0/ha to $2,580/ha. 20 farms had an imputed people cost of less than $700/ha.

Repairs and maintenance and employed people both averaged $190/ha across the region.

COST OF PRODUCTION

Figure 15 and Table 5 present both variable and overhead costs to give the total cost of production per hectare and per kilogram of milk solids sold respectively. Given as total per kilogram of milk solids sold, the cost of production is a useful risk ratio. By comparing this figure to gross farm income, the percentage of gross income retained as earnings (EBIT %) can be obtained.

TABLE 5: COST OF PRODUCTION - NORTH

Farm costs ($ / kg MS)	North average	Q1 to Q3 range	Top 25% average
VARIABLE COSTS			
Herd costs	$0.23	$0.19 – $0.28	$0.22
Shed costs	$0.15	$0.12 – $0.16	$0.17
Purchased feed, inventory loss and agistment	$3.36	$2.73 – $4.20	$2.78
Home grown feed cost	$0.95	$0.52 – $1.18	$0.91
Livestock trading loss	$0.00	$0.00 – $0.00	$0.00
Total variable costs ($ / kg MS)	$4.68	$4.36 – $5.40	$4.08
OVERHEAD COSTS			
Rates	$0.03	$0.02 – $0.03	$0.03
Registration and insurance	$0.02	$0.01 – $0.02	$0.01
Farm insurance	$0.04	$0.03 – $0.05	$0.03
Repairs and maintenance	$0.35	$0.20 – $0.38	$0.25
Bank charges	$0.01	$0.00 – $0.02	$0.01
Other overheads	$0.07	$0.04 – $0.10	$0.06
Depreciation	$0.18	$0.06 – $0.21	$0.15
Employed people	$0.35	$0.10 – $0.35	$0.23
Imputed people cost	$0.54	$0.47 – $0.80	$0.52
Total overhead costs ($ / kg MS)	$1.57	$1.29 – $1.93	$1.29
Total cost of production ($ / kg MS)	$6.26	$5.67 – $7.17	$5.37

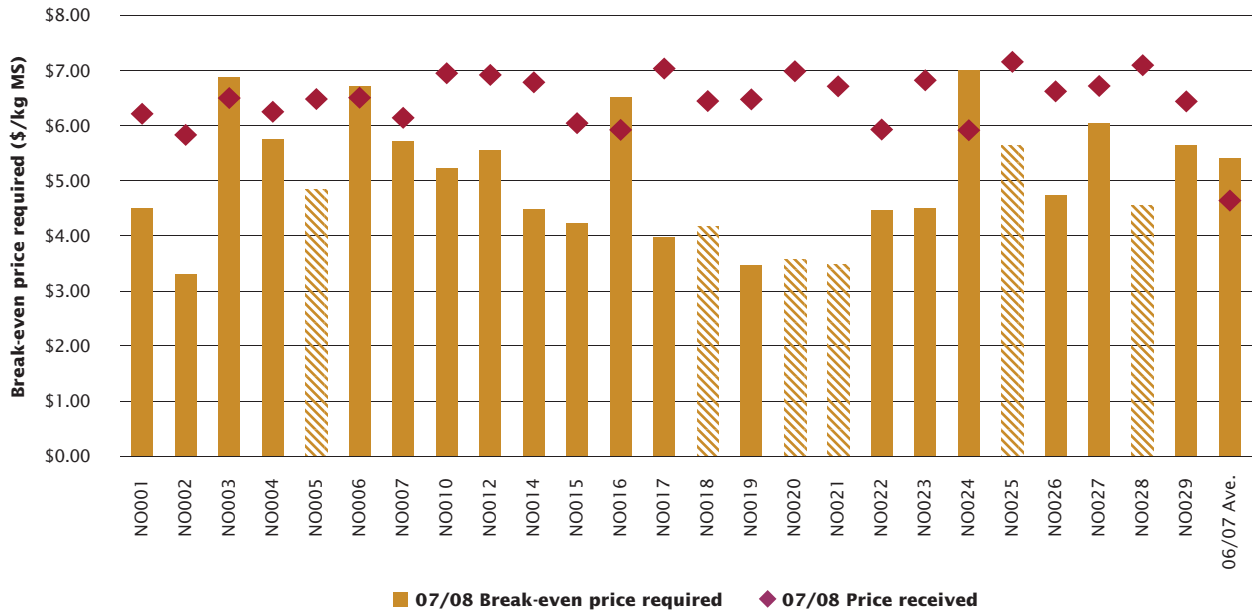
BREAK-EVEN PRICE REQUIRED

The break-even price required for milk is calculated as the cost of production less any livestock trading profit or increase in feed inventory or other income. That is; the sum of variable and overhead costs, livestock trading loss and decrease in feed inventory, less any livestock trading profit, increase in feed inventory or other income.

Figure 16 shows that the break-even price required varies from $3.29 per kg MS to $7.01 per kg MS and the price received varies from $5.83 per kg MS to $7.16 per kg MS. The results show that 20 participant farms achieved a profit which is shown below where the purple diamond is above the yellow column.

The difference between the price received and the break-even price required is the earnings before interest and tax per kilogram of milk solids.

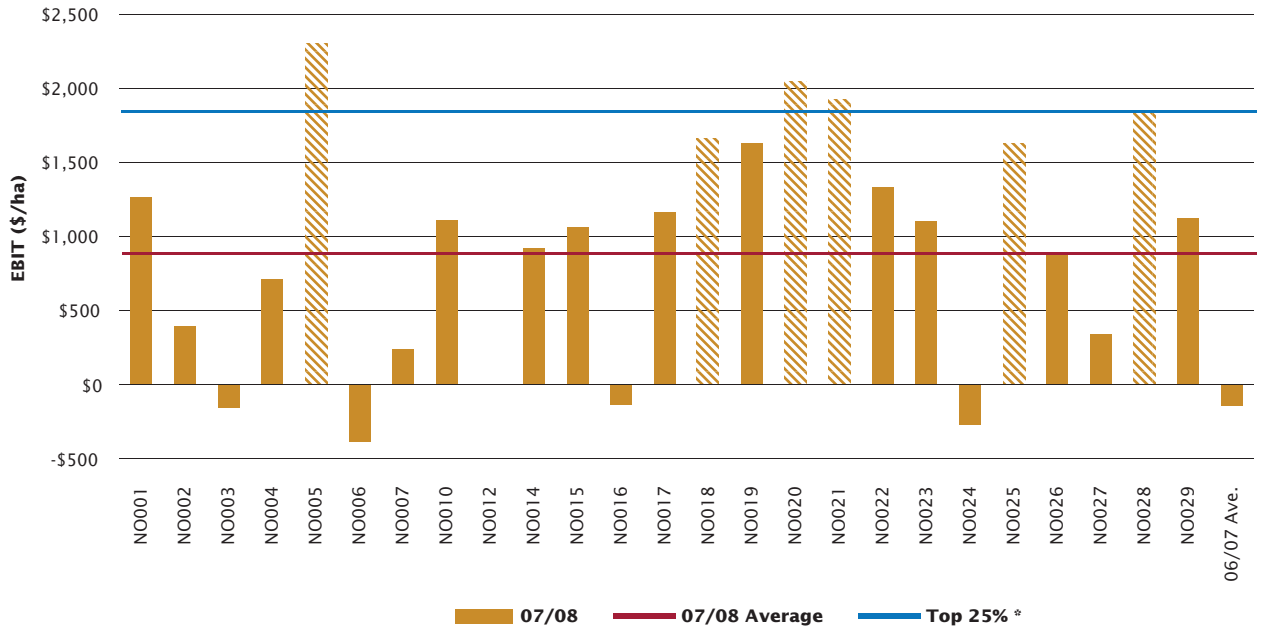
FIGURE 16: BREAK-EVEN PRICE REQUIRED PER KILOGRAM OF MILK SOLIDS SOLD – NORTH



EARNINGS BEFORE INTEREST AND TAX

Earnings before interest and tax is the gross income, less variable costs and overhead costs. Figure 17 shows that the majority of farms from in the North achieved a positive earnings before interest and tax in the 2007/08 year. This positive return was achieved despite the low rainfall, low water allocations and high feed costs. The turn-around in the groups average was $1,030/ha; from -$140/ha in 2006/07 to $890/ha this year.

FIGURE 17: WHOLE FARM EARNINGS BEFORE INTEREST AND TAX PER HECTARE – 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 business profit expressed as a percentage of owner equity. It is a measure of the owner's rate of return on investment. Figures 18 and 19 were calculated excluding capital appreciation. For return on equity including capital appreciation refer to Appendix Table A1.

Figure 18 shows the distribution of return on assets in 2007/08. The graph shows that 21 farms achieved a positive return on assets while only 4 of the farms had a negative return on assets in this analysis. The group achieved an average return on assets of 7% while the top 25% achieved 12%.

FIGURE 18: RETURN ON ASSETS – NORTH

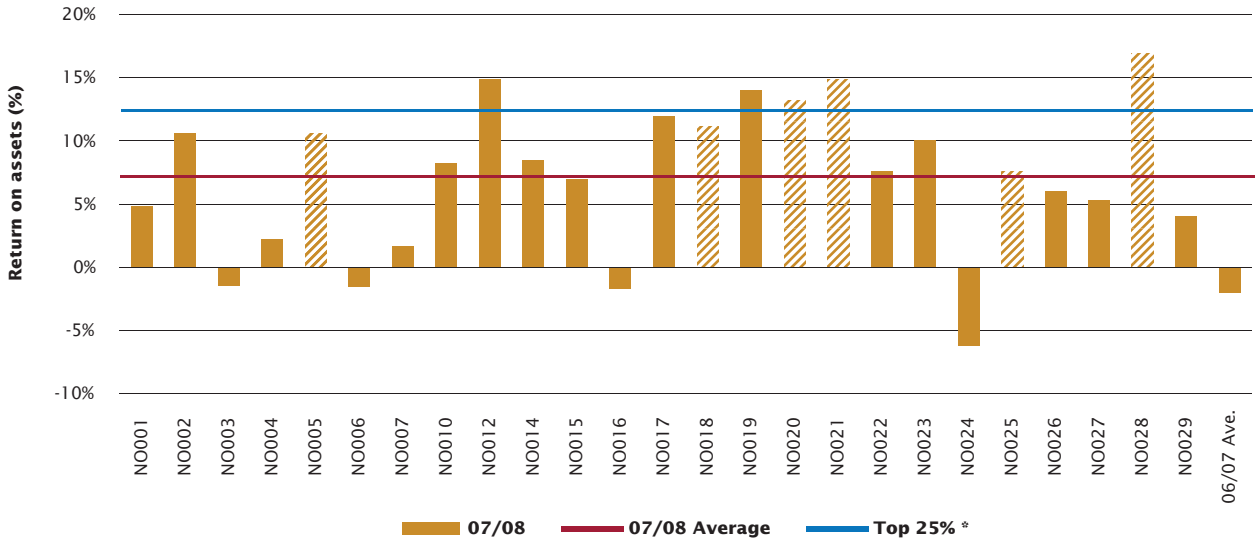
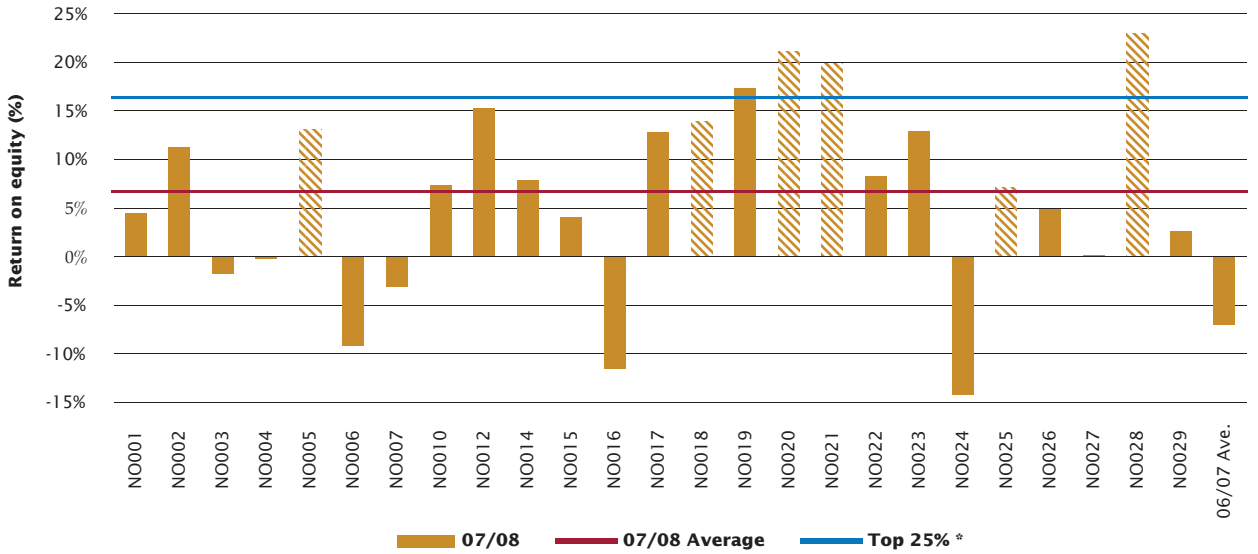


Figure 19 shows the distribution of return on equity in 2007/08. The graph shows that 19 farms achieved a positive return on equity while 6 farms had a negative return on equity. As a whole, the North achieved an average return on equity of 7% while the top 25% achieved 16%. The fact that the return on equity was the same as the return on assets means that the average interest on loans or lease on leased capital was similar to the average earnings from that financed capital.

FIGURE 19: RETURN ON EQUITY – NORTH



FEED CONSUMPTION

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

Figure 20 shows the relative contribution of each feed type to the ME consumption on the farm. The broad range in relative sources is evident. For two thirds of the farms surveyed in the North, grazed pasture contributed less than half of the ME consumed on farm.

FIGURE 20: SOURCES OF WHOLE FARM METABOLISABLE ENERGY – NORTH

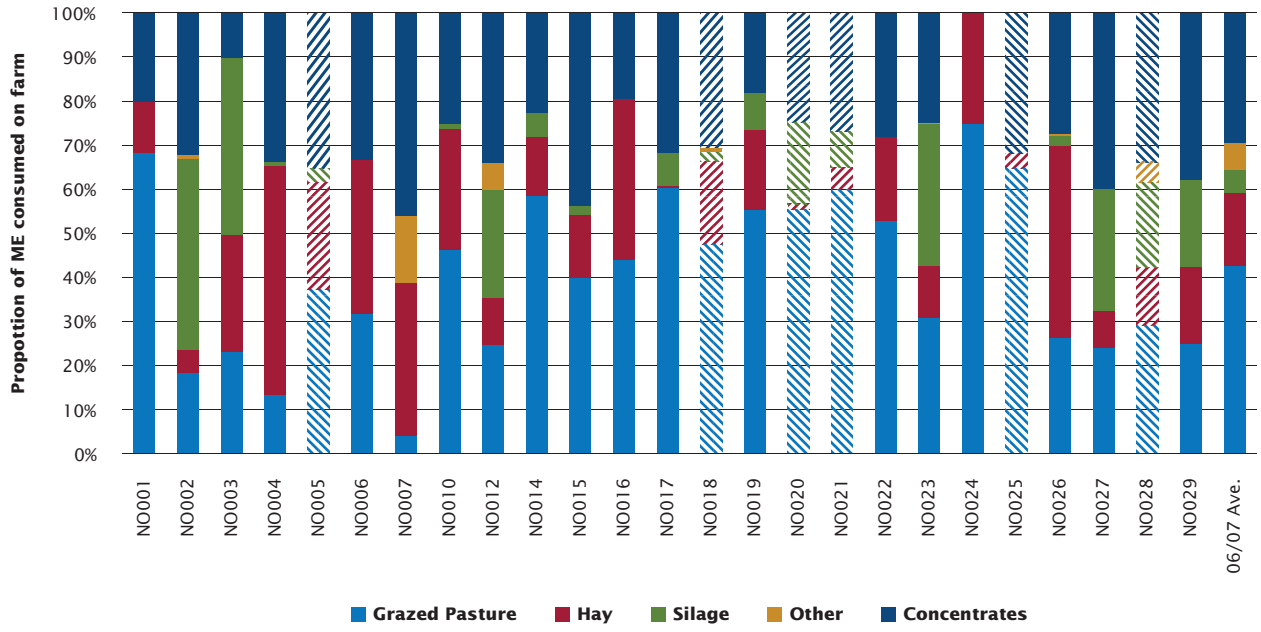
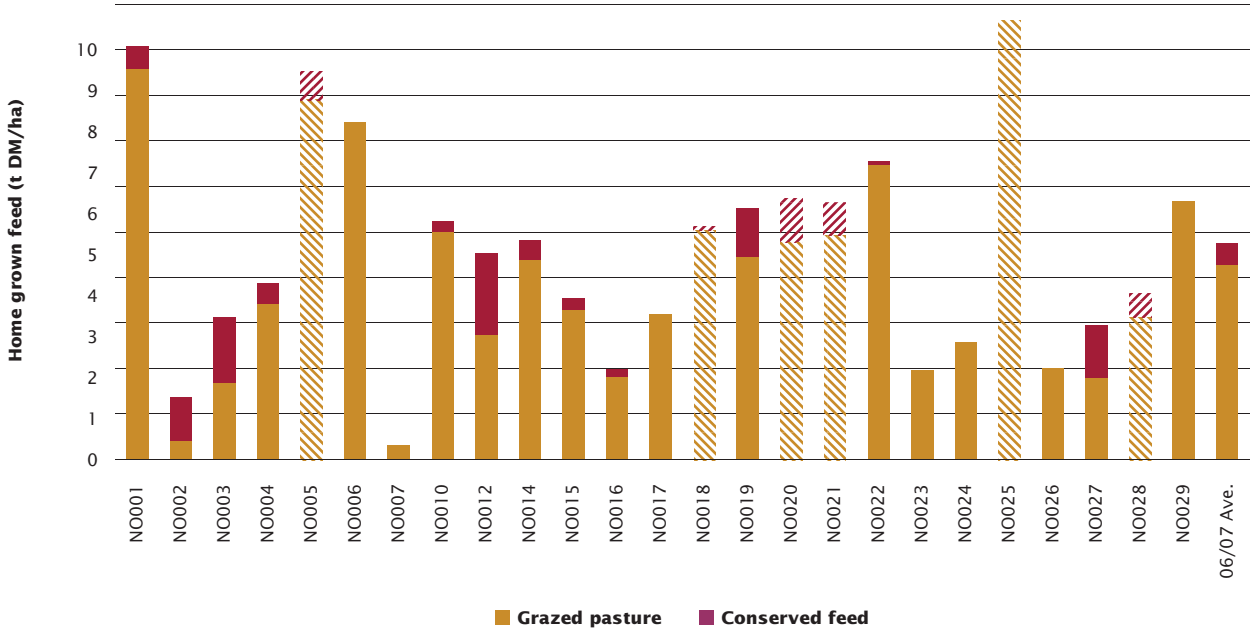


Figure 21 shows the estimated home grown feed production per hectare for farms in the North. The range is very large from less than 1t/ha to over 9t/ha.

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 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 on page 16 of Part One – State-wide or in Appendix E.

FIGURE 21: ESTIMATED TONNES OF HOME GROWN FEED PRODUCED PER HECTARE – NORTH

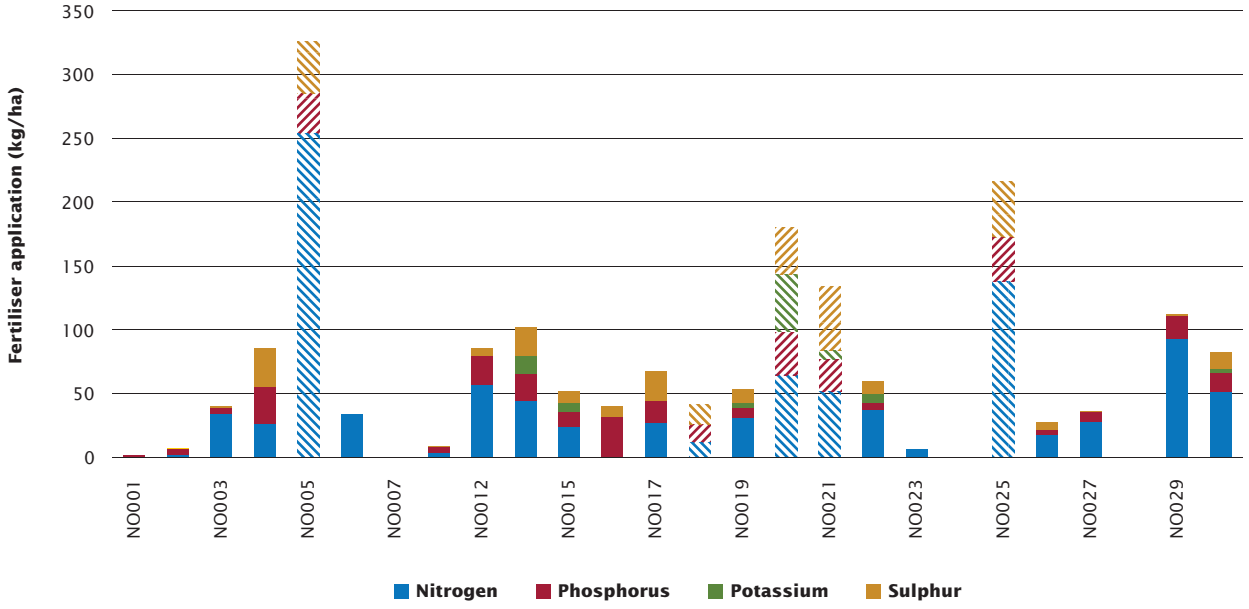


FERTILISER APPLICATION

Figures 21 and 22 show a relationship between fertiliser application during 2007/08, with most of the farms in the top 25% applying higher rates of fertiliser per hectare.

Approximately three quarters of fertiliser applied in the north was on irrigated land.

FIGURE 22: FERTILISER APPLICATION PER HECTARE – NORTH



PART THREE: SOUTH WEST

Farms ranked in the top 25% by earnings before interest and tax per hectare are shown as the striped bars in all graphs. Farms SW001 to SW 019 were included in the 2006/07 sample. Please refer to page 6 for notes on the presentation of data.

2007/08 SEASONAL CONDITIONS

FIGURE 23: 2007/08 ANNUAL RAINFALL AND LONG TERM AVERAGE RAINFALL – SOUTH WEST

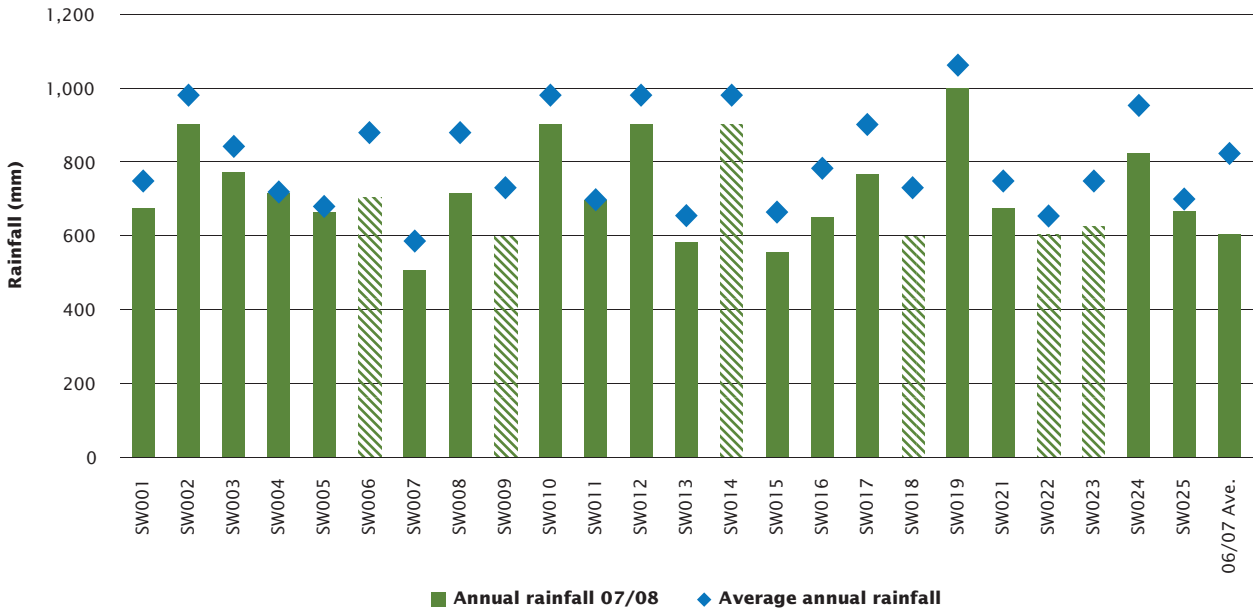


Figure 23 shows the rainfall across the South West during the 2007/08 year. Rainfall totals were between 80% and 100% of the individual long-term averages. During 2007/08 the South West generally had a very good spring which allowed for good quantities of silage and hay to be cut. After a warm summer, the region saw a reasonable autumn break. The eastern reaches of the region were drier than those further to the west. Overall, the seasonal conditions were favourable and resulted in a good level of production. Appendix Table B2 gives further data on total rainfall and water used and, when compared to Figure 23, suggests that one of the farms in the top 25% had irrigation in 2007/08.

WHOLE FARM ANALYSIS

Table 6 presents some key whole farm physical parameters for the South West. The Q1 – Q3 range shows the band in which the middle 50% of farms for each parameter sit.

The top 25% of farms ranked on earnings before interest and tax per hectare were slightly smaller than the average of the entire South West, but generally were not vastly different from the average in the reported physical parameters. The key area were the top 25% of farms did distinguish themselves from the regional average was with stocking rate and milk production, both as per cow and per hectare.

TABLE 6: FARM PHYSICAL DATA – SOUTH WEST

Farm physical parameters	South West average	Q1 to Q3 range	Top 25% average
Annual rainfall 07/08	688	602 – 772	687
Water used (irrigation + rainfall) (mm/ha)	699	604 – 823	708
Total useable area (hectares)	303	133 – 433	263
Stocking rate (milking cows per useable hectares)	1.2	1.1 – 1.5	1.3
Milk sold (kg MS /cow)	489	435 – 528	522
Milk sold (kg MS /ha)	598	543 – 714	654
Home grown feed as % of ME consumed	71%	65% – 77%	75%
People productivity (milking cows / FTE)	95	073 – 114	99
People productivity (kg MS / FTE)	46,394	36,748 – 50,718	51,763

GROSS FARM INCOME

Gross farm income includes all farm income, whether that is income from milk sales, an increase in inventories of stock or feed, cash income from livestock trading, or income from other sources such as farm owned shares, interest from bank accounts and rebates or grants. Gross farm income as per kilogram of milk solids sold can be found in Appendix Table B1.

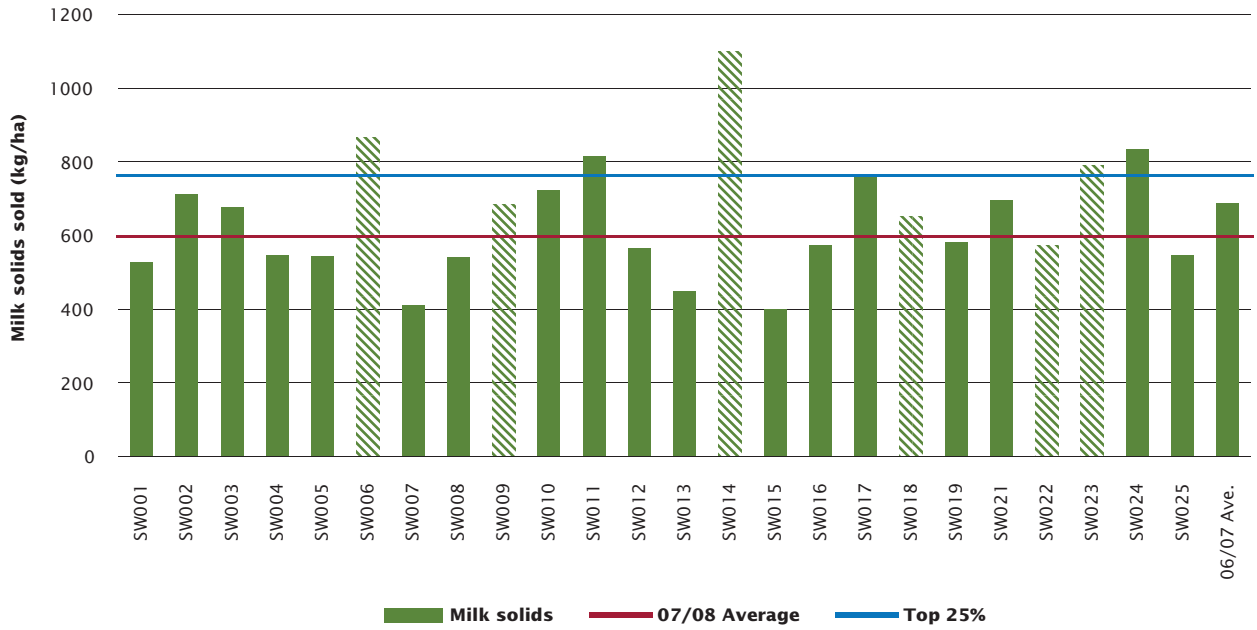
Figure 24 shows that gross income in the South West ranged from $3,030 to $8,100 per hectare. While on average the top 25% of farms had a higher gross income than the South West group as a whole, it can also be seen that numerous farms not in the top 25% had a gross income that was similar to four of the six farms in that group. The improved gross farm income compared to 2006/07 can be seen as the difference between the top of the last bar and the 07/08 average income line. This improvement is equal to $1,300/ha

FIGURE 24: GROSS FARM INCOME PER HECTARE – SOUTH WEST

MILK SOLIDS PRODUCTION

Figures 24 and 25 show the very strong correlation between income and milk solids sold per hectare. However, variation between Figures 24 and 25 as a result of other sources of income can be seen. The top 25% of farms in the South West produced an average 654kg MS /ha, which is significantly more than the whole of group average of 591kg MS /ha. This group average Figure is down on the 2006/07 average of 688kg MS /ha.

FIGURE 25: MILK SOLIDS SOLD PER HECTARE – SOUTH WEST



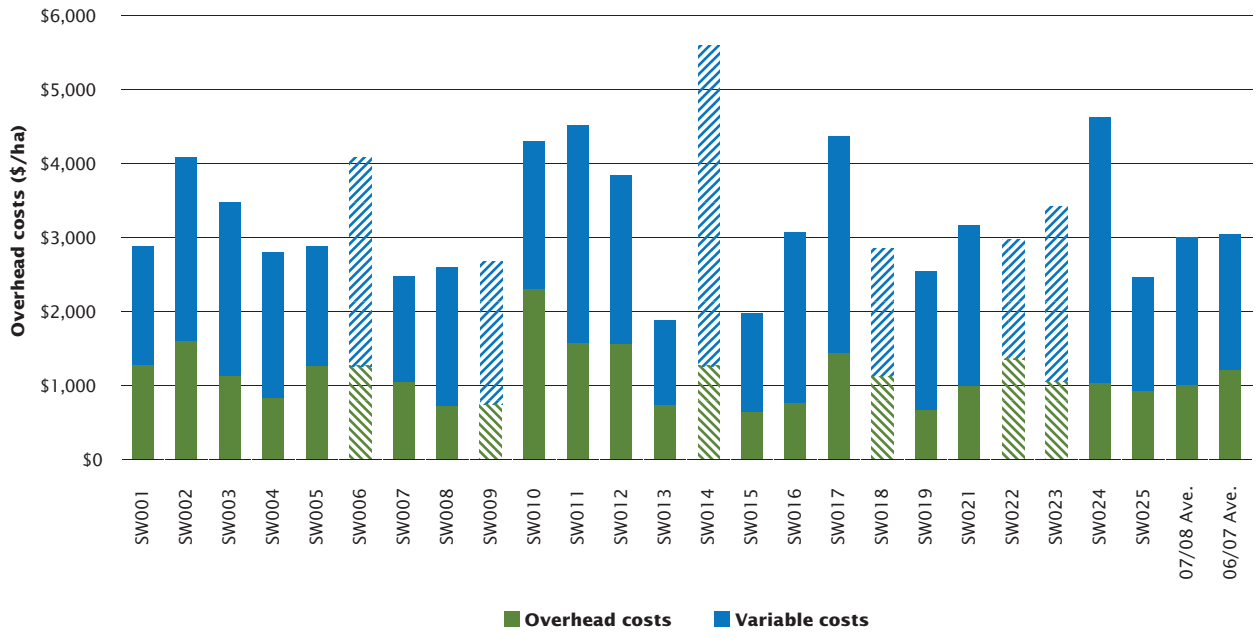
VARIABLE COSTS

Feed costs were clearly the major variable cost in dairy farms of the South West. Fifty nine percent of total costs of production were feed costs which equates to 89% of the total variable costs. Within feed costs, the cost of concentrates including grain was the major component, accounting for over half of the 89% of total variable costs as feed costs. Fertiliser was the other major cost in the feed cost category, accounting of a further 19% of the 89%. Herd and shed costs combined only accounted for 11% of the total variable costs.

For all the variable cost categories, the difference between the whole group average and the top 25% was not significant.

The percentage breakdown of the variable costs can be found in Appendix Table B6. Appendix Table B4 gives the values in dollars per kilogram of milk solids sold.

FIGURE 26: WHOLE FARM VARIABLE AND OVERHEAD COSTS PER HECTARE – SOUTH WEST



OVERHEAD COSTS

Figure 26 illustrates the variation in overhead costs per hectare. There was not a large difference in the average overhead cost for the South West group and the top 25% average despite the large variation between individual farms. Values ranged from $640 to $2,300 per hectare. Table 7 and Appendix Table B7 show that the cost of people in the business is the major overhead cost, accounting for 55% of total overhead costs in the South West. Depreciation and repairs and maintenance were the other two major overheads.

COST OF PRODUCTION

Figure 26 and Table 7 present both variable and overhead costs to give total cost of production per hectare and per kilogram of milk solids sold respectively. Given as total per kilogram of milk solids sold, the cost of production is a useful risk ratio. By comparing this figure to gross farm income, the percentage of gross income retained as earnings (EBIT %) can be obtained.

TABLE 7: COST OF PRODUCTION – SOUTH WEST

Farm costs ($ / kg MS)	South West average	Q1 to Q3 range	Top 25% average
VARIABLE COSTS			
Livestock trading loss	$0.00	$0.00 – $0.00	$0.00
Shed costs	$0.14	$0.10 – $0.17	$0.15
Herd costs	$0.23	$0.16 – $0.25	$0.20
Home grown feed cost	$1.12	$0.87 – $1.28	$0.91
Purchased feed, inventory loss and agistment	$1.80	$1.51 – $2.10	$1.64
Total variable costs ($ / kg MS)	$3.29	$2.82 – $3.60	$2.90
OVERHEAD COSTS			
Rates	$0.04	$0.02 – $0.04	$0.07
Registration and insurance	$0.01	$0.00 – $0.01	$0.01
Farm insurance	$0.04	$0.02 – $0.05	$0.04
Repairs and maintenance	$0.30	$0.18 – $0.34	$0.24
Bank charges	$0.01	$0.00 – $0.01	$0.04
Other overheads	$0.13	$0.05 – $0.13	$0.15
Depreciation	$0.22	$0.08 – $0.22	$0.26
Employed people	$0.44	$0.07 – $0.54	$0.23
Imputed people cost	$0.49	$0.40 – $0.76	$0.58
Total overhead costs ($ / kg MS)	$1.69	$1.33 – $2.25	$1.61
Total cost of production ($ / kg MS)	$4.98	$4.50 – $5.54	$4.51

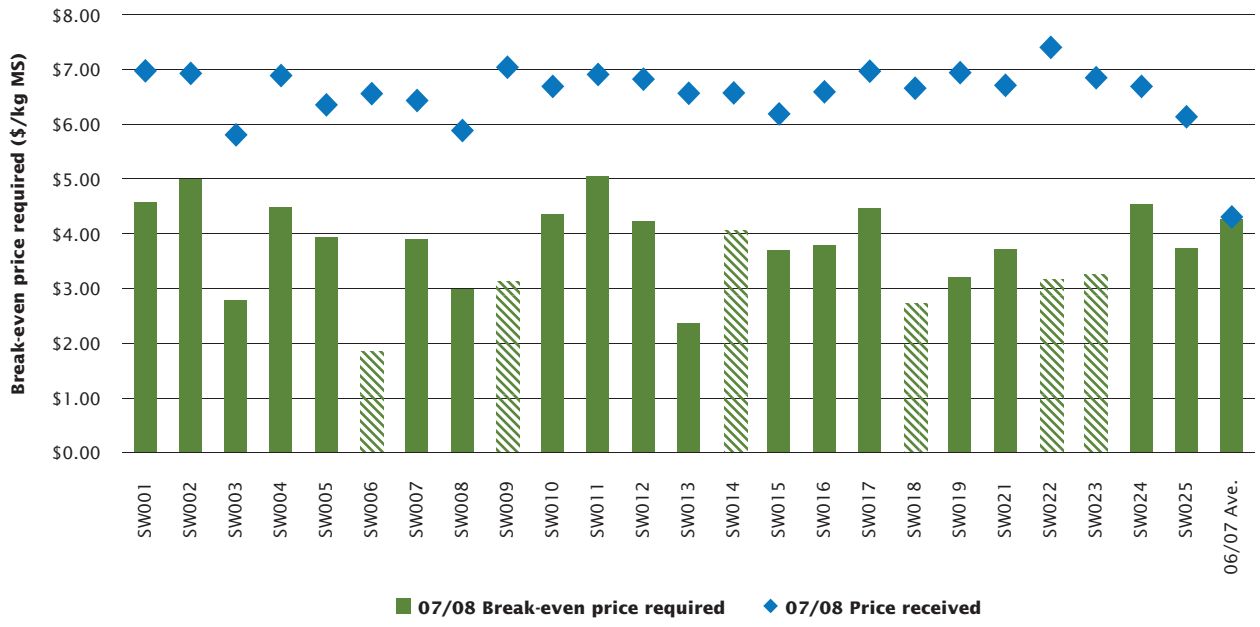
BREAK-EVEN PRICE REQUIRED

The break-even price required per kilogram of milk solids sold is calculated as the cost of production less any income from other sources, including livestock trading profit or increase in feed inventory. This makes it an even more relevant risk ratio in dairying than cost of production as it can be compared directly to the price of the main output in the business, that being milk price.

Figure 27 shows that the break-even price required varied from $1.87 per kg MS to $5.06 per kg MS in the South West. There is no clear link between those farms with higher break-even price required and per hectare cost, income or EBIT. This highlights the fact that values presented as dollars per kilogram milk solids sold are most useful as risk ratios.

The difference between the price received and the break-even price required is the earnings before interest and tax per kilogram of milk solids sold.

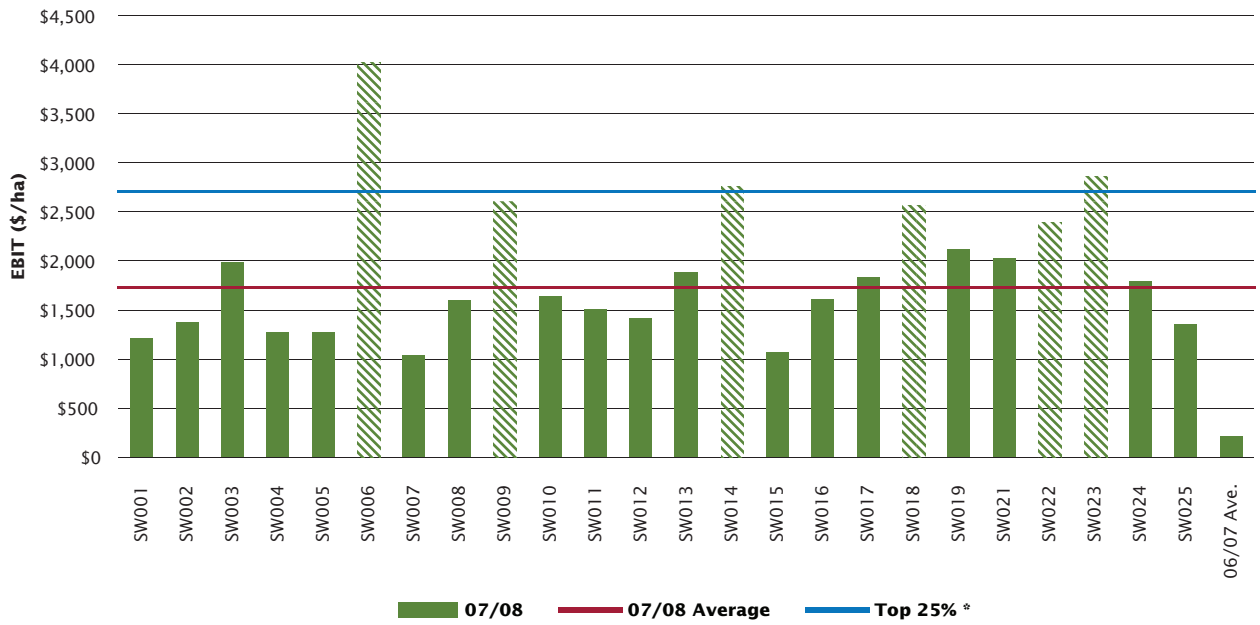
FIGURE 27: BREAK-EVEN PRICE REQUIRED PER KILOGRAM OF MILK SOLIDS SOLD – SOUTH WEST



EARNINGS BEFORE INTEREST AND TAX

Earnings before interest and tax (EBIT) is the gross income, less enterprise costs and overhead costs, including imputed costs. Figure 28 shows that all farms in the South West achieved a positive EBIT for the 2007/08 year, all of which were greater than $1,000/ha. The strength of financial performance in the region is put into perspective when it is compared to the average for the previous year of $210/ha. The average for the top 25% of farms was $900/ha more that of the entire South West group, at $2,600/ha and $1,710/ha respectively.

FIGURE 28: WHOLE FARM EARNINGS BEFORE INTEREST AND TAX PER HECTARE – SOUTH WEST



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 29 and 30 were calculated excluding capital appreciation. For return on equity including capital appreciation, as well as individual farm results, refer to Appendix Table B1.

Figure 29 shows that all farms from the South West achieved a return on assets of 6% or more. Returns for the group ranged from 6% to 20%. The average return on assets for the group was 11%, while the average for the top 25% was 15%. The farms in the top 25% by earnings before interest and tax per hectare do not necessarily have the highest return on assets because their farm business assets per hectare may have been assessed at a higher value compared to other farms.

FIGURE 29: RETURN ON ASSETS – SOUTH WEST

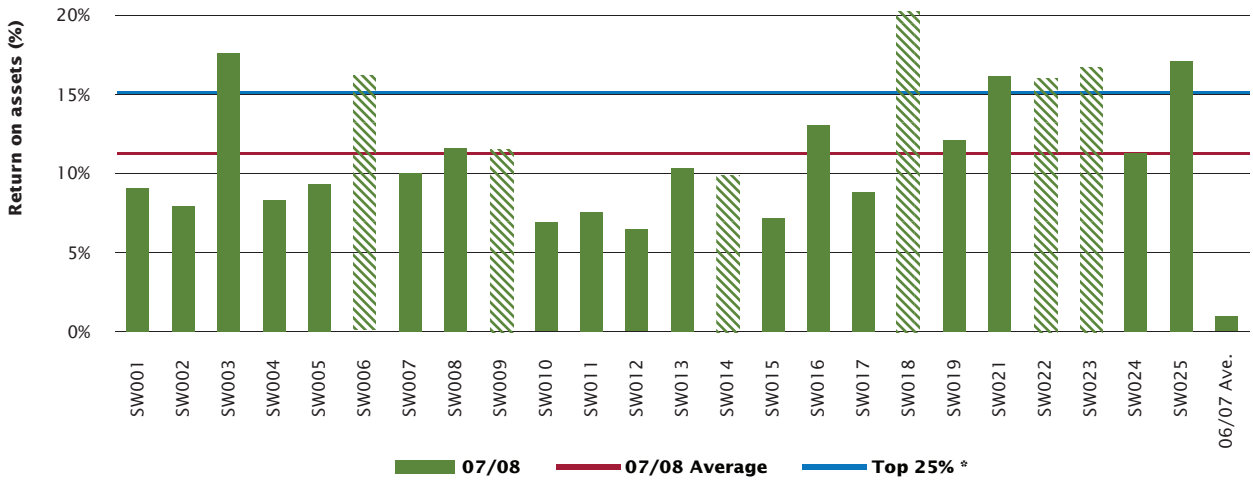
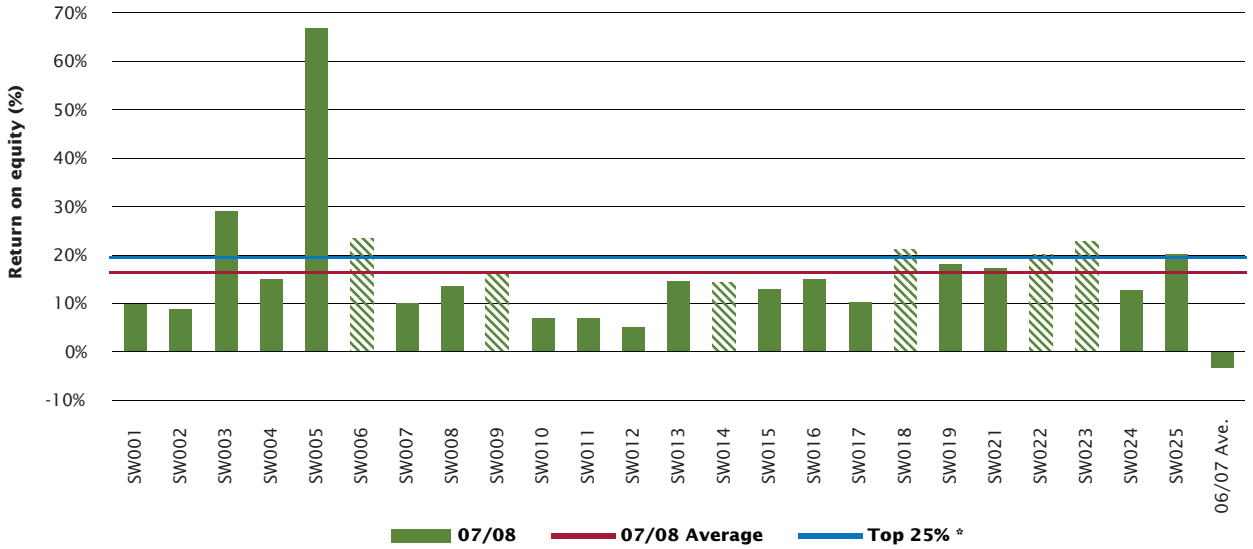


Figure 30 shows that the return on equity within the group ranged from 5% to 67% and averaged 12%. Negative three percent was the average in 2006/07. The average return on equity for the top 25% was 19%. Note the different scale of the vertical axis for Figures 29 and 30.

The multiplying effect on profit of borrowing money in good years can clearly be seen in the South West farms. Only 2 farms had a return on equity lower than their return on assets, and these were minor reversals. For these two farms, the total interest and lease payments as a percentage of total liabilities (ie interest rate) was greater than their EBIT as a percentage of total assets (ie return on assets).

FIGURE 30: RETURN ON EQUITY – SOUTH WEST



FEED CONSUMPTION

Feed data was collected on a whole farm basis as determining which feeds went to which class of stock would have made the data collection process too difficult on many farms. Figure 31 shows the relative contribution of each feed type to the ME consumption on the farm. It can be seen that for 6 of the 24 farms grazed pasture contributed less than half of the ME consumed on farm in 2007/08. Values ranged from 41% up to 74%, with 18 farms in the 50%-70% range. Thirty five percent was the highest value for energy sources from grain.

'Other' sources of feed includes sources that are not used by or available to dairy farmers on the common market. Palm Kernel Extract is included as a concentrate.

FIGURE 31: SOURCES OF WHOLE FARM METABOLISABLE ENERGY – SOUTH WEST

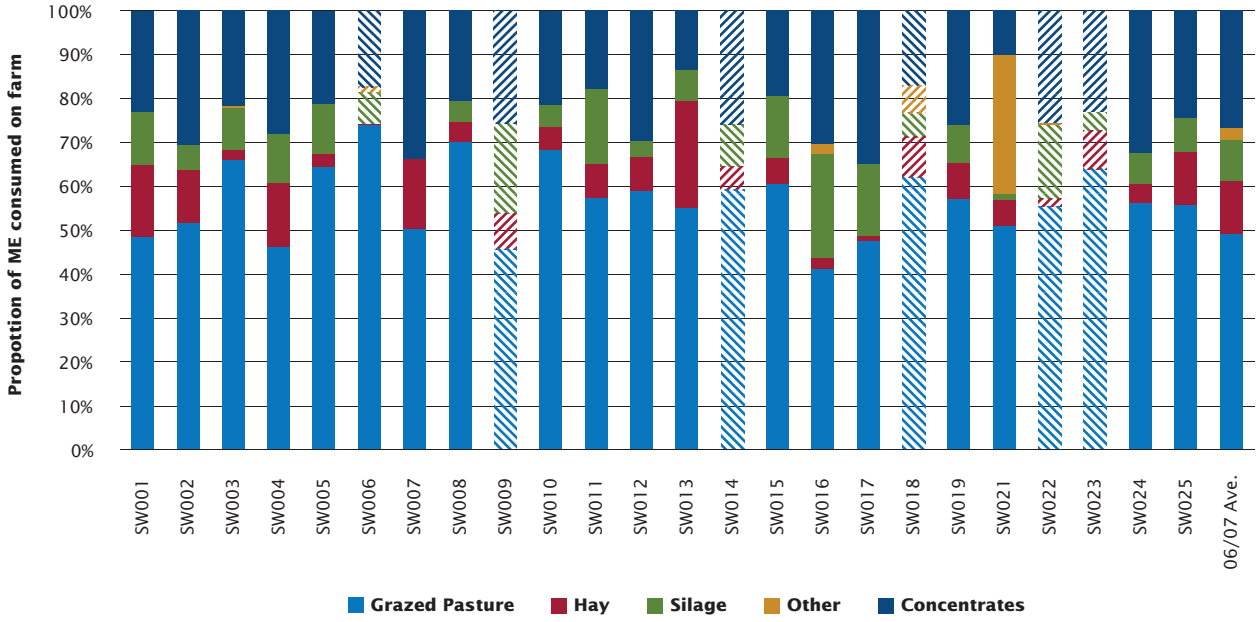
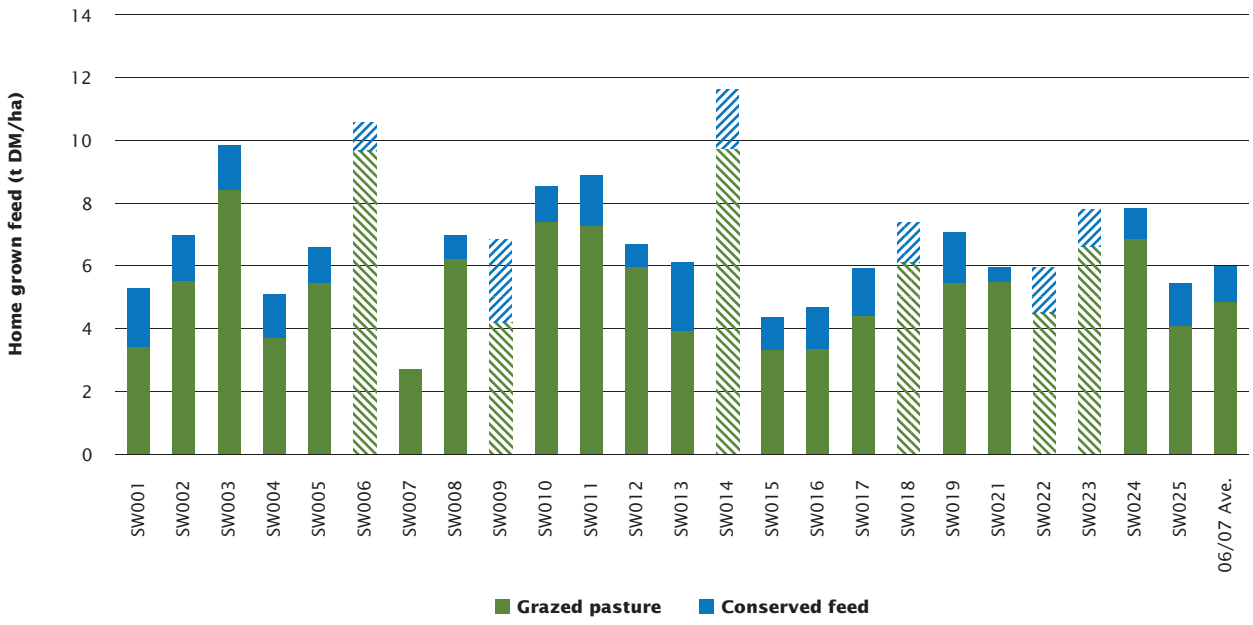


Figure 32 shows the estimated home grown feed production per hectare for farms in the South West. The range is very large, from 10.6 tonnes of dry matter per hectare down to about 3t DM/ha.

For the farms that were involved in the 2006/07 sample as well as this year, there have been mixed results in the variation in the estimate of home grown feed between years. Variations on individual farms would be a result of individual circumstances and management decisions.

It should be noted that there can be a number of potential sources of error in the method used to calculate home 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 32: ESTIMATED TONNES OF HOME GROWN FEED PRODUCED PER HECTARE– SOUTH WEST

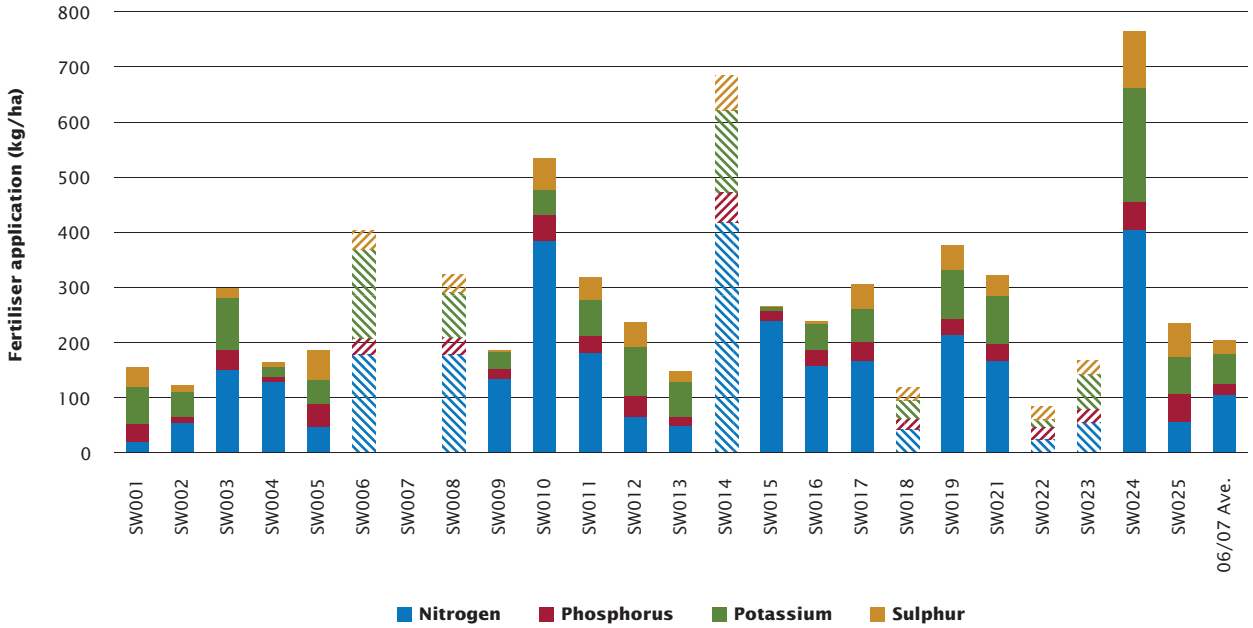


FERTILISER APPLICATION

Figures 32 and 33 do show some signs of correlation, but the influence of other factors beyond fertiliser application such as current soil fertility, climate and management of pastures can be seen. Rates of nitrogen application averaged over the entire useable area of each farm varied substantially, from 20kg/ha (excluding the 0kg/ha value) to up to 400kg/ha. The average was 150kg/ha, which is up on last year's average of 100 kg/ha despite the considerable increase in fertiliser costs.

High values in Figure 33 may be the result of soil improvement strategies or fodder crops. The individual values relating to Figure 33 can be found in Appendix Table B2.

FIGURE 33: FERTILISER APPLICATION PER HECTARE – SOUTH WEST



PART FOUR: GIPPSLAND

Farms ranked in the top 25% by earnings before interest and tax per hectare are shown as the striped bars in all graphs. Farms GI002 to GI017 were involved in the 2006/07 sample. Please refer to page 6 for notes on the presentation of data.

2007/08 SEASONAL CONDITIONS

FIGURE 34: 2007/08 ANNUAL RAINFALL AND LONG TERM AVERAGE RAINFALL – GIPPSLAND

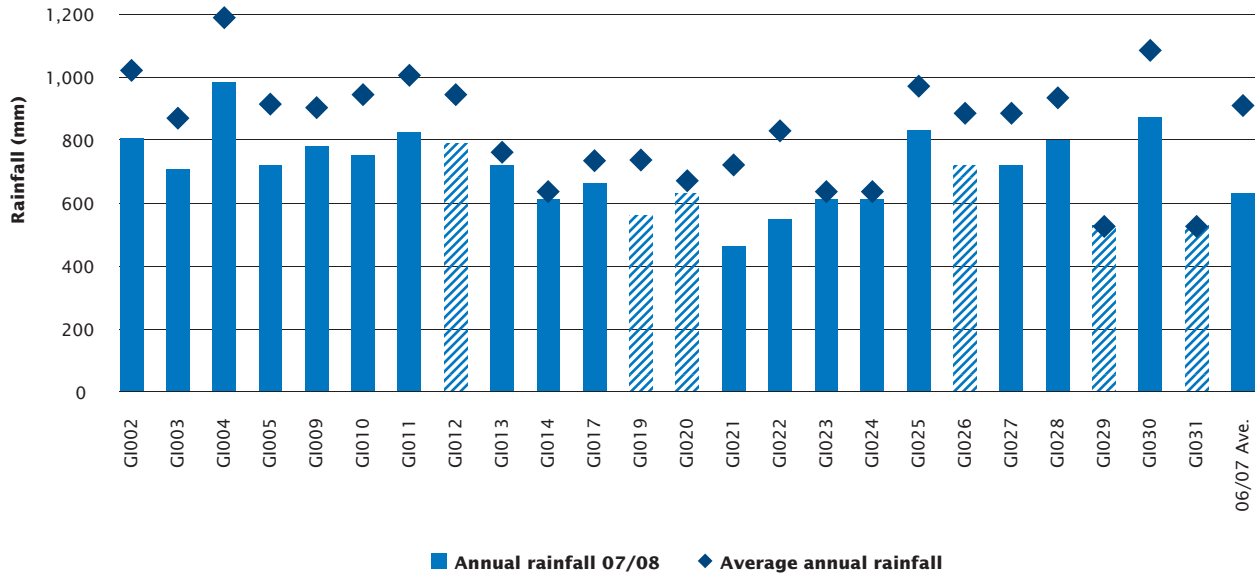


Figure 34 presents the rainfall across the Gippsland region during the 2007/08 financial year. Rainfall totals were generally in the range of 80% to 100% of the long-term average. In general the spring was much better than the previous year, although October was drier than normal. Central and East Gippsland had a significant rainfall event in November following on from one at the end of June. This set up these areas for plenty of conserved feed to be made and to carry green pasture into the summer. It also ensured that the Macalister Irrigation District had a full allocation over a dry summer and autumn. South and West Gippsland also experienced a favourable spring and early summer. However, the later part of summer and most of the autumn was quite dry and this severely impacted the central and eastern areas the most. The far eastern and western reaches of Gippsland suffering the greatest second half of year deficit in rainfall.

WHOLE FARM ANALYSIS

Table 8 presents some key whole farm physical parameters for the Gippsland group in 2007/08. The Q1-Q3 range shows the band in which the middle 50% of farms for each parameter sit.

The averages of the top 25% of farms ranked on earnings before interest and tax per hectare were significantly above the Q3 value for measures that are related to a per hectare base. This includes water used, stocking rate and milk sold per hectare. Appendix Table C2 shows that this is also true for rates of fertiliser application and for the estimates of pasture consumption. People productivity as both milking cows and kilograms of milk solids per full time equivalent were also above the Q3 value in the top 25%.

TABLE 8: FARM PHYSICAL DATA – GIPPSLAND

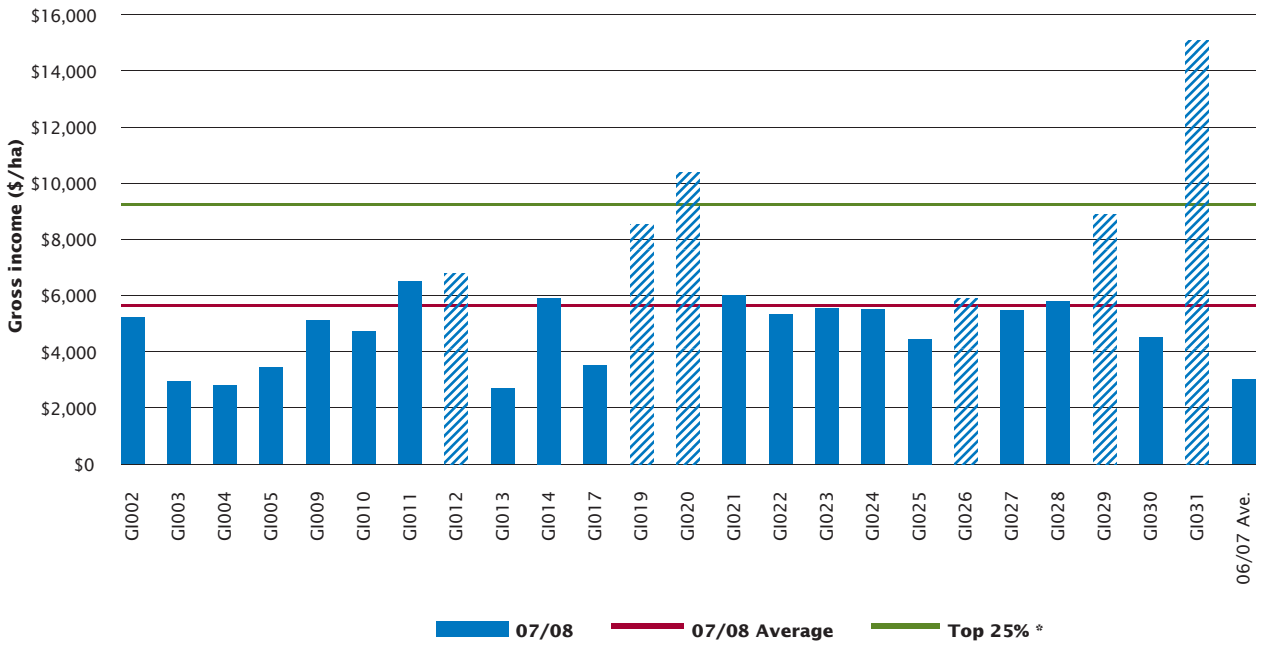
Farm physical parameters	Gippsland average	Q1 to Q3 range	Top 25% average
Annual rainfall 07/08	671	611 – 790	627
Water used (irrigation + rainfall) (mm/ha)	805	720 – 870	1,005
Total useable area (hectares)	174	101 – 232	129
Stocking rate (milking cows per useable hectares)	1.6	1.3 – 1.7	2.4
Milk sold (kg MS /cow)	442	378 – 517	517
Milk sold (kg MS /ha)	754	616 – 799	1,256
Home grown feed as % of ME consumed	71%	71% – 79%	72%
People productivity (milking cows / FTE)	100	72 – 118	122
People productivity (kg MS / FTE)	45,844	34,691 – 55,284	63,052

GROSS FARM INCOME

Gross farm income includes all farm income, whether that is income from milk sales, an increase 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 also included. Figure 35 below shows the large variation in gross income per hectare between participants in Gippsland, ranging from $2690/ha up to $ 15,100/ha.

The top 25% of farms averaged $9,260/ha, compared to the group average of $5,620. Figure 35 shows that the 5 largest incomes per hectare all belong to farms in the top 25%. While the farms in the top 25% all had high income, they also display other strengths which resulted in them having the top whole farm earnings before interest and tax within the group.

FIGURE 35: GROSS FARM INCOME PER HECTARE – GIPPSLAND

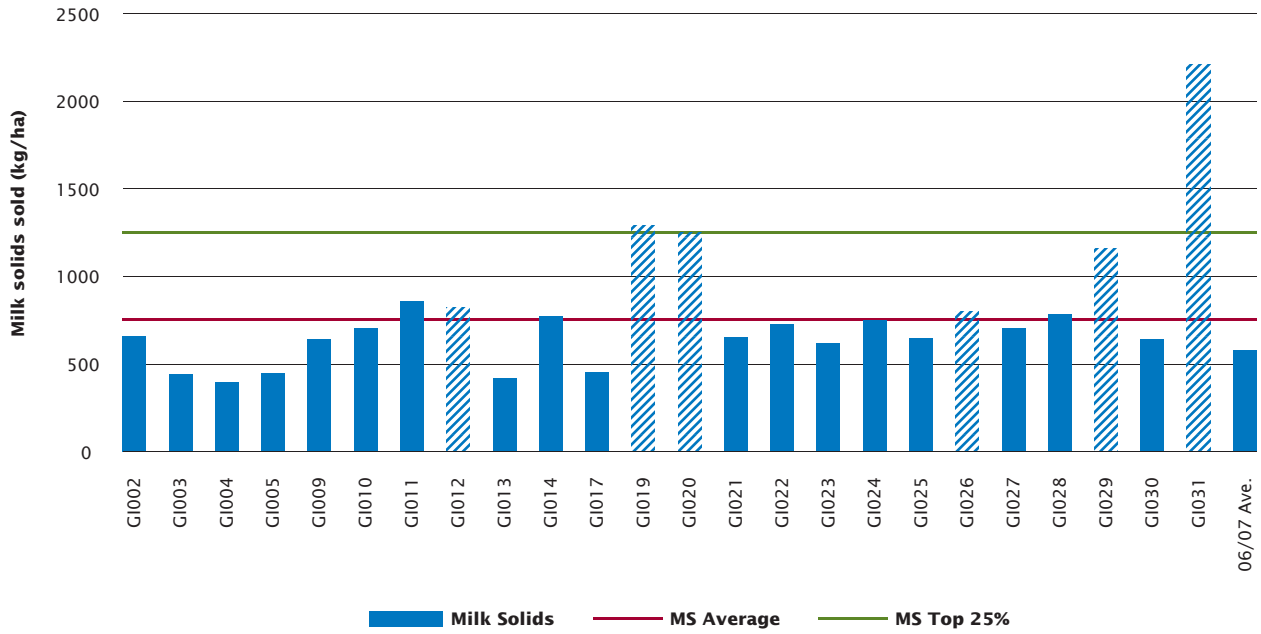


MILK SOLIDS PRODUCTION

The high individual and average milk solids sold per hectare of the top 25% of farms is seen clearly in Figure 36. These farms averaged 1,222 kg MS/ha compared to the regional average of 741 kg MS/ha. Appendix Table C2 shows that the per cow values are not so disparate, with the top 25% averaging 516 kg MS/cow compared to the regional average of 464 kg MS/cow.

The across-farm differences between Figure 35 and Figure 36 are explained by differences in the milk price received and income received from other sources by the individual farms.

FIGURE 36: MILK SOLIDS SOLD PER HECTARE – GIPPSLAND

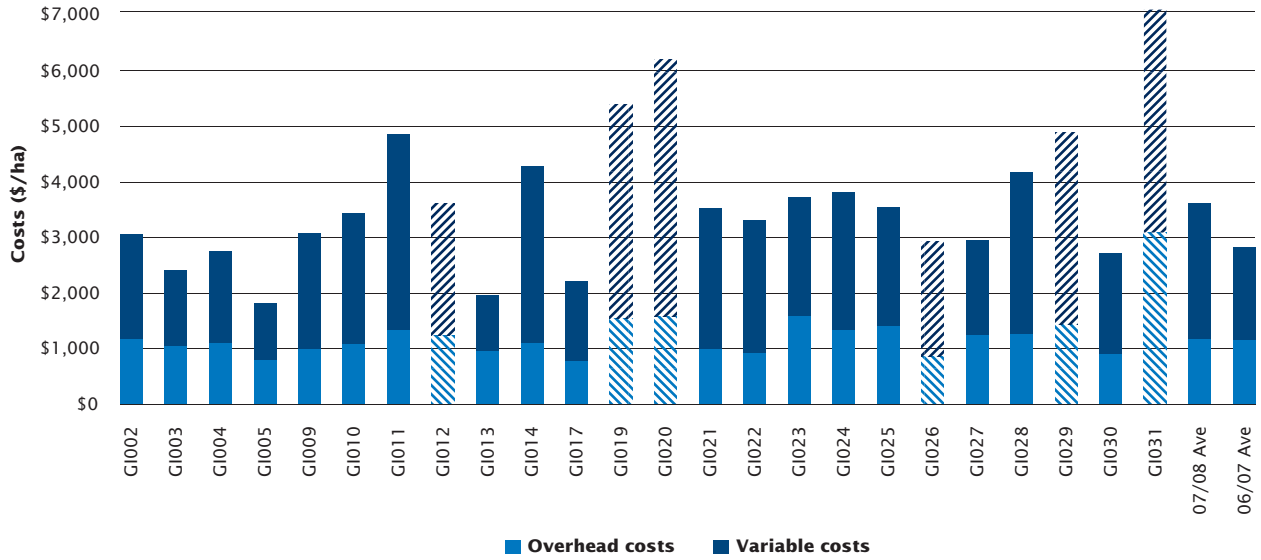


VARIABLE COSTS

Total variable costs for the individual farms on a per hectare basis can be seen in Figure 37, with the detailed per kilogram of milk solids sold values presented in Appendix Table C4. The percentages of each variable cost category that make up the total can be found in Appendix Table C6. In 2007/08 feed costs were by far the most significant variable cost across the region. They accounted for an average of 59% of total cost of production or 88% of total variable costs. Within feed costs, concentrates was the major component. They accounted for half the total variable costs. Fertiliser cost was the next major component at 10% of total variable costs.

Broken down on percentages, the differences between the group average variable cost distribution and those of the top 25% were not significant. As per hectare, the top 25% had greater costs in every category bar hay and silage making. In many cases these were significant. Irrigation costs in the top 25% average were approximately $230/ha, while they were only $70/ha for the group average.

FIGURE 37: WHOLE FARM VARIABLE AND OVERHEAD COSTS PER HECTARE – GIPPSLAND



Please note: farm GI031 has a total costs of $11,900 per hectare and thus extends well above the scale of Figure 37.

OVERHEAD COSTS

Figure 37 illustrates the overhead costs per hectare for Gippsland. This figure includes the non cash overhead costs of imputed people cost and depreciation. Both these cost categories are very important costs to be considered in an economic analysis of a business. Imputed people cost was the major overhead cost, accounting for 35% of overhead costs in the top 25% and 38% in the regional average. Total people cost accounted for 59% and 64% of total overheads in the regional average and top 25% respectively. The break down of overheads cost per hectare as a percent of the total can be found in Appendix Table C7.

There was a broad range of total overhead costs in Gippsland during 2007/08. The highest value was $3,090/ha, with the second highest being $1,595. The lowest value was $780/ha. Table 9 gives an indication of the range of overheads as per kilogram of milk solids sold and presents the regional and top 25% averages.

COST OF PRODUCTION

Figure 37 and Table 7 present both variable and overhead costs to give the total cost of production per hectare and per kilogram of milk solids sold respectively. Given as total per kilogram of milk solids sold, the cost of production is a useful risk ratio. By comparing this figure to gross farm income, the percentage of gross income retained as earnings (EBIT %) can be obtained.

TABLE 9: COST OF PRODUCTION – GIPPSLAND

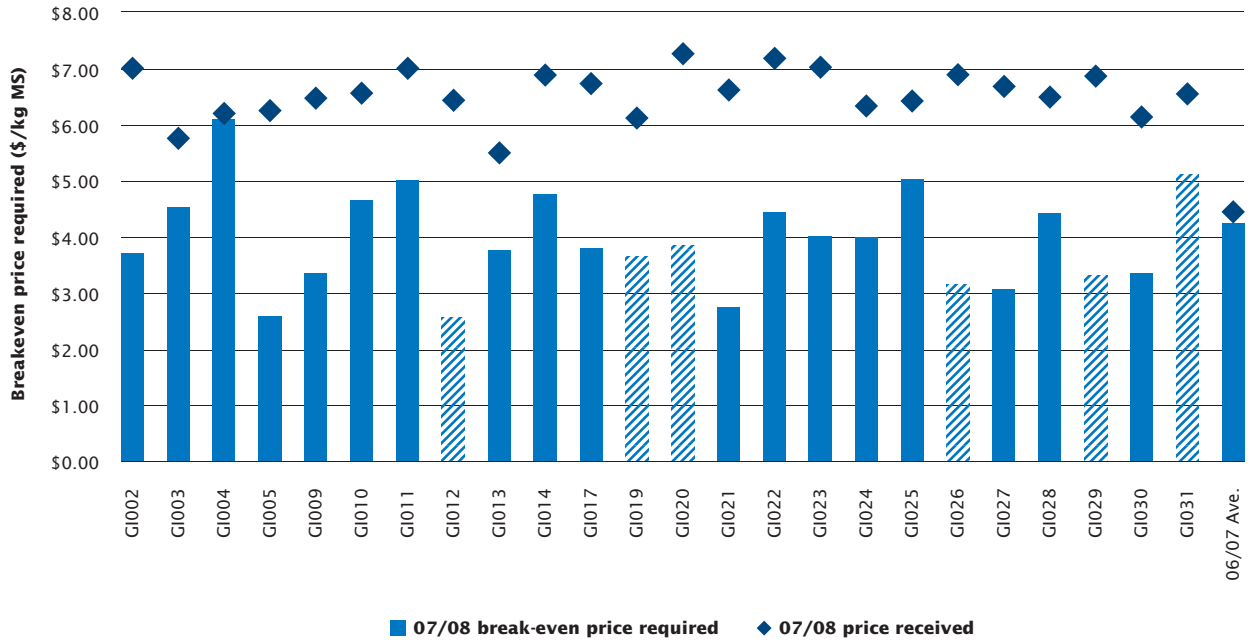
Farm costs ($ / kg MS)	Gippsland average	Q1 to Q3 range	Top 25% average
VARIABLE COSTS			
Livestock trading loss	$0.00	$0.00 – $0.00	$0.00
Shed costs	$0.13	$0.10 – $0.17	$0.11
Herd costs	$0.28	$0.21 – $0.30	$0.26
Home grown feed cost	$1.03	$0.80 – $1.21	$1.01
Purchased feed, inventory loss and agistment	$1.85	$1.48 – $1.97	$1.95
Total variable costs ($ / kg MS)	$3.29	$2.85 – $3.69	$3.33
OVERHEAD COSTS			
Rates	$0.04	$0.02 – $0.06	$0.04
Registration and insurance	$0.02	$0.01 – $0.02	$0.01
Farm insurance	$0.04	$0.02 – $0.04	$0.02
Repairs and maintenance	$0.27	$0.15 – $0.37	$0.17
Bank charges	$0.02	$0.00 – $0.02	$0.01
Other overheads	$0.09	$0.05 – $0.12	$0.08
Depreciation	$0.18	$0.09 – $0.24	$0.13
Employed people	$0.33	$0.04 – $0.37	$0.37
Imputed people cost	$0.61	$0.50 – $0.81	$0.44
Total overhead cost ($ / kg MS)	$1.59	$1.40 – $1.81	$1.27
Total cost of production ($ / kg MS)	$4.88	$4.22 – $5.41	$4.61

BREAK-EVEN PRICE REQUIRED

The break-even price required for milk is calculated as the cost of production per kilogram of milk solids sold less any livestock trading profit or increase in feed inventory. By accounting for all costs and other sources of income, the break-even price required allows for a direct comparison to the price received for the main output of the business, being milk. The difference between the break-even price required and the price received is the earnings before interest and tax per unit.

Figure 38 shows that the break-even price required varies from $2.58 per kg MS to $6.10 per kg MS in Gippsland. Every farm has a break-even price required less than the price received which relates directly to the positive EBIT and return on assets for every farm. The similar average break-even price required but large increase in milk prices compared to the 2006/07 year can also be seen.

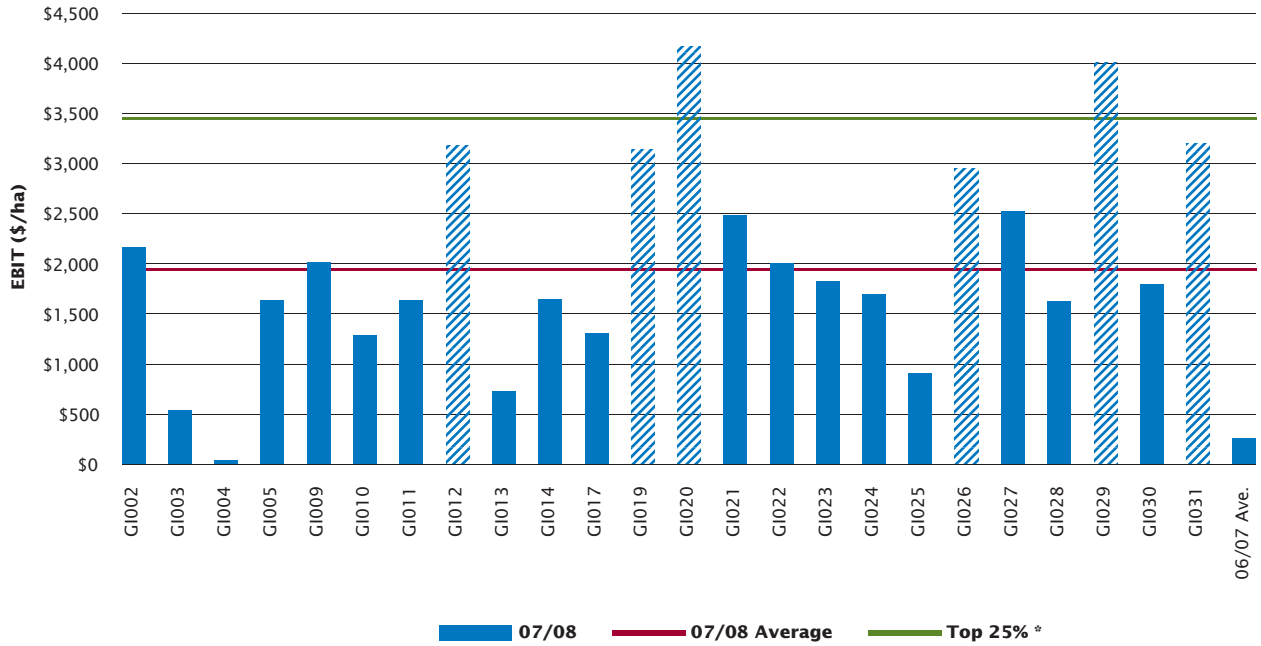
FIGURE 38: BREAK-EVEN PRICE REQUIRED PER KILOGRAM OF MILK SOLIDS SOLD – GIPPSLAND



EARNINGS BEFORE INTEREST AND TAX

Earnings before interest and tax (EBIT) is the gross income, less enterprise costs and overhead costs including imputed costs. During 2007/08 all of the Gippsland farms achieved a positive EBIT. The top 25% achieved an average earnings before interest and tax of $3,560/ha, significantly more than the healthy regional average of $1,990/ha. Note the difference between individual results in Figure 39 compared to Figure 35, farm gross income.

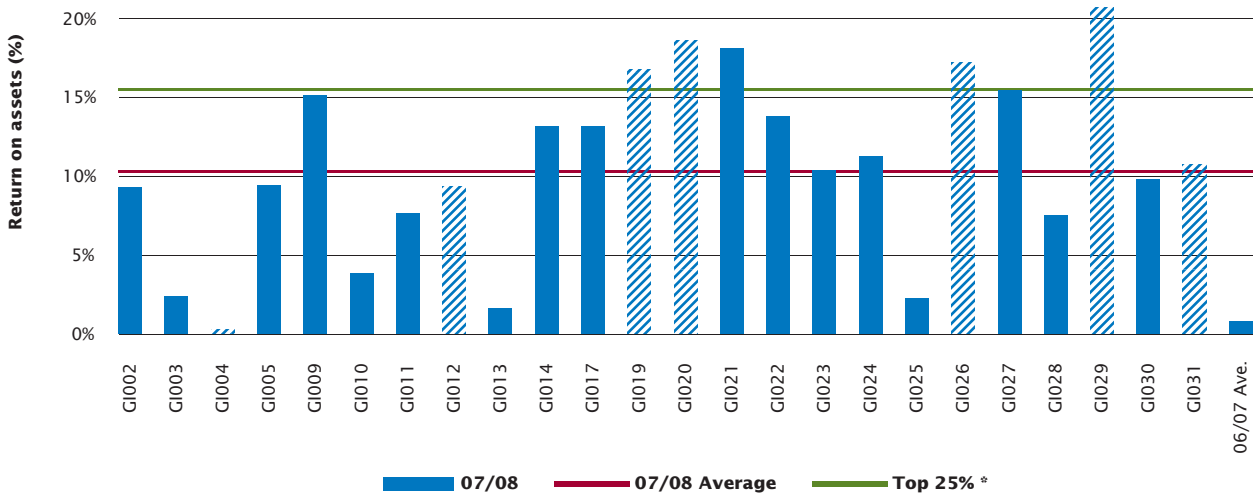
FIGURE 39: WHOLE FARM EARNINGS BEFORE INTEREST AND TAX PER HECTARE – GIPPSLAND



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

FIGURE 40: RETURN ON ASSETS – GIPPSLAND

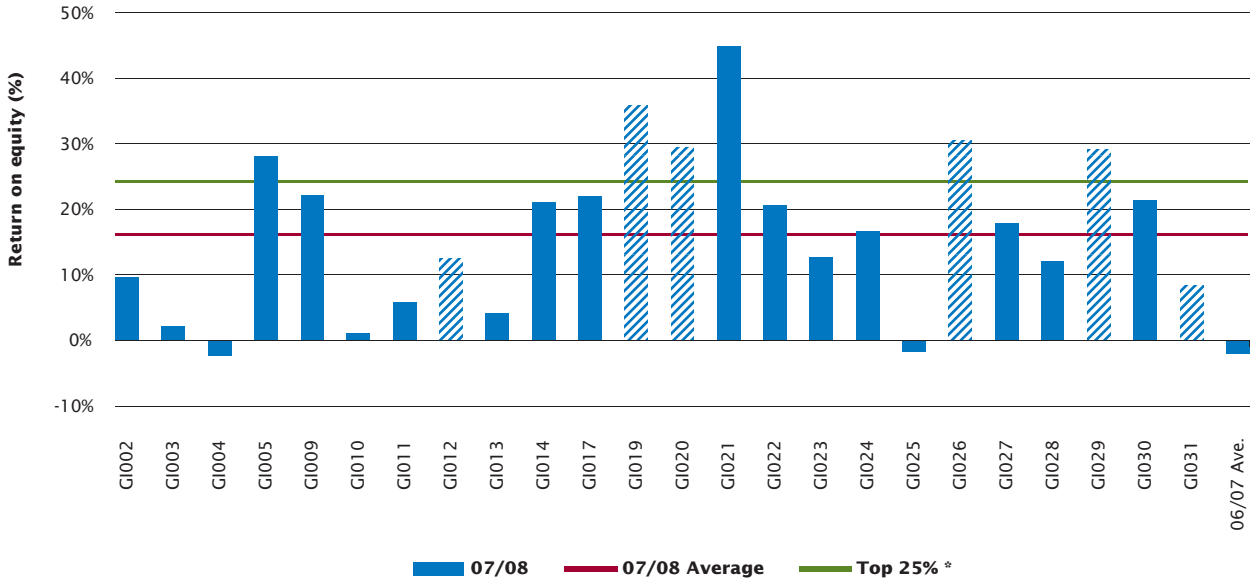


The variation between farms return on assets will reflect the variation between farms earnings before interest and tax, with differences being explained by the variation in the valuation of the total assets managed. These results are a reflection of the total economic result on the farm. Return on assets in Gippsland ranged from 0% to 21% during 2007/08.

A return on assets becomes a lesser return on equity when the rate of interest on loans or lease on leased capital is greater than the return on assets. This will results in a negative return on equity when total interest and lease payments exceed the earnings before interest and tax. When the percentage increases, it is the result of a higher return on assets than the interest or lease rate.

Gippsland had mixed but strong results for return on equity. Only two of the 24 farms had a negative value, both of which are less than last year's average. Values ranged from -2% up to an impressive 45%. Return on equity does not include any increased wealth from appreciation in the value of the land, which most of these farms will have experienced on a significant level during the year. These values can be seen in Appendix C1.

FIGURE 41: RETURN ON EQUITY – GIPPSLAND



FEED CONSUMPTION

Figure 42 shows that Gippsland dairy farming systems were predominantly grass based, with 22 of the 24 farms getting over half their energy requirement as grazed pasture and all participants getting over half their energy requirements from home grown feed. On seven farms the estimate was over 70% of ME as pasture. 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. A further description of the Energetics method used to calculate energy sources and feed consumption can be found on page 16 of Part One – Statewide or in Appendix E.

FIGURE 42: SOURCES OF WHOLE FARM METABOLISABLE ENERGY – GIPPSLAND

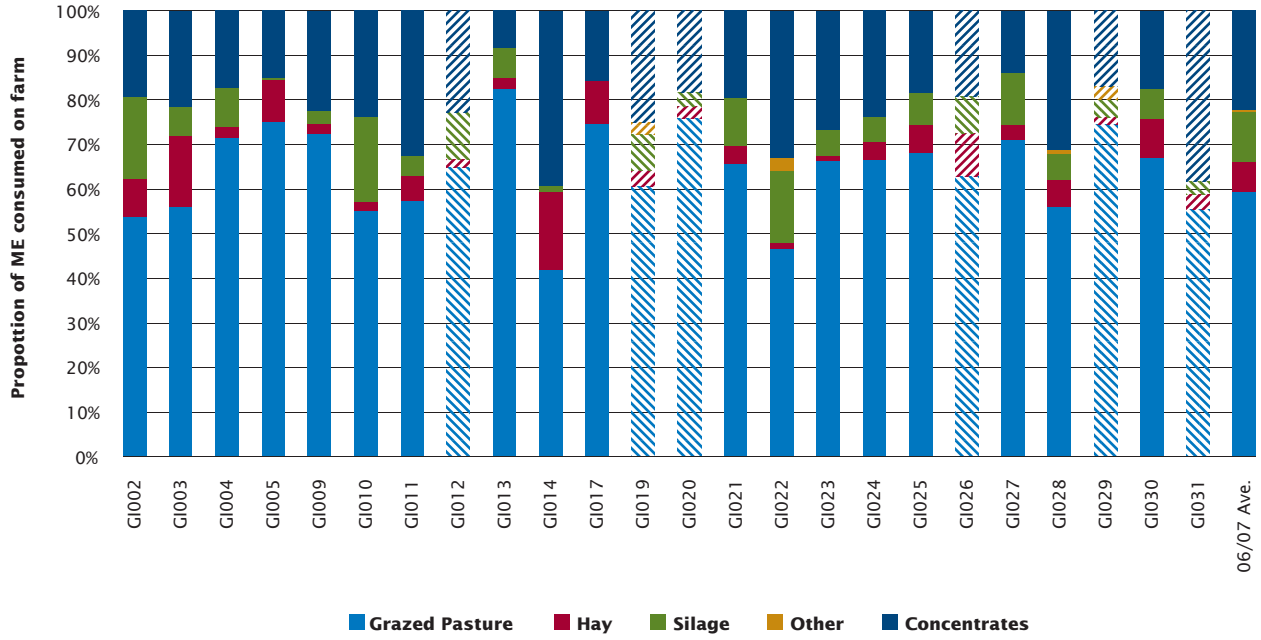
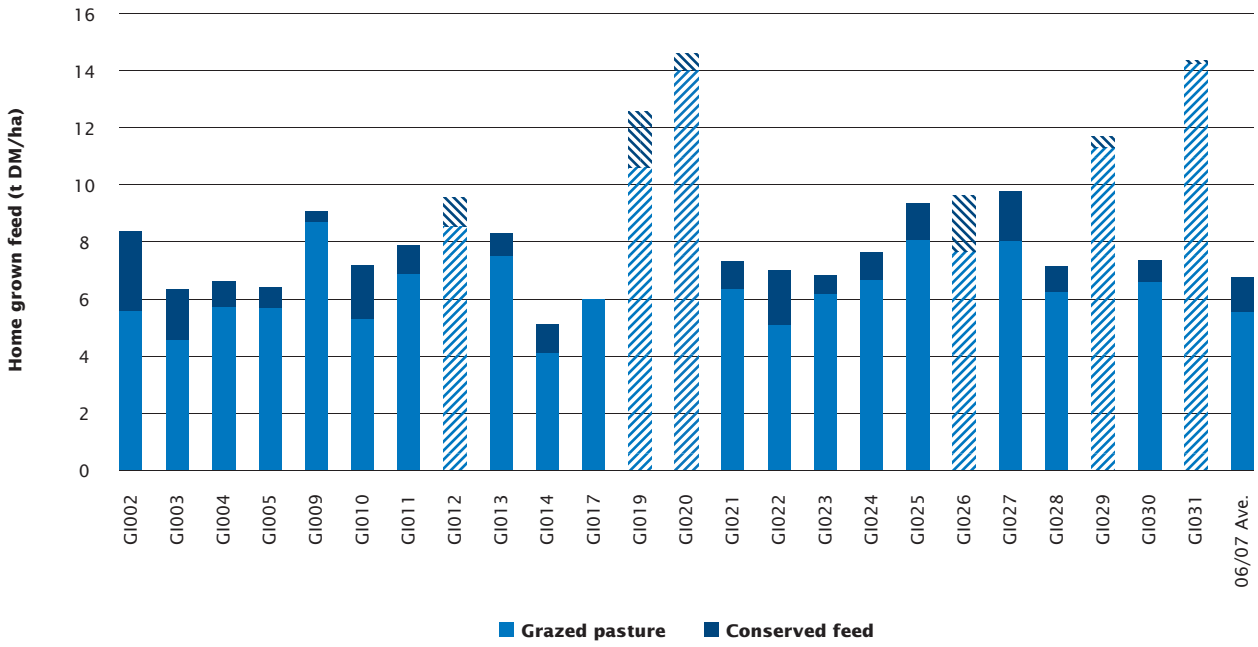


Figure 43 shows the estimated tonnes of home grown feed produced per hectare for farms in Gippsland. These ranged from 5.1 tonnes of dry matter per hectare up to 14.6 tonnes per hectare. The top 25% of farms all had high estimates of home grown feed produced, with values of 9.5 tn DM/ha or more, and had a mixed result when looking at sources of ME in Figure 42.

For the majority of farms that were involved in the 2006/07 sample as well as this year, there has been an increase in the estimate of home grown feed. This has come despite the high cost of fertiliser per tonne and will have been influenced by higher rainfall, mainly in spring, and high milk prices influencing management decisions around fertiliser application. Additionally, the high cost of purchased feed may have made fertiliser an attractive option as an economical source of feed during the year, when there was adequate levels of moisture.

It should be noted that there can be a number of sources of error in the method used to calculate home 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 farms estimate and it is best to compare pasture consumption on the same farm over time using the same method of estimation.

FIGURE 43: ESTIMATED TONNES OF HOME GROWN FEED PRODUCED PER HECTARE – GIPPSLAND

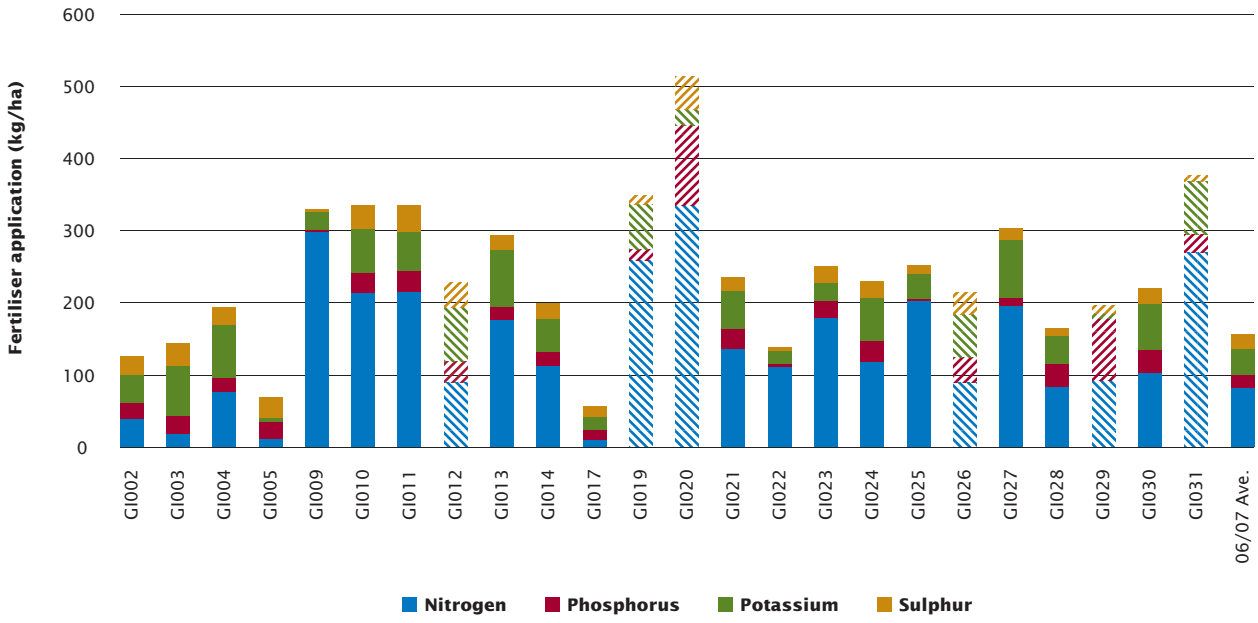


FERTILISER APPLICATION

Farms in Gippsland used a wide range of fertiliser application rates, both between farms and with the mix of key macronutrients on individual farms. With regard to application of nitrogen, rates varied from 10kg/ ha up to 335kg/ha, with the group average at 150kg/ha.

There appears to be some degree of correlation between the pasture growth per hectare and fertiliser application rates as seen in Figures 43 and 44. The values for Figure 44 can be found in Appendix Table C2.

FIGURE 44: FERTILISER APPLICATION PER HECTARE – GIPPSLAND



PART FIVE: BUSINESS CONFIDENCE SURVEY

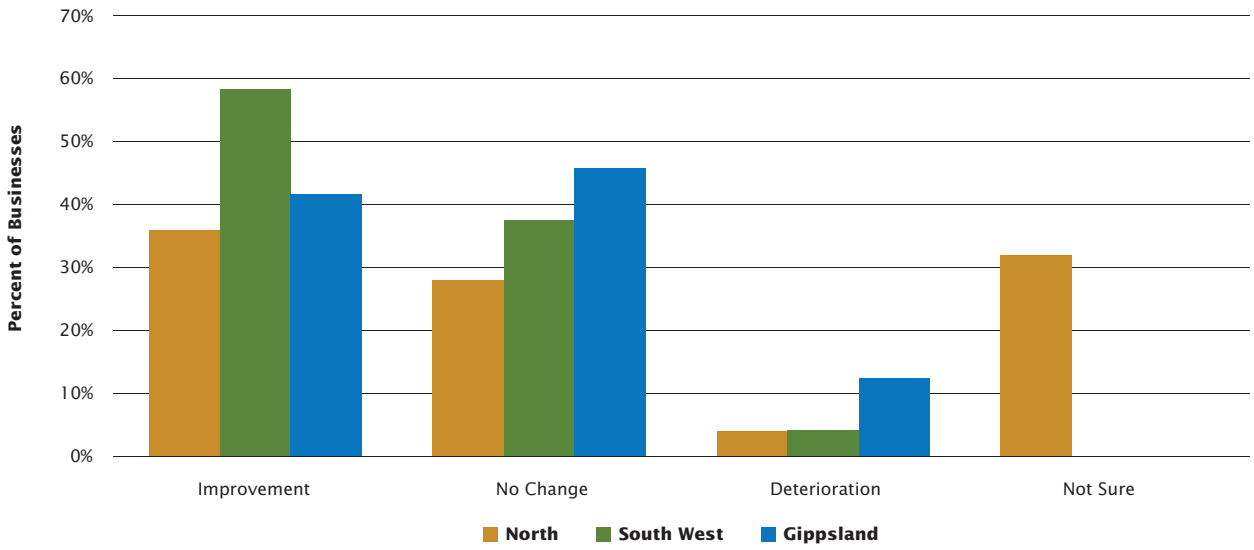
Responses to this business confidence survey where made in June 2008 with regard to the 2008/09 financial year.

EXPECTATIONS, ISSUES AND OWNER/ OPERATOR TIME AND HOLIDAYS

EXPECTATIONS FOR BUSINESS RETURNS

Figure 45 shows that the majority of participant farms across Victoria expect there to be an improvement in farm business returns over the next 12 months. Gippsland is not as confident as the other two regions, with the greatest number expecting no change in their business returns. Responses to the survey were made with consideration of all aspects of farming, including climate and market conditions for all products bought and sold.

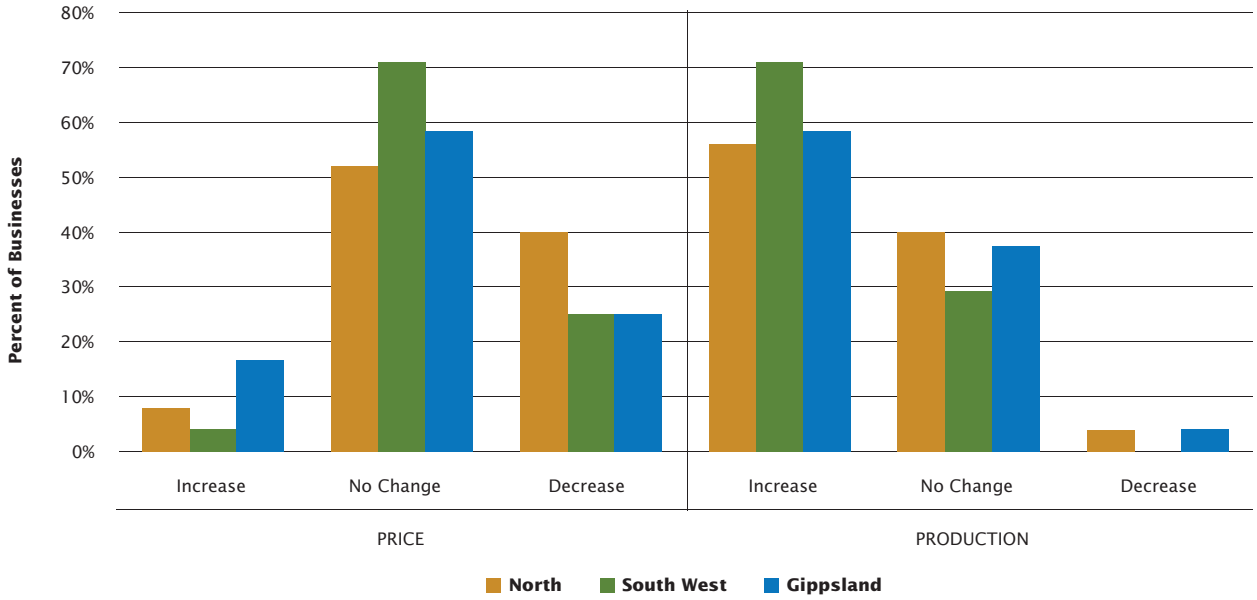
FIGURE 45: EXPECTED CHANGE TO FARM BUSINESS RETURNS IN 2008/09



PRICE AND PRODUCTION EXPECTATIONS – MILK

The majority of farmers across Victoria were positive and expect that current milk prices will not change and expect to increase milk production in 2008/09.

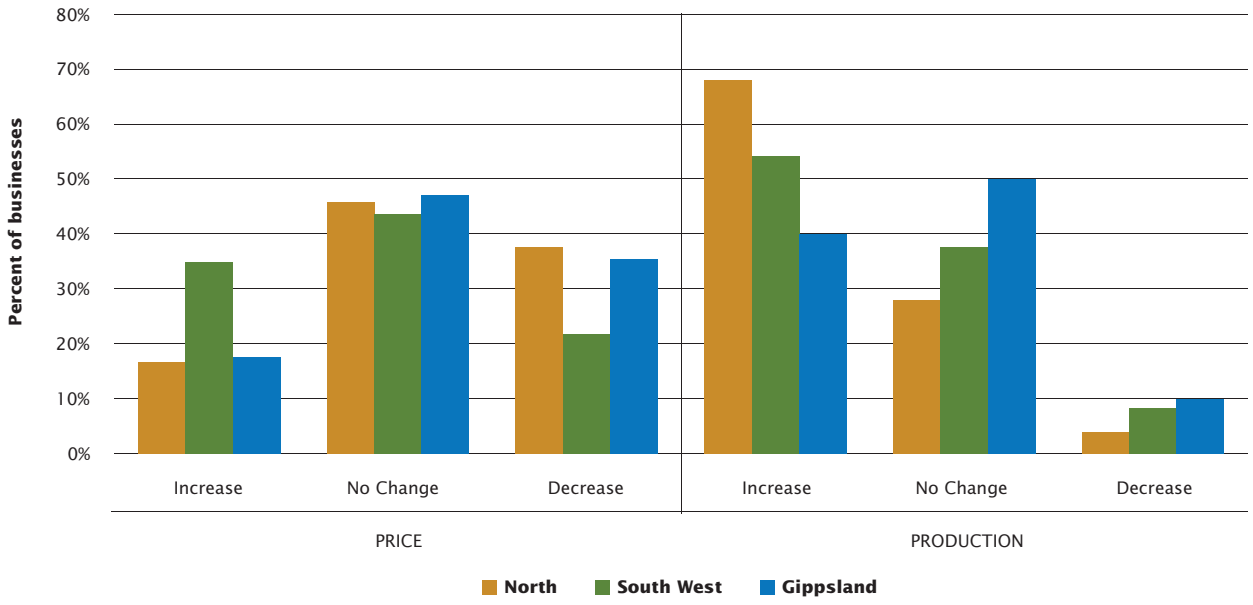
FIGURE 46: PRODUCER EXPECTATIONS OF PRICES AND PRODUCTION OF MILK IN 2008/09



PRICE AND PRODUCTION EXPECTATIONS - FODDER

Figure 47 shows that while the majority of farmers across the state expect the value of fodder to remain the same in 2008/09 there is still a reasonable degree of uncertainty. Farmers in the North and the South West are expecting their fodder production to increase while the majority of farmers in Gippsland expect fodder production to stay the same.

FIGURE 47: PRODUCER EXPECTATIONS OF PRICES AND PRODUCTION OF FODDER IN 2008/09

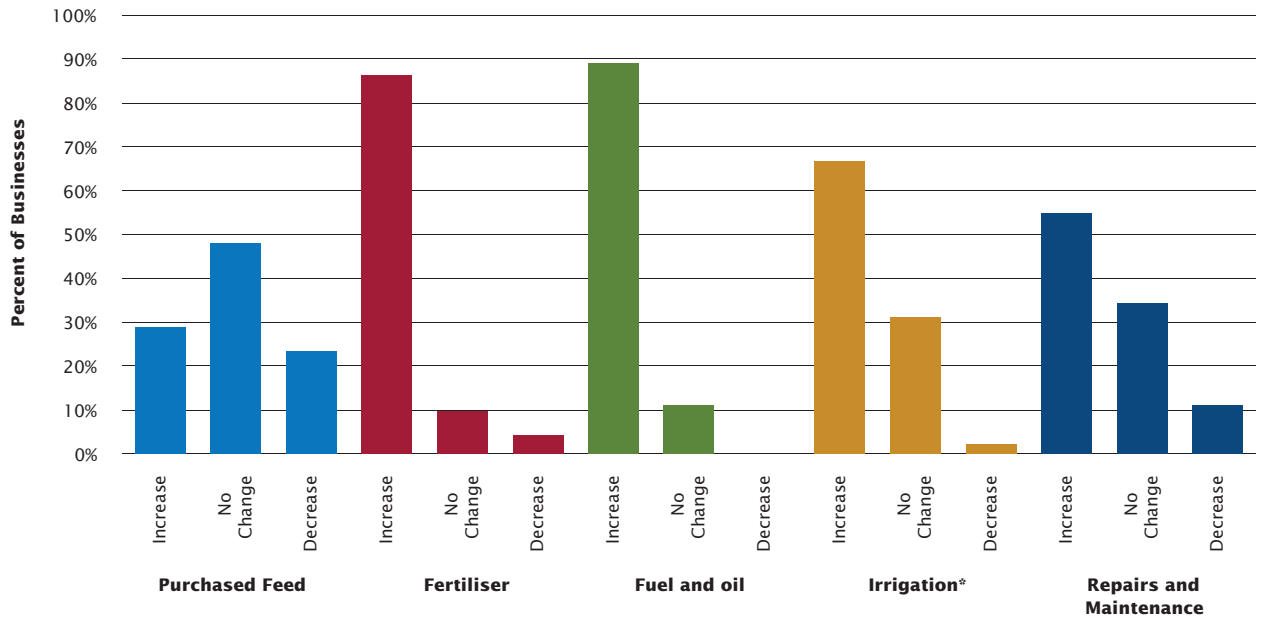


COST EXPECTATIONS

Data presented in Figure 48 is for all 73 participating farms, except for expectations on the cost of irrigation which is only for the 45 farms that have significant irrigation.

Figure 48 shows that the majority of farmers expect fertiliser, fuel and oil, irrigation and repairs and maintenance to increase while purchased feed is expected to remain the same.

FIGURE 48: PRODUCER EXPECTATIONS OF COSTS FOR THE DAIRY INDUSTRY IN 2008/09



**only includes 45 farms with irrigation*

OWNER / OPERATOR TIME ON FARM AND HOLIDAYS

TABLE 10: OWNER / OPERATOR TIME ON FARM AND ON HOLIDAYS

Owner / operator time	Statewide	North	South West	Gippsland
Estimate of average hours per working week	62	64	64	57
Days of holiday taken in 2007/08	16	15	19	14

Twenty of 73 farms identified that they had less than ten days of holidays during 2007/08, with 8 of the 20 stating that they had no holidays off the farm at all.

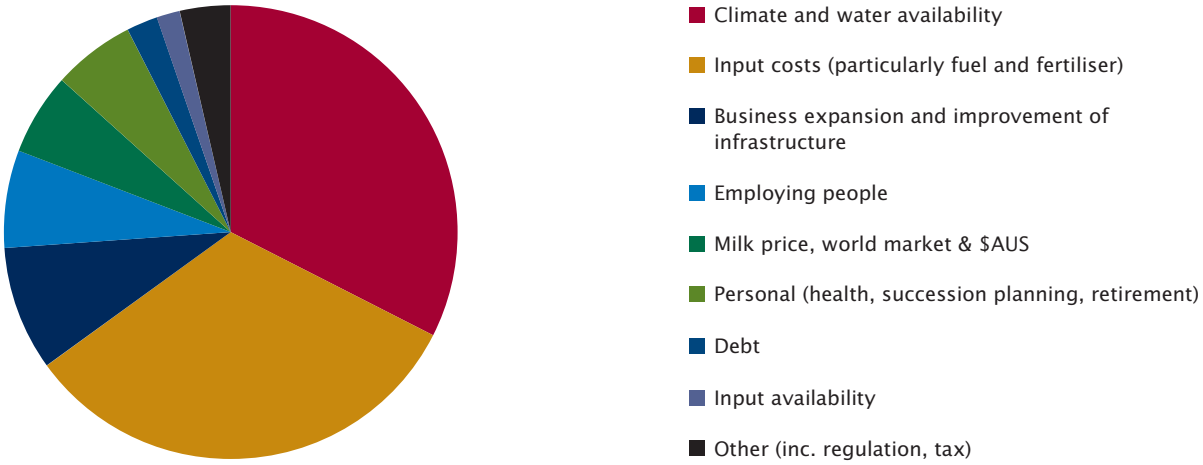
It is interesting to note that employing people and own health (included in the 'personal' category in Figure 50) were identified in 18% of all responses to what are the major issues the individual farmer faces over the next five years.

MAJOR ISSUES IN THE DAIRY INDUSTRY – THE NEXT 12 MONTHS

Figure 49 presents a summary of key issues over the next 12 months as identified by participating farms from across the state. There were 172 responses in total from the 73 farms.

The responses strongly reflect the issues that farmers have faced over the last 12 months. The climate and access to water attracted 32% of the total responses and rising costs, particularly fuel and fertiliser accounted for 33% of the total responses. Expansion of business, improvement of infrastructure and labour was also identified as an issue in 16% of responses.

FIGURE 49: MAJOR ISSUES FOR THE INDIVIDUAL BUSINESS – 12 MONTH OUTLOOK

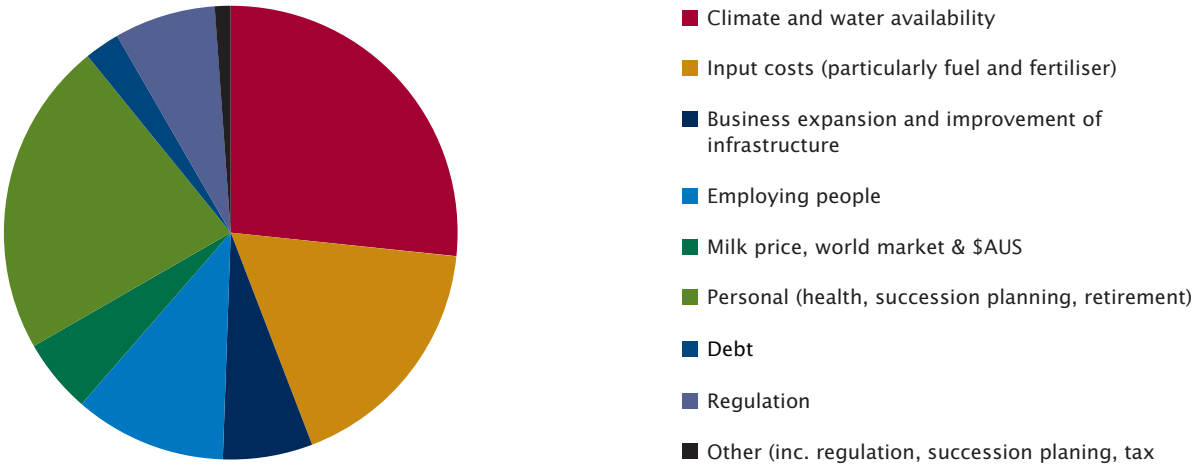


MAJOR ISSUES IN THE DAIRY INDUSTRY – THE NEXT 5 YEARS

Figure 50 presents a summary of issues facing the individual farmer over the next five years, as identified by participants across the state. There were a total of 168 responses from the 73 farms.

Over the longer-term, many of the same issues identified as key for the next twelve months were recognised, with some other issues becoming more prominent. Climate and water availability remained the biggest issues, attracting a combined total of 27% of all responses. Personal issues which included health, succession and retirement were identified by many participants, attracting 23% of total responses, while input costs accounted for 17% of all responses.

FIGURE 50: MAJOR ISSUES FOR INDIVIDUAL THE BUSINESS – 5 YEAR OUTLOOK



PART SIX: GREENHOUSE

2007/08 GREENHOUSE GAS EMISSIONS

The analysis of greenhouse gas emissions from participating farms has been based on a model developed to predict the source and quantity of greenhouse gases emitted from a dairy farm. The model is based on the Australian National Greenhouse Gas Inventory method. The initial analysis template was sourced from Melbourne University's Greenhouse website, which provides decision support frameworks for greenhouse accounting on Australian dairy, beef and grain farms. The website details are: http://www.greenhouse.unimelb.edu.au. While comprehensive, this analysis should not be assumed exact, but used as indicative only.

Carbon dioxide equivalents (CO_2-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 47.6kg of methane (CH_4) and 3.2kg of nitrous oxide (N_2O).

Figure 51 shows the distribution of the different emissions for the 2007/08 year. Of the 73 farms involved in this years analysis, greenhouse gas emissions per tonne of milk solids produced ranged from 7.28 tn/tn MS to 17.08 tn/tn MS. The average level of emission was 10.8tn/tn MS. This is slightly higher than the average from last years greenhouse gas emissions audit of 10.3tn/tn MS and a slightly tighter range compared to 6.5 to 18.8tn/tn MS in 2006/07. As with the previous years dataset there appears not to be a strong relationship to stocking rate.

Methane (CH_4) has been identified as the main greenhouse gas emitted from dairy farms. There are two main sources on farm; ruminant digestion and anaerobic digestion in effluent ponds. Methane produced from ruminant digestion is known as enteric methane. Enteric methane was the major source of emissions from all farms in this report, accounting for an average of 72% of total emissions. Methane from effluent ponds accounted for just over 1% of total emissions.

The most efficient way of reducing enteric methane is by feeding high quality forages with increased digestibility. Ground or pelleted forages are more digestible than their unmodified form. Another simple and effective method of reducing enteric methane is to add unsaturated fatty acids such as linseed oil into the diet. Promising research continues into rumen modifiers and rumen microbe effects.

The second 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 10% of total emissions per kilogram of milk solids. Output levels were highly dependent on the source of electricity used with the majority of farms using brown coal generated electricity. Using renewable energy sources however, could cut electricity emissions by up to 98%, which did occur on some farms in 2007/08.

The third main emission is nitrous oxide (N_2O). Nitrous oxide is emitted in significant levels from four main sources on a dairy farm in the Australian National Greenhouse Gas Inventory; effluent ponds, fertiliser, soils, and excreta (dung and urine). N_2O from effluent ponds accounted for less than 0.04% of total emissions from participating farms. N_2O from fertiliser accounted for 8.37% of total emissions and 6.90% of emissions were as N_2O from excreta. N_2O emissions from soil were at 6.90%. N_2O emissions are greatest in warm, waterlogged soils with readily available nitrogen. Over application of nitrogen, high stocking intensity and flood irrigation are all potential causes of increased nitrogen loss as nitrous oxide.

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. Detailed information on the **Australian National Greenhouse Gas Inventory**, more details on sources of greenhouse gases on dairy farms and strategies for reducing greenhouse gasses can be found on the Australian Greenhouse Office's website at www.greenhouse.gov.au .

FIGURE 51: 2007/08 GREENHOUSE GAS EMISSIONS PER TONNE OF MILK SOLIDS SOLD (CO_2 EQUIVALENT)