

Balancing dairy production and profits in northern Australia



Queensland Dairy Accounting Scheme - 2015

Inside cover

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QDAS Financial and production trends – 2015

Compiled by

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Department of Agriculture and Fisheries 2015

This publication has been compiled by Ray Murphy and Gordon Simpson of Animal Science, Department of Agriculture and Fisheries.

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Introduction

This report contains physical and financial data from 58 farms and includes data from the South East Coastal, Darling Downs, Central Queensland and North Queensland dairy regions (Figure 1).

Milk production in Queensland decreased by 22 million litres from 433 million litres in 2013-14 to 411 million litres in 2014-15. This decrease is reflected in a 9% decrease in farm numbers from 485 in 2013-14 to 443 in 2014-15. Table 1 shows the trend in milk supply and farm numbers for Queensland over the last four years.

In 2014-15 Australian milk production was 9.7 billion litres with Queensland contributing 4.2% of this.

Figure 2 shows Queensland’s monthly milk production for 2013-14 and 2014-15.

A thorough analysis of Queensland dairy businesses can be undertaken by reviewing performance using four business traits – liquidity, profitability, solvency and efficiency. These traits cover both the financial and physical aspects of the business.

Section 1 of this report presents a summary of the key findings. Three business traits – profitability, solvency and efficiency, were used to measure farm performance. The results for these traits are presented using 15 key performance indicators.

Section 2 examines 10 years of cash income and costs.

Section 3 displays the distribution of the Queensland Dairy Accounting Scheme (QDAS) data for cow numbers, land area, labour, production, receipts, costs and profitability.

Section 4 details the characteristics of the most profitable farms in QDAS. Production per cow, the effect of herd size and milk from home grown feed are examined.

Regional production system statistics are summarised in Section 5 and are then examined individually in Sections 6 to 9.

Appendices contain summary reports for all QDAS farms, the top 25% farms and each regional production system. The appendices also contain a list of definitions for the business traits and key performance indicators used in QDAS.

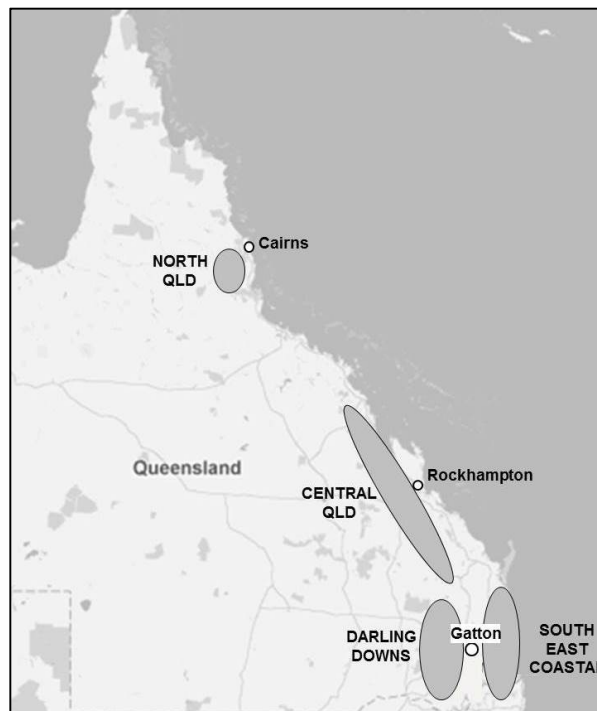


Figure 1. The location of dairy farms in Queensland

Table 1. Dairy farm numbers and annual milk production for Queensland (2011-12 to 2014-15)

	Farms	Annual production
2011-12	548	485 m L
2012-13	510	457 m L
2013-14	485	433 m L
2014-15	443	411 m L

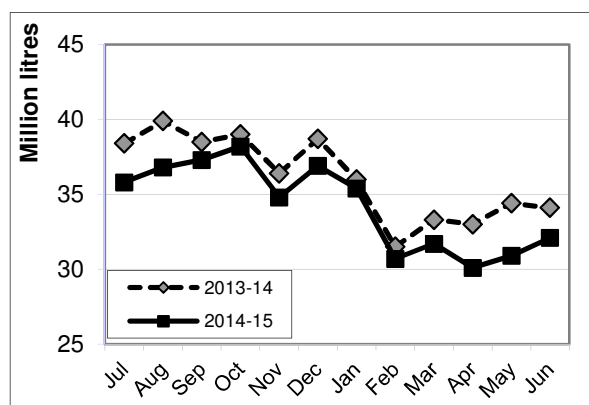


Figure 2. Queensland monthly milk production (2013-14 and 2014-15)

Objectives

The objectives of this book are to:

- Provide QDAS participants with a summary of physical and financial data from each regional production system. This, together with their own farm reports, will give dairy farming families/enterprises information that will enable them to make more informed business decisions.
- Act as a resource guide for local advisers, consultants and other industry service personnel who wish to encourage positive change.
- Provide background material for industry participants negotiating with banks, governments, suppliers or other agents.

About QDAS

QDAS was established to improve the understanding of business principles among advisors and dairy farmers by providing farm management accounting and analysis. Originally the basis of the analysis was an examination of the annual variable costs. The data were used to answer questions such as “is the production of an extra unit of milk profitable?”. QDAS has evolved to now examine the business traits of profitability, solvency and efficiency but still maintains a similar aim to help dairy farmers make informed decisions based on business information.

Officers of the Department of Agriculture and Fisheries supervise the collection and processing of data between August and November.

Farmer participation in QDAS is voluntary and free. Results and trends need to be interpreted carefully as QDAS farms have larger herds and produce more milk per farm than the Queensland average.

Acknowledgements

The authors wish to thank all cooperating farmers who supplied data and provided valuable feedback in discussion groups held during late 2015.

The authors also acknowledge the support and efforts of Howard Smith for his assistance with data collection:

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1. 2014–15 Key findings

Fifteen Key Performance Indicators (KPI) are used to highlight the results for profitability, solvency and efficiency. Table 2 shows these results for 2014-15 and the preceding three years. Further to this is the calculation of these KPI for the top 25% of farms. These top farms have been identified as the farms with the highest dairy operating profit measured in dollars per cow.

Dairy operating profit highlights the amount of profit retained after paying all expenses except finance costs and taxes. These expenses include

the non-cash items of depreciation and an allowance for the manager's time and skill (called imputed labour). Cattle trading profit and inventory adjustments are also included.

Table 2 has been presented to show the general industry trend. The participating farms have not been selected randomly. If using this data to compare with an individual farm situation, consideration needs to be given to the individual's position in the business lifecycle, personal goals, farming system and asset base.

Table 2. Financial and performance ratios for QDAS farms (2011-12 to 2014-15)

Business traits and indicators ⁽¹⁾	Top 25%	QDAS average	Past QDAS averages		
	2014-15	2014-15	2013-14	2012-13	2011-12
Profitability					
Return on assets managed (%)	6.5	3.4	1.2	1.4	2.5
Return on equity (%)	8.3	3.2	-0.3	-0.2	1.4
Operating profit margin (%)	24.1	15.4	6.1	7.7	14.1
Dairy operating profit (\$/cow)	1,124	606	212	247	482
Solvency					
Equity (%)	77	80	81	81	82
Debt to equity ratio	0.29	0.25	0.23	0.23	0.22
Efficiency – Capital/Finance					
Asset turnover ratio	0.36	0.29	0.23	0.21	0.21
Total liabilities per cow (\$)	2,970	2,762	2,773	2,856	2,937
Interest paid/cow (\$)	186	174	186	206	232
Efficiency – Productivity					
Feed related costs (c/L)	31.7	31.8	30.8	26.8	26.2
Margin over feed related costs (c/L)	27.6	26.1	23.5	24.5	27.3
Total variable costs (c/L)	35.2	35.9	34.6	30.7	29.8
Gross margin - milk (\$/cow)	1,632	1,346	1,163	1,200	1,383
Efficiency – Physical					
Production per cow (L)	6,784	6,088	5,927	5,833	5,858
Litres per labour unit					
- On farms <1.0 m L	433,944	354,504	335,874	301,030	299,579
- On farms >1.0 m L	550,011	500,861	470,132	478,436	450,953

⁽¹⁾ The definition of each indicator and how it is calculated can be found in Appendix 10.9

Profitability

The profitability of Queensland dairy farms has increased from a historical low in 2013-14. Dairy operating profit per cow has increased from \$212 to \$606 and dairy operating profit per litre increased from 4.0c/L to 10.0c/L.

An increase in milk receipts of 3.8c/L, in response to falling milk production in Queensland, was a major contributor to the increase in profit. An increase in feed and livestock inventories contributed 2.9c/L to the dairy operating profit in 2014-15. The profit map in Appendix 10.3 shows in detail the calculation of dairy operating profit.

Drought continues to be a major factor, with non-coastal farms continuing to purchase large volumes of feed. Furthermore, the high demand for feed from western Queensland kept the unit price of feed high. Table 3 shows the trend in some feed prices.

Production and prices

While Queensland's milk production decreased by 22 million litres in 2014-15, primarily due to farm numbers decreasing by 42, the average milk production of QDAS farms has increased by 125,768 litres to 1,485,464 litres. This was due to a combination of increases in cow numbers and production per cow.

The milk production changes on individual farms are varied, with four QDAS farms increasing production by more than 300,000 litres and one farm decreasing production by more than 300,000 litres. Figure 3 shows the changes in milk production between 2013-14 and 2014-15 for individual QDAS farms.

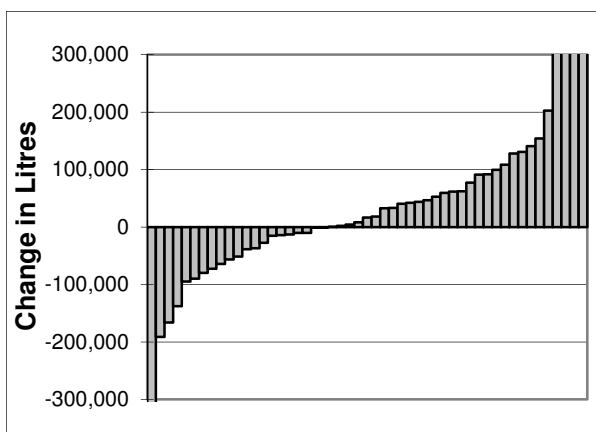


Figure 3. Change in milk production on individual farms between 2013-14 and 2014-15



QDAS average milk receipts (milk price) increased by 3.8c/L. North Queensland saw the largest increase with milk receipts increasing by 5.0c/L from 52.4 c/L to 57.4c/L. South east coastal grazing farms received a 4.6c/L increase in milk receipts. For the first time, all farms in QDAS received at least 50.0c/L in milk receipts. Figure 4 shows the changes in average milk receipts per litre between 2013-14 and 2014-15 for individual QDAS farms.

Production per cow

Production per cow increased slightly from 5,927 litres in 2013-14 to 6,088 litres in 2014-15. Darling Downs TMR farms recorded a 500 litre increase in production per cow due to an increased availability of high quality forage (even though at a high price).

Table 2 shows that the top 25% farms (by dairy operating profit per cow) achieved a production per cow 696 litres higher than the QDAS average.

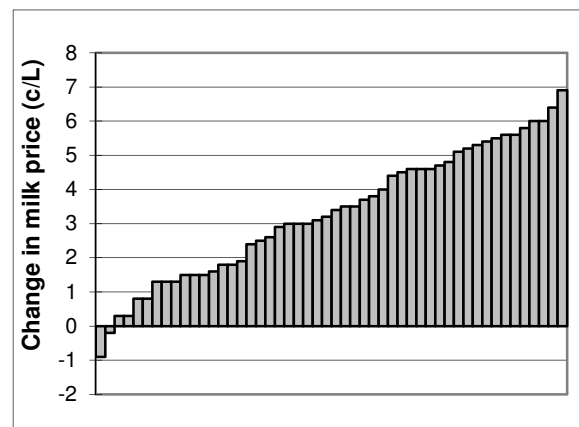


Figure 4. Change in average milk receipts on individual farms between 2013-14 and 2014-15

Production costs

Feed related costs increased by 1.0 c/L, from 30.8 c/L in 2013-14 to 31.8 c/L in 2014-15. This change is primarily due to a 1.4 c/L increase in the cost of purchased feeds. The price of grains, protein and other concentrates remained at high levels throughout 2014-15. Table 3 shows the prices of major farm inputs. These prices are sourced in southern Queensland and vary depending on contractual arrangements. Home grown feed costs, such as irrigation, seed and fuel, decreased by 0.4 c/L.

Herd costs and shed costs increased by 0.1 c/L each. Total variable costs, the sum of feed related costs, herd costs and shed costs, increased by 1.3 c/L.

The margin over feed related costs increased by 2.6 c/L, from 23.5 c/L to 26.1c/L. The margin over feed related costs per cow increased from \$1,391 to \$1,592.

The top 25% group achieved feed related costs of 31.7 c/L. Unlike previous years, this was only 0.1 c/L lower than the QDAS average. The margin over feed related costs for the top 25% group was 27.6 c/L (1.5 c/L higher than the average).

Once again the importance of feed related costs is evident in this year's data, consuming 55% of milk income.

Table 4 shows the cash receipts and cash costs of production for QDAS farms for 2014-15. Tables 6 and 7 show the trends in cash receipts and cash costs for the last ten years.

Table 3. Indicative prices per tonne of major farm inputs (June 2012 to June 2015)

	June 2012	June 2013	June 2014	June 2015
Concentrates				
Sorghum	\$180	\$325	\$300	\$340
Barley	\$205	\$365	\$340	\$345
Wheat	\$225	\$365	\$345	\$350
Soybean meal	\$635	\$746	\$720	\$620
Canola meal	\$370	\$545	\$550	\$510
14% dairy pellet	\$345	\$375	\$430	\$410
Fertiliser				
Urea	\$705	\$615	\$565	\$535
Diesel				
Bowser price	\$1.45	\$1.52	\$1.60	\$1.39

Conditions across the state

North Queensland experienced a dry year that was punctuated by large amounts of rain that fell in short periods. As a result feed related costs increased by 3.6 c/L.

Cyclone Marcia caused severe damage to Central Queensland dairy farms caught in the eye of the storm and associated flooding.

Farms on the northern Darling Downs continued to experience drought conditions. Farms did have more access to quality forages than in the previous year but at high prices. On the southern Darling Downs, many farms received good rain and reduced their feed related costs. Many farms increased their stored hay and silage inventory.

Good rain in most areas of the south east coastal region resulted in decreased irrigation use, especially during the ryegrass growing season.

The one positive across all of Queensland was the high prices received at cattle sales. Many farmers took the opportunity to sell cows that were not meeting their production obligations.

Table 4. Cash analysis of the costs of production (2014-15)

	c/L
Farm receipts	
Milk receipts (Net)	58.0
Other farm receipts	5.2
Total farm receipts	63.2
Production costs	
Purchased feed	24.2
Home grown feed	7.6
Total feed related costs	31.8
Herd costs	2.2
Shed costs	1.9
Administration	2.3
Repairs & maintenance	2.9
Employed labour	6.1
Farm working expenses	47.2
Interest, principal, lease	6.8
Owners labour	5.4
Total cash costs	59.4
Surplus / Deficit	3.8

Labour

Average paid labour costs are \$90,914 for 1.6 labour units. This equates to 6.1 c/L, which is the same as in 2013/14. As farms milk more cows there are opportunities to utilise labour more effectively. Table 5 shows that farms producing less than 0.75 m L (121 cows) do so at 348,607 litres per labour unit; whereas farms producing more than 1.75 m L (401 cows) do so at 529,929 litres per labour unit.

Table 5 also shows the increase in labour used, both paid and unpaid (family), as production increases. It is not surprising that the greater than 1.75 m L group has the largest use of paid labour at 3.3 full time equivalents (FTE). This is more than double the paid labour use of the 1.25 m L to 1.75 m L group.

Administration efficiencies

The QDAS average administration cost is \$34,721 (2.3 c/L). While administration costs increase as production increases, the costs get proportionately lower per litre. Table 5 shows administration falling from 3.2 c/L to 1.9 c/L as production increases. Table 6 shows administration costs increasing from 1.9 c/L to 2.3 c/L over the past ten years. Administration costs include rates, insurance, registration, office expenses, accounting, levies and telephone.

The QDAS average repairs and maintenance is \$42,596 (2.9 c/L). Table 5 shows that repairs and maintenance is 3.6 c/L for the farms that produce less than 0.75 m L and 2.4 c/L for the farms that produce more than 1.75 m L of milk.

Table 5. Analysis of administration costs and labour inputs and costs (2014-15)

	<0.75 m L	0.75 – 1.25m L	1.25 – 1.75m L	>1.75m L
Milk production (L)	620,022	1,029,641	1,430,354	2,812,408
Cows (milkers + dry)	121	190	253	401
Overheads				
Admin (\$)	19,782	24,092	39,458	52,681
Admin (c/L)	3.2	2.3	2.8	1.9
Repairs & Maintenance (\$)	22,630	31,661	45,117	68,693
Repairs & Maintenance (c/L)	3.6	3.1	3.2	2.4
Labour				
Unpaid labour (FTE)	1.3	1.6	1.5	2.0
Paid labour (FTE)	0.5	0.7	1.6	3.3
Paid labour cost (c/L)	4.1	3.5	6.9	6.9
Litres per labour unit	348,607	439,734	463,898	529,929



2. Farm cash flow over the years

This page shows time series data to calculate operating cash surplus and a cash surplus/deficit from 2005-06 to 2014-15. Milk receipts are highest in 2014-15 at 58.0 c/L. 2006-07 saw feed costs increase with dry seasonal conditions and since then fluctuate with commodity, fuel and fertiliser prices. The 2014-15 result shows feed related costs at 31.8c/L which is the highest of these ten years. Herd, shed, administration, repairs and labour costs have all increased over this period.

Since 2005-06 there have been the following increases.

- Purchased feed up 92%.
- Feed related costs up 69%.
- Employed labour up 79%.

Figure 5. Total farm receipts and total cash costs from 2005-06 to 2014-15

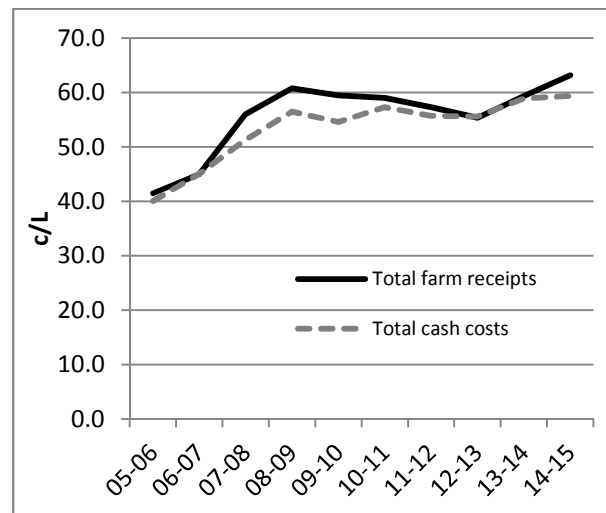


Table 6. Operating cash surplus (c/L) (2005-06 to 2014-15)

	2005 -06	2006 -07	2007 -08	2008 -09	2009 -10	2010 -11	2011 -12	2012 -13	2013 -14	2014 -15
Milk receipts (Net)	35.8	37.6	51.0	55.9	55.7	53.5	53.4	51.3	54.2	58.0
Total farm receipts	41.5	45.0	56.0	60.8	59.5	59.0	57.3	55.4	59.4	63.2
<u>Production costs</u>										
Purchased feed	12.6	16.2	17.9	19.7	20.0	19.1	18.2	19.4	22.8	24.2
Home grown feed	6.2	6.8	9.3	9.4	7.2	7.4	8.0	7.4	8.0	7.6
Feed related costs	18.8	23.0	27.2	29.1	27.2	26.5	26.2	26.8	30.8	31.8
Herd costs	1.5	1.5	1.7	1.9	1.9	2.2	2.1	2.2	2.1	2.2
Shed costs	1.0	1.0	1.1	1.2	1.3	1.6	1.6	1.7	1.8	1.9
Administration	1.9	1.8	2.0	2.2	2.1	2.3	2.4	2.4	2.5	2.3
Repairs & maintenance	2.3	2.4	2.7	3.3	3.7	3.6	3.3	3.2	3.4	2.9
Employed labour	3.4	3.6	4.0	5.1	5.6	6.0	5.4	5.4	5.9	6.1
Farm working expenses	28.9	33.3	38.7	42.8	41.8	42.2	41.0	41.7	46.4	47.2
Operating cash surplus	12.6	11.7	17.3	18.0	17.7	16.8	16.3	13.7	13.0	16.0

Table 7. Cash surplus / deficit (c/L) (2005-06 to 2014-15)

	2005 -06	2006 -07	2007 -08	2008 -09	2009 -10	2010 -11	2011 -12	2012 -13	2013 -14	2014 -15
Total Farm Receipts	41.5	45.0	56.0	60.8	59.5	59.0	57.3	55.4	59.4	63.2
Farm working expenses	28.9	33.3	38.7	42.8	41.8	42.2	41.0	41.7	46.4	47.2
Interest, principal	5.2	5.6	6.3	7.2	6.2	8.3	7.8	7.3	7.0	6.8
Owners' labour	6.0	6.2	6.3	6.5	6.6	6.8	6.9	6.6	5.9	5.4
Total cash costs	40.1	45.1	51.3	56.5	54.6	57.3	55.7	55.6	59.3	59.4
Cash surplus / deficit	1.4	-0.1	4.7	4.3	4.9	1.7	1.6	-0.2	0.1	3.8

3. The distribution of QDAS cooperating farms

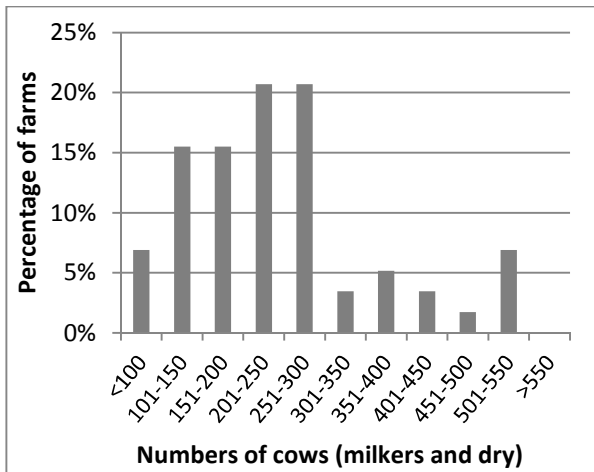


Figure 6. The distribution of QDAS farms by cow numbers

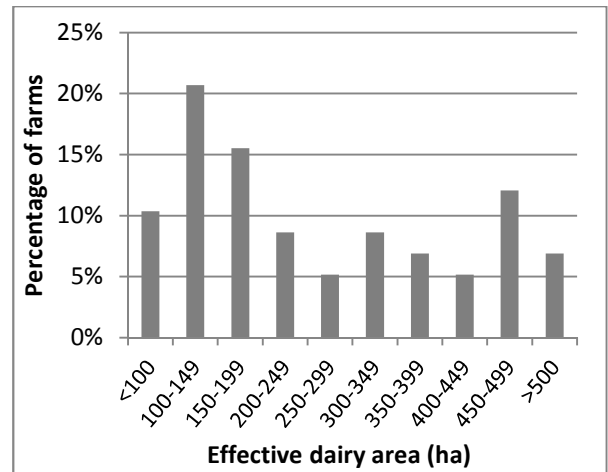


Figure 9. The distribution of QDAS farms by effective dairy area

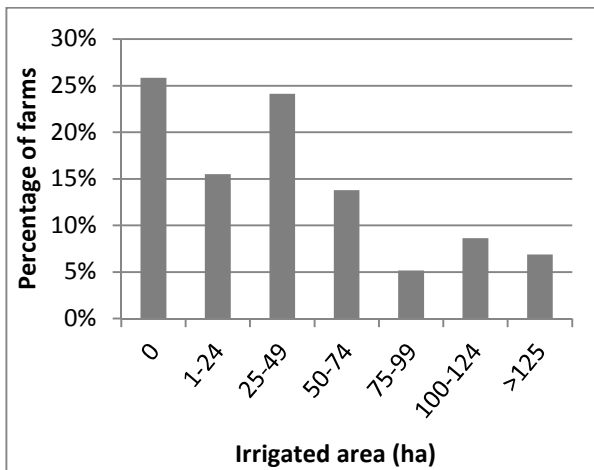


Figure 7. The distribution of QDAS farms by irrigated area

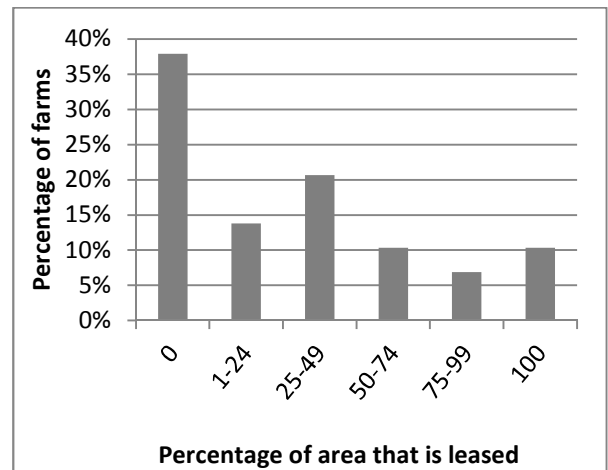


Figure 10. The distribution of QDAS farms by the percentage of effective area that is leased

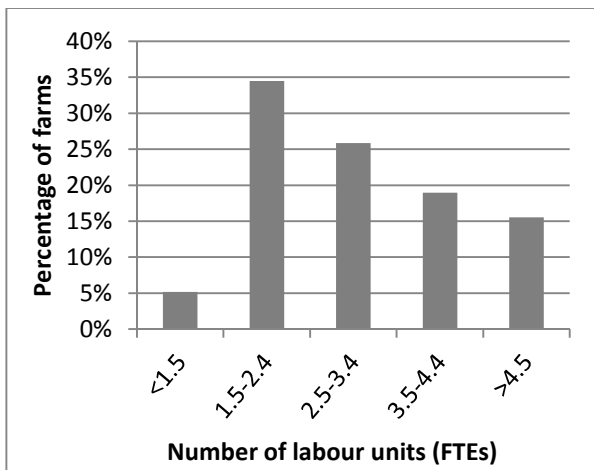


Figure 8. The distribution of QDAS farms by number of labour units

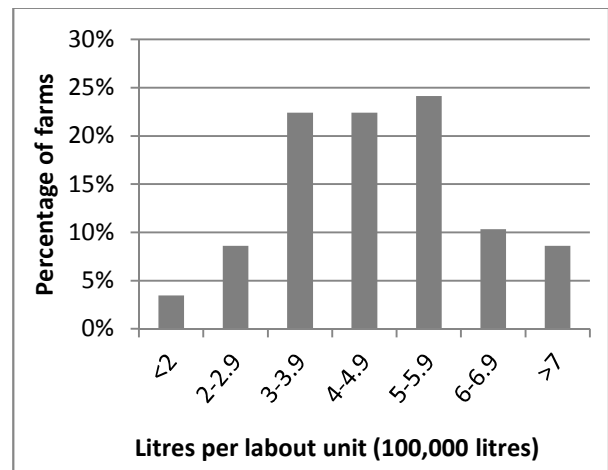


Figure 11. The distribution of QDAS farms by litres per labour unit

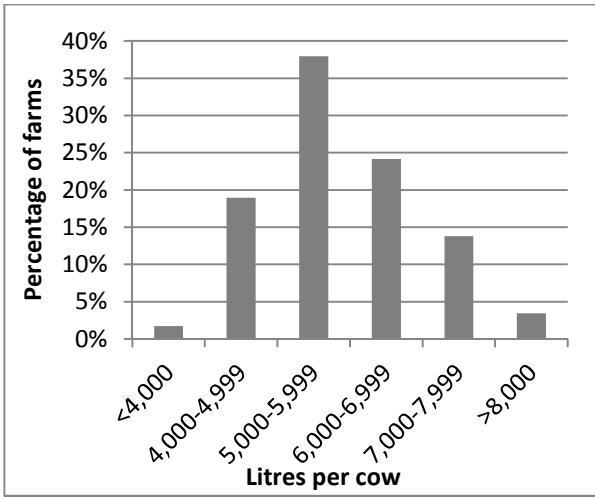


Figure 12. The distribution of QDAS farms by production per cow

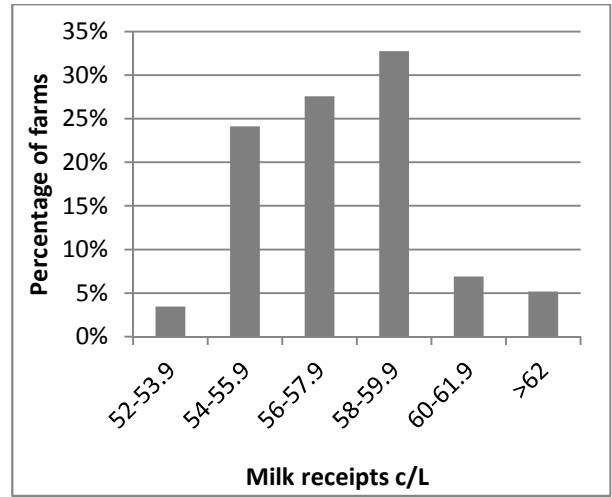


Figure 15. The distribution of QDAS farms by average milk receipts

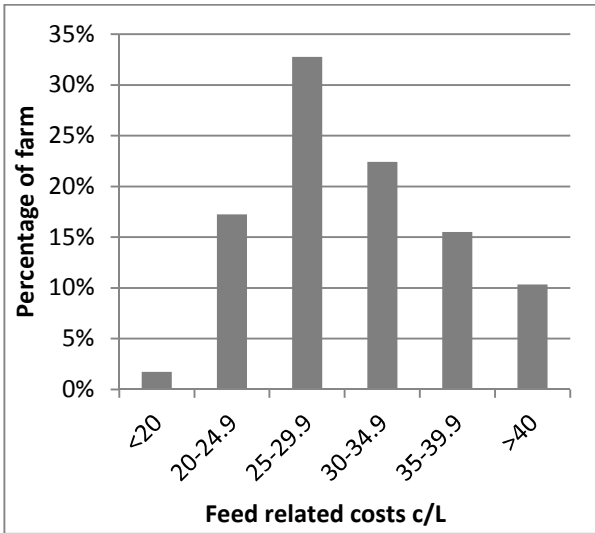


Figure 13. The distribution of QDAS farms by feed related costs



Figure 16. The distribution of QDAS farms by return on assets managed

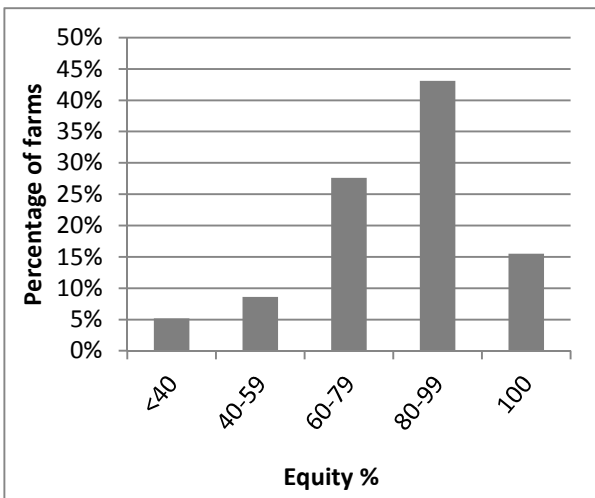


Figure 14. The distribution of QDAS farms by equity percentage

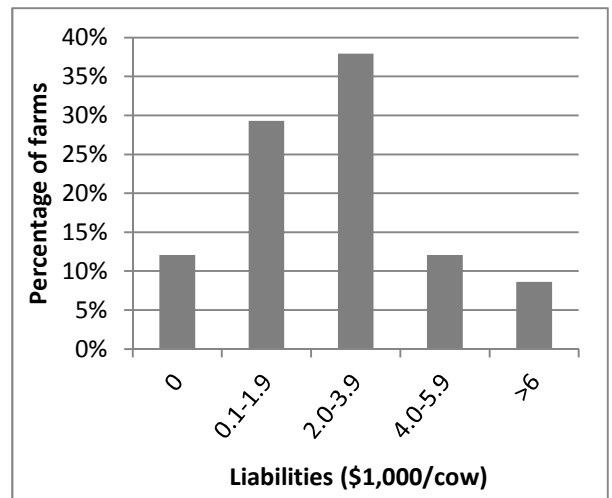


Figure 17. The distribution of QDAS farms by liabilities per cow

4. Factors affecting profitability

To investigate the factors affecting profitability, the QDAS results of the top 25% group (sorted by dairy operating profit per cow) are compared with the results of the remaining 75% of farms. Table 8 shows these results.

The higher dairy operating profit per cow achieved by the top 25% group is directly linked to the following profit drivers:

- Higher production per cow. The top 25% group produced 1,094 litres per cow more than the remaining 75% group.
- Selling more litres of milk. The top 25% group sold over 1 million more litres of milk than the remaining 75% group. This is driven by production per cow and by having 133 more cows (milkers and dry).
- Higher milk receipts. The top 25% group received 2.2 c/L more for their milk which was due to processor payment structures and rewards for quality and volume.
- Lower feed related costs. The top 25% group had feed related costs 0.2 c/L lower than the other group. The margin over feed related costs is 2.5 c/L higher.
- Better labour efficiency. The top 25% group achieved 110,981 more litres per labour unit, which is a 26% advantage over the other group.

Table 8. KPI for top 25% and the remaining 75% of farms (2014-15)

	Top 25%	Remaining 75%
Physical traits		
Cows (milkers + dry)	343	210
Farm production (L)	2,325,419	1,192,457
Efficiency - Physical		
Production per cow (L)	6,784	5,690
Litres per labour unit	543,322	432,341
Profit Analysis		
Dairy operating profit (\$/cow)	1,125	311
Average investment (\$/cow)	13,064	13,924
Cash Analysis		
Milk receipts (c/L)	59.3	57.1
Feed related costs (c/L)	31.7	31.9
Total variable costs (c/L)	35.2	36.3
Margin over FRC (c/L)	27.6	25.1
Margin over FRC (\$/cow)	1,875	1,430



Production per cow

QDAS reports have always shown that farms with higher production per cow have higher profitability. Table 9 shows that as production per cow increases from below 5,000 litres to above 7,000 litres profits increase. Interestingly, it is the larger farms that are achieving the highest production per cow.

Dairy operating profit per cow increased from \$17 to \$472 as production per cow increased.

The margin over feed related costs per litre is the highest in the <5,000 litre group, while the margin over feed related costs per cow is highest in the 6,000-7,000 litres group.

Table 9. KPI for four production (L) per cow groups in Queensland (2014-15)

	<5,000	5,000 - 6,000	6,000 - 7,000	>7,000
Farm milk production (L)	1,015,206	1,223,444	1,253,995	3,149,536
Cows (milkers + dry)	216	223	196	412
Production per cow (L)	4,584	5,441	6,326	7,597
Milk receipts (c/L)	54.0	54.8	54.1	55.3
Margin over FRC (c/L)	27.8	23.8	25.3	20.8
Margin over FRC (\$/cow)	1,272	1,292	1,600	1,581
Dairy operating profit (\$/cow)	17	308	347	472

Herd size

An important profit driver is the scale of operation. Table 10 shows the effect that increasing milk production has on profitability indicators.

Increasing the scale of a farm's operation can lead to efficiencies in administration and the use of labour. The farms producing more than 2 million litres had the highest production per cow at 7,030 litres whereas the farms producing less than 750,000 litres produced 5,130 litres per cow.

The larger herds have the highest margin over feed related costs per cow. This is an indicator of

their attention to detail and recognition of the need for efficient feeding systems.

Labour usage was excellent in the larger herds with 525,718 litres produced per labour unit. Labour efficiency dropped to 348,607 litres per labour unit in the smaller herds.

With a dairy operating profit of \$927/cow, the farms that produced more than 2.0 million litres had the highest dairy operating profit per cow. The group producing less than 0.75 million litres recorded the lowest dairy operating profit per cow.

Table 10. KPI for farms with increasing annual production (2014-15)

	<0.75 m L	0.75 – 1.25 m L	1.25 – 2.0 m L	>2.0 m L
Farm milk production (L)	628,558	1,039,212	1,492,570	2,986,840
Cows (milkers + dry)	121	190	255	423
Production per cow (L)	5,130	5,415	5,768	7,030
Margin over feed related costs (\$/cow)	1,407	1,507	1,569	1,714
Litres per labour unit	348,607	439,734	475,347	525,716
Return on assets managed (%)	1.9	2.6	2.4	5.6
Dairy operating profit (\$/cow)	353	400	464	927

5. Production system analysis

QDAS data collection concentrates on gaining a “snap-shot” into different production systems in the regions. The three systems are:

Grazing (GRA) – Milk production principally from grazing and grain and concentrates fed in the dairy. Less than 5% of dry matter intake is from hay or silage.

Partial Mixed Ration (PMR) – Milk production from a combination of grazing, grain, concentrates, hay and silage. More than 5% of dry matter intake is from hay or silage and at least 1% of dry matter intake is from grazing.

Total Mixed Ration (TMR) – Milk production principally from a silage based mixed ration fed on a pad. Less than 1% of dry matter intake is from grazing.

Table 11 shows the distribution of the participating QDAS farms among the regional production systems. No reports are generated for a regional production system when less than five farms are surveyed in that system.

Table 11. The number of farms collected in each regional production system (2014-15)

Region	GRA	PMR	TMR	Total
North Queensland	11	2	0	13
Central Queensland	1	0	0	1
Darling Downs	2	3	10	15
South East Coastal	12	17	0	29
Total	26	22	10	58

Table 12. KPI for farming systems (2014-15)

	Sth East Coastal Grazing	Sth East Coastal PMR	Darling Downs TMR	North Qld Grazing
Cows (milkers + dry)	218	258	301	196
Farm production (L)	1,168,973	1,557,486	2,157,209	1,088,687
Production per cow (L)	5,359	6,044	7,169	5,297
Milk receipts (c/L)	59.6	57.1	58.0	57.4
Feed related costs (c/L)	29.1	29.5	39.2	29.8
Total variable costs (c/L)	33.3	33.3	42.8	35.5
Margin over feed related costs (c/L)	30.4	27.6	18.8	27.6
Dairy operating profit (\$/cow)	708	519	542	328
Return on assets managed (%)	4.4	2.8	3.4	1.7

Table 12 presents a summary of the KPI for each regional production system. There are several points of interest.

- For the first time since QDAS has reported regional production systems results, North Queensland does not have the lowest average milk receipts. Milk receipts vary from 57.1c/L for South East Coastal PMR to 59.6 c/L for South East Coastal Grazing farms.
- Production per cow increases as the feeding system intensifies. The grazing farms in South East Coastal and North Queensland achieved 5,359 L/cow and 5,297 L/cow. The South East Coast PMR farms averaged 6,044 L/cow while the Darling Downs TMR farms achieved 7,169 L/cow.
- Good seasonal conditions and improved milk receipts have resulted in the South East Coastal grazing farms achieving the highest dairy operating profit of \$708/cow and highest return on assets managed of 4.4%.

This data should not be interpreted as a definitive guide for changing a farming system. It should be noted that even if a regional production system is shown here to be more profitable, the skills, infrastructure and resources required on alternative systems are quite different. Farmers contemplating a change should seek help with the phasing and sizing of that change.

6. South East Coastal - Grazing

Farms obtaining a large proportion of their milk from grazing and which are located in the areas of Beaudesert, Moreton, Brisbane Valley and Gympie have been grouped under the heading of South East Coastal. These areas have higher and more reliable rainfall and have a higher proportion of irrigation than the Darling Downs farms. Permanent summer pastures are mainly kikuyu, panics and setaria with irrigation areas planted to ryegrass, clover and lucerne. Kikuyu pastures are also oversown to winter forages with grazing crops of forage sorghum and oats also grown. Grain and molasses are readily available as supplements, fed at milking time.

The farms in this group have invested \$11,610 per cow in their operation, of which 65% is in the land value. Equity levels are high, averaging at 80%, and a return on assets managed of 4.4% was achieved.

Table 14 shows the data trends for farms with continuous participation in QDAS over the last four years (2011-12 to the present). This sample of farms is slightly smaller than the sample used in Table 13. There are several points of interest.

- Milk receipts have increased in 2014-15 to 60.2c/L and this is the highest of these four years.
- Cow numbers have increased each year from 195 in 2011-12 to 217 in 2014-15.
- Production per cow has decreased in 2014-15 to 5,561.
- Feed related costs are highest in 2014-15.
- Dairy operating profit increased to \$779 per cow in 2014-15 to be the highest of these four years.

Table 13. Statistics for South East Coastal grazing farms (2014-15)

Resources	
Cows (milkers + dry)	218
Mated heifers	55
Other heifers	116
Total dairy herd	388
Milking cow area (ha)	86
Effective dairy area (ha)	150
Labour units	2.5
Assets and Liabilities	
Land & buildings (\$)	1,644,583
Stock (\$)	435,033
Plant (\$)	191,192
Other (\$)	254,418
TOTAL (\$)	2,525,226
Liabilities (\$)	500,498
Equity (%)	80
Investment per cow (\$)	11,610
Debt per cow (\$)	2,301
Productivity	
Milk production (L)	1,168,973
Production per cow (L)	5,359
Financial	
Milk receipts (c/L)	59.6
Feed related costs (c/L)	29.1
Total variable costs (c/L)	33.3
Margin over feed related costs (c/L)	30.4
Dairy operating profit (\$/cow)	708
Return on assets managed (%)	4.4

Table 14. Trends for South East Coastal grazing farms (2011-12 to 2014-15)

	2011-12	2012-13	2013-14	2014-15
Milk receipts (c/L)	54.8	53.2	56.5	60.2
Cows (milkers and dry)	195	201	206	217
Production per cow (L)	5,310	5,122	5,641	5,561
Feed related costs (c/L)	24.1	25.6	28.5	29.8
Margin over feed related costs (c/L)	30.7	27.6	28.0	30.4
Total variable costs (c/L)	28.6	30.3	32.9	34.1
Dairy operating profit (\$/cow)	551	399	604	779

7. South East Coastal - PMR

South East Coastal PMR farms are located alongside the grazing properties in this region. They have the ability to grow similar forages to the prior group, but supplement their milkers with silage made from maize, sorghum, lucerne and/or ryegrass.

These farms have a higher investment in stock and plant. This production system usually results in higher production per cow than that of grazing farms.

The farms in this group have invested \$12,955 per cow in their operation with 70% tied to the land. Equity levels are high, averaging at 85% and a return on assets managed of 2.8% was achieved.

Table 16 shows the data trends for farms with continuous participation in QDAS over the last four years (2011-12 to the present). This sample of farms is slightly smaller than the sample used in Table 15. There are several points of interest.

- Milk receipts have increased to 57.3 c/L in 2014-15 to be the highest of these four years.
- Cow numbers have only marginally fluctuated over the past three years, being either 244 or 245.
- Production per cow has increased each year from 5,856 in 2011-12 to 6,106 in 2014-15.
- Feed related costs are highest in 2014-15 at 29.5c/L.
- Dairy operating profit is highest in 2014-15 at \$533 per cow.

Table 15. Statistics for South East Coastal PMR farms (2014-15)

Resources	
Cows (milkers + dry)	258
Mated heifers	49
Other heifers	114
Total dairy herd	420
Milking cow area (ha)	117
Effective dairy area (ha)	231
Labour units	3.7
Assets and Liabilities	
Land & buildings (\$)	2,330,000
Stock (\$)	528,885
Plant (\$)	301,582
Other (\$)	177,983
TOTAL (\$)	3,338,450
Liabilities (\$)	496,606
Equity (%)	85
Investment per cow (\$)	12,955
Debt per cow (\$)	1,927
Productivity	
Milk production (L)	1,557,486
Production per cow (L)	6,044
Financial	
Milk receipts (c/L)	57.1
Feed related costs (c/L)	29.5
Total variable costs (c/L)	33.3
Margin over feed related costs (c/L)	27.6
Dairy operating profit (\$/cow)	519
Return on assets managed (%)	2.8

Table 16. Trends for South East Coastal PMR farms (2011-12 to 2014-15)

	2011-12	2012-13	2013-14	2014-15
Milk receipts (c/L)	52.9	51.7	54.5	57.3
Cows (milkers and dry)	233	244	245	244
Production per cow (L)	5,856	5,959	6,030	6,106
Feed related costs (c/L)	25.3	23.8	29.4	29.5
Margin over feed related costs (c/L)	27.6	28.0	25.1	27.8
Total variable costs (c/L)	28.8	27.0	32.9	33.3
Dairy operating profit (\$/cow)	457	308	317	533

8. Darling Downs - TMR

The majority of the TMR farms are located north of the Warrego Highway and are mostly dryland farms with large cropping areas. Most farmers concentrate on growing large volumes of summer forages for silage. Winter crops are opportunistic in years when sub-soil moisture is available. In years of average or above average rainfall they grow all their own forage requirements.

These farms have commodity sheds. Grain, by-products and protein meals are purchased in bulk and forward contracting is common. They are ideally situated in relation to the grain growing areas of Queensland which reduces freight costs on grain. It is common to feed up to 12 -14 kilograms of concentrate per cow per day.

They have invested \$12,830 per cow in their operation with 61% tied to the land. With the large investment in infrastructure that is required, they have a high debt per cow of \$3,870 and equity of 70%, the lowest equity of all groups. A return on assets managed of 3.4% was achieved.

Table 18 shows the data trends for farms with continuous participation in QDAS over the last four years (2011-12 to the present). This sample of farms is slightly smaller than the sample used in Table 17. There are several points of interest.

- Milk receipts are highest in 2014-15.
- Cow numbers have increased from 251 in 2011-12 to between 292 and 299 in the next three years.
- Production per cow was highest in 2011-12 at 7,183. After dropping to a low of 6,594 in 2013-14 it has increased to 7,090 in 2014-15.
- Feed related costs are highest in 2014-15.
- Dairy operating profit was highest in 2011-12.

Table 17. Statistics for Darling Downs TMR farms (2014-15)

Resources	
Cows (milkers + dry)	301
Mated heifers	73
Other heifers	157
Total dairy herd	531
Milking cow area (ha)	199
Effective dairy area (ha)	550
Labour units	4.1
Assets and Liabilities	
Land & buildings (\$)	2,361,660
Stock (\$)	730,792
Plant (\$)	578,520
Other (\$)	189,528
TOTAL (\$)	3,860,500
Liabilities (\$)	1,164,608
Equity (%)	70
Investment per cow (\$)	12,830
Debt per cow (\$)	3,870
Productivity	
Milk production (L)	2,157,209
Production per cow (L)	7,169
Financial	
Milk receipts (c/L)	58.0
Feed related costs (c/L)	39.2
Total variable costs (c/L)	42.8
Margin over feed related costs (c/L)	18.8
Dairy operating profit (\$/cow)	542
Return on assets managed (%)	3.4

Table 18. Trends for Darling Downs TMR farms (2011-12 to 2014-15)

	2011-12	2012-13	2013-14	2014-15
Milk receipts (c/L)	54.9	53.5	55.7	57.8
Cows (milkers and dry)	251	292	299	295
Production per cow (L)	7,183	6,993	6,594	7,090
Feed related costs (c/L)	30.8	32.7	39.2	40.3
Margin over feed related costs (c/L)	24.1	20.8	16.5	17.4
Total variable costs (c/L)	33.9	35.6	42.4	43.8
Dairy operating profit (\$/cow)	718	583	78	404

9. North Queensland - Grazing

These farms are located in tropical North Queensland around the areas of Malanda, Millaa Millaa and Ravenshoe.

Grazing with grain fed in the dairy is the predominant production system in the tropics. This means the upper limit for daily grain intake is 6-8 kg. Some farms feed whole cottonseed and many feed rhodes grass hay for limited periods.

The farms in this group have invested \$15,525 per cow in their operation, of which 74% is in the land value. Equity levels are high, averaging 82%, and a return on assets managed of 1.7% was achieved.

Feed concentrates are more expensive (due to the freight component) than in the South East Coastal and Darling Downs systems.

Table 20 shows the data trends for farms with continuous participation in QDAS over the last four years (2011-12 to the present). This sample of farms is slightly smaller than the sample used in Table 19. There are several points of interest.

- Milk receipts are highest in 2014-15 at 57.5 c/L, an increase of 8.7c/L in two years.
- Cow numbers have stayed between 160 and 163 over these four years.
- Production per cow has stayed between 5,550 and 5,670 over these four years.
- Feed related costs are the highest in 2014-15 at 28.9c/L.
- Dairy operating profit per cow has increased from -\$64 in 2012-13 to \$347 in 2014-15 due primarily to an increase in milk receipts.

Table 19. Statistics for North Queensland grazing farms (2014-15)

Resources	
Cows (milkers + dry)	196
Mated heifers	38
Other heifers	116
Total dairy herd	351
Milking cow area (ha)	100
Effective dairy area (ha)	241
Labour units	2.4
Assets and Liabilities	
Land & buildings (\$)	2,251,000
Stock (\$)	539,195
Plant (\$)	205,455
Other (\$)	48,621
TOTAL (\$)	3,044,271
Liabilities (\$)	563,590
Equity (%)	82
Investment per cow (\$)	15,525
Debt per cow (\$)	2,874
Productivity	
Milk production (L)	1,088,687
Production per cow (L)	5,297
Financial	
Milk receipts (c/L)	57.4
Feed related costs (c/L)	29.8
Total variable costs (c/L)	35.5
Margin over feed related costs (c/L)	27.6
Dairy operating profit (\$/cow)	328
Return on assets managed (%)	1.7

Table 20. Trends for North Queensland grazing farms (2011-12 to 2014-15)

	2011-12	2012-13	2013-14	2014-15
Milk receipts (c/L)	51.4	48.8	52.5	57.5
Cows (milkers and dry)	163	162	160	163
Production per cow (L)	5,556	5,580	5,670	5,550
Feed related costs (c/L)	26.3	25.0	26.6	28.9
Margin over feed related costs (c/L)	25.1	23.8	25.8	28.6
Total variable costs (c/L)	31.0	29.7	31.4	33.7
Dairy operating profit (\$/cow)	122	-64	466	347

10. Appendices

10.1 Group cash flow – All 58 QDAS farms (2014–15)

Queensland dairy accounting scheme						
Group cashflow					Year: 2015	
All farms						
Cash receipts		Cents/litre	\$/cow	\$/kg MS	Total \$ earned	
Milk receipts	1,485,464 litres	59.0	3,589.5	8.12	875,906	
less cartage and levies		-1.0	-60.3	-0.14	-14,710	
Milk Receipts - net of cartage and levies		58.0	3,529.2	7.98	861,196	
Stock sales - dairy		4.3	259.7	0.59	63,372	
Other farm receipts		1.0	59.6	0.13	14,534	
Total farm receipts		63.2	3,848.5	8.70	939,102	
Cash costs		Cents/litre	\$/cow	\$/kg MS	% Milk receipts	Total \$ spent
Purchased grain, concentrates, additives		20.9	1,273.9	2.88	36.1	310,851
Purchased fodder, silage, hay		3.3	201.2	0.46	5.7	49,108
Total purchased feeds		24.2	1,475.1	3.34	41.8	359,959
Fertiliser		2.4	145.9	0.33	4.1	35,610
Fuel & oil		1.4	86.0	0.19	2.4	20,984
Seed and ag chemicals		1.1	64.0	0.14	1.8	15,607
Irrigation costs		0.9	54.0	0.12	1.5	13,178
Hay and silage making costs		1.4	86.8	0.20	2.5	21,187
Agistment costs		0.3	21.2	0.05	0.6	5,174
Other feed costs		0.1	4.5	0.01	0.1	1,099
Feed Related Costs		31.8	1,937.6	4.38	54.9	472,799
Animal health		1.5	92.2	0.21	2.6	22,510
Herd improvement		0.6	39.2	0.09	1.1	9,554
Herd costs		2.2	131.4	0.30	3.7	32,064
Dairy shed costs - electricity		1.0	61.9	0.14	1.8	15,116
Dairy shed costs - chemicals		0.9	51.7	0.12	1.5	12,628
Shed costs		1.9	113.7	0.26	3.2	27,744
Total Variable Costs		35.9	2,182.7	4.94	61.8	532,607
Administration		2.3	142.3	0.32	4.0	34,721
Repairs & maintenance		2.9	174.6	0.39	4.9	42,596
Paid labour		6.1	372.6	0.84	10.6	90,914
Total overhead costs		11.3	689.4	1.56	19.5	168,231
Farm working expenses		47.2	2,872.1	6.50	81.4	700,838
Interest		2.9	174.4	0.39	4.9	42,556
Principal		2.5	151.5	0.34	4.3	36,963
Land lease costs		1.4	85.9	0.19	2.4	20,969
Owner's labour		5.4	331.3	0.75	9.4	80,838
Total cash costs		59.4	3,615.2	8.18	102.4	882,164
Net cashflow before tax		3.8	233.3	0.53	6.6	56,938
Margin over feed related costs		26.1	1,591.7	3.60	45.1	388,397
Gross Margin - milk only		22.1	1,346.6	3.05	38.2	328,589
Operating cash surplus		16.0	976.4	2.21	27.7	238,264
Labour inputs		Stock		Production		
Unpaid labour	1.6	Cows (milking and dry)	244	Total litres sold	1,485,464	
Paid labour	1.6	Total herd	428	Litres/cow	6,088	
Total labour units	3.2	Areas		Protein (kg)	3.31%	49,212
Litres/labour unit	471,318	Usable area (ha)	285	Butterfat (kg)	3.95%	58,689
Cows/labour unit	77	Irrigation area (ha)	47	Milk solids/cow		442

Farms in report: 58

Report created: 2/12/2015 3:15 PM

10.2 Group cash gross margin – Top 25% of farms (2014–15)

Queensland dairy accounting scheme

Group cashflow

Year: 2015

Top 25%

Cash receipts		Cents/litre	\$/cow	\$/kg MS	Total \$ earned	
Milk receipts	2,325,419 litres	60.6	4,108.1	8.30		1,408,268
less cartage and levies		-1.3	-85.2	-0.17		-29,223
Milk Receipts - net of cartage and levies		59.3	4,022.9	8.12		1,379,045
Stock sales - dairy		4.6	311.0	0.63		106,595
Other farm receipts		0.9	60.5	0.12		20,726
Total farm receipts		64.8	4,394.3	8.88		1,506,366
Cash costs		Cents/litre	\$/cow	\$/kg MS	% Milk receipts	Total \$ spent
Purchased grain, concentrates, additives		21.2	1,434.8	2.90	35.7	491,834
Purchased fodder, silage, hay		3.5	234.9	0.47	5.8	80,522
Total purchased feeds		24.6	1,669.7	3.37	41.5	572,356
Fertiliser		2.3	155.3	0.31	3.9	53,235
Fuel & oil		1.5	99.5	0.20	2.5	34,122
Seed and ag chemicals		1.1	71.7	0.14	1.8	24,578
Irrigation costs		0.8	51.5	0.10	1.3	17,649
Hay and silage making costs		1.4	92.7	0.19	2.3	31,788
Agistment costs		0.1	4.6	0.01	0.1	1,572
Other feed costs		0.0	2.8	0.01	0.1	943
Feed Related Costs		31.7	2,147.7	4.34	53.4	736,244
Animal health		1.4	95.2	0.19	2.4	32,623
Herd improvement		0.6	38.3	0.08	1.0	13,130
Herd costs		2.0	133.5	0.27	3.3	45,753
Dairy shed costs - electricity		0.9	59.4	0.12	1.5	20,359
Dairy shed costs - chemicals		0.7	50.1	0.10	1.2	17,182
Shed costs		1.6	109.5	0.22	2.7	37,541
Total Variable Costs		35.2	2,390.7	4.83	59.4	819,538
Administration		2.0	132.4	0.27	3.3	45,381
Repairs & maintenance		2.4	165.4	0.33	4.1	56,713
Paid labour		5.6	382.3	0.77	9.5	131,066
Total overhead costs		10.0	680.2	1.37	16.9	233,161
Farm working expenses		45.3	3,070.9	6.20	76.3	1,052,699
Interest		2.7	186.5	0.38	4.6	63,932
Principal		2.6	179.0	0.36	4.4	61,364
Land lease costs		1.5	100.8	0.20	2.5	34,539
Owner's labour		4.7	322.1	0.65	8.0	110,400
Total cash costs		56.9	3,859.2	7.79	95.9	1,322,934
Net cashflow before tax		7.9	535.1	1.08	13.3	183,432
Margin over feed related costs		27.6	1,875.1	3.79	46.6	642,801
Gross Margin - milk only		24.1	1,632.2	3.30	40.6	559,507
Operating cash surplus		19.5	1,323.4	2.67	32.9	453,667
Labour inputs		Stock	Production			
Unpaid labour	2.0	Cows (milking and dry)	343	Total litres sold	2,325,419	
Paid labour	2.3	Total herd	611	Litres/cow	6,784	
Total labour units	4.3	Areas		Protein (kg)	3.37%	78,393
Litres/labour unit	543,322	Usable area (ha)	376	Butterfat (kg)	3.93%	91,338
Cows/labour unit	80	Irrigation area (ha)	77	Milk solids/cow		495

Farms in report: 15

Report created: 2/12/2015 3:18 PM

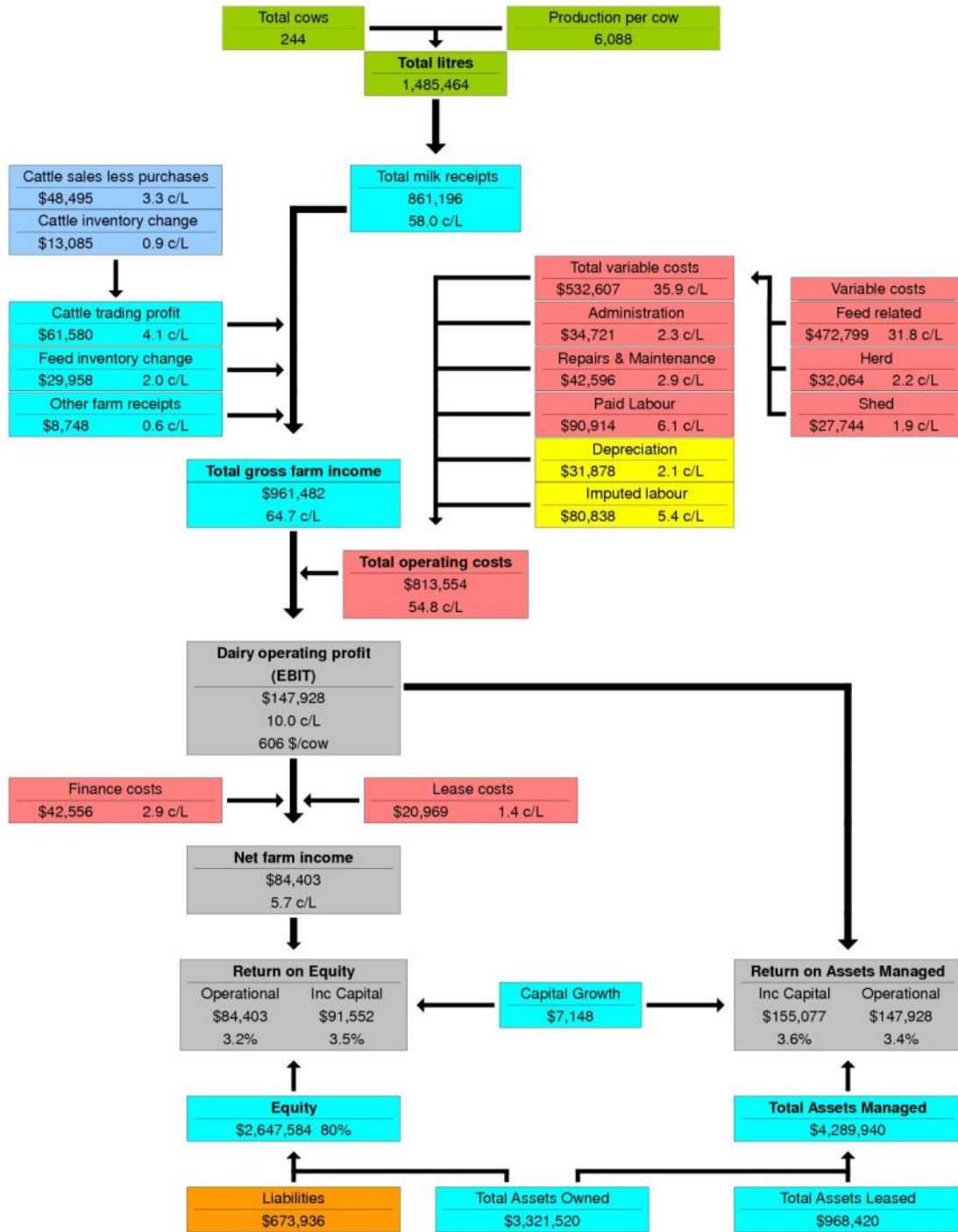
10.3 Map of farm performance – All 58 QDAS farms (2014–15)

Queensland dairy accounting scheme

Group dairy farm profit map

7/2014 - 6/2015

All farms



Farms in report: 58

Asset and liability values are the average of opening and closing values for this year

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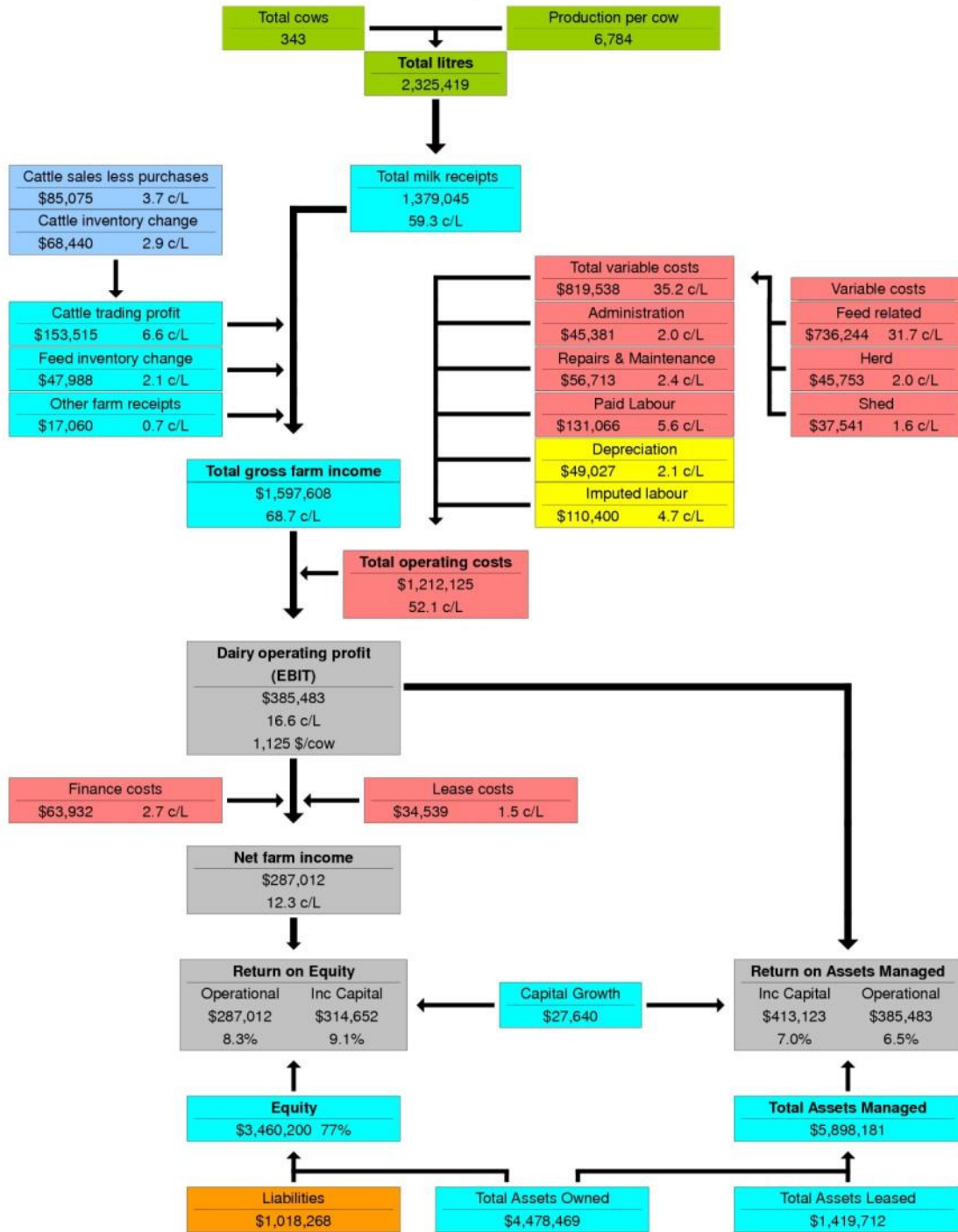
10.4 Map of farm performance – Top 25% of farms (2014–15)

Queensland dairy accounting scheme

Group dairy farm profit map

7/2014 - 6/2015

Top 25%



Farms in report: 15

Asset and liability values are the average of opening and closing values for this year

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10.5 Group cash gross margin – South East Coastal – Grazing (2014–15)

Queensland dairy accounting scheme

Group cashflow

Year: 2015

South East Coastal Grazing

Cash receipts		Cents/litre	\$/cow	\$/kg MS	Total \$ earned	
Milk receipts	1,165,640 litres	61.1	3,274.4	8.05		712,172
	less cartage and levies	-1.5	-81.6	-0.20		-17,754
Milk Receipts - net of cartage and levies		59.6	3,192.7	7.85		694,418
Stock sales - dairy		4.6	244.4	0.60		53,157
Other farm receipts		1.0	54.2	0.13		11,793
Total farm receipts		65.1	3,491.3	8.59		759,368
Cash costs		Cents/litre	\$/cow	\$/kg MS	% Milk receipts	Total \$ spent
	Purchased grain, concentrates, additives	21.7	1,163.0	2.86	36.4	252,945
	Purchased fodder, silage, hay	0.8	43.4	0.11	1.4	9,431
Total purchased feeds		22.5	1,206.3	2.97	37.8	262,376
	Fertiliser	3.2	173.7	0.43	5.4	37,771
	Fuel & oil	1.0	54.1	0.13	1.7	11,773
	Seed and ag chemicals	1.0	51.4	0.13	1.6	11,186
	Irrigation costs	1.0	55.3	0.14	1.7	12,019
	Hay and silage making costs	0.4	18.8	0.05	0.6	4,086
	Agistment costs	0.0	1.5	0.00	0.0	325
	Other feed costs	0.0	0.0	0.00	0.0	0
Feed Related Costs		29.1	1,561.1	3.84	48.9	339,537
	Animal health	1.8	94.1	0.23	2.9	20,468
	Herd improvement	0.8	43.3	0.11	1.4	9,409
Herd costs		2.6	137.4	0.34	4.3	29,877
	Dairy shed costs - electricity	0.8	45.2	0.11	1.4	9,832
	Dairy shed costs - chemicals	0.8	43.4	0.11	1.4	9,442
Shed costs		1.7	88.6	0.22	2.8	19,274
Total Variable Costs		33.3	1,787.1	4.40	56.0	388,688
	Administration	2.6	137.1	0.34	4.3	29,826
	Repairs & maintenance	3.4	180.2	0.44	5.6	39,202
	Paid labour	6.0	324.2	0.80	10.2	70,514
Total overhead costs		12.0	641.6	1.58	20.1	139,543
Farm working expenses		45.3	2,428.6	5.97	76.1	528,230
	Interest	2.0	105.2	0.26	3.3	22,875
	Principal	1.3	70.7	0.17	2.2	15,367
	Land lease costs	2.4	128.9	0.32	4.0	28,034
	Owner's labour	6.1	325.7	0.80	10.2	70,833
Total cash costs		57.1	3,059.0	7.52	95.8	665,339
Net cashflow before tax		8.1	432.3	1.06	13.5	94,029
	Margin over feed related costs	30.4	1,631.6	4.01	51.1	354,881
	Gross Margin - milk only	26.2	1,405.7	3.46	44.0	305,731
	Operating cash surplus	19.8	1,062.7	2.61	33.3	231,138
Labour inputs		Stock		Production		
Unpaid labour	1.4	Cows (milking and dry)	218	Total litres sold		1,165,640
Paid labour	1.1	Total herd	391	Litres/cow		5,359
Total labour units	2.5	Areas		Protein (kg)	3.41%	39,768
Litres/labour unit	460,121	Usable area (ha)	150	Butterfat (kg)	4.18%	48,670
Cows/labour unit	86	Irrigation area (ha)	40	Milk solids/cow		407

Farms in report: 12

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10.6 Group cash gross margin – South East Coastal – PMR (2014–15)

Queensland dairy accounting scheme

Group cashflow

Year: 2015

South East Coastal PMR

Cash receipts		Cents/litre	\$/cow	\$/kg MS	Total \$ earned	
Milk receipts	1,557,486 litres	58.4	3,532.4	8.10		910,315
	less cartage and levies	-1.4	-82.6	-0.19		-21,284
Milk Receipts - net of cartage and levies		57.1	3,449.8	7.91		889,031
Stock sales - dairy		3.4	206.6	0.47		53,230
Other farm receipts		0.9	54.8	0.13		14,110
Total farm receipts		61.4	3,711.1	8.51		956,371
Cash costs		Cents/litre	\$/cow	\$/kg MS	% Milk receipts	Total \$ spent
	Purchased grain, concentrates, additives	18.7	1,128.4	2.59	32.7	290,783
	Purchased fodder, silage, hay	2.4	147.4	0.34	4.3	37,973
Total purchased feeds		21.1	1,275.7	2.92	37.0	328,756
	Fertiliser	2.1	127.5	0.29	3.7	32,847
	Fuel & oil	1.4	83.8	0.19	2.4	21,599
	Seed and ag chemicals	1.3	80.3	0.18	2.3	20,683
	Irrigation costs	1.5	90.8	0.21	2.6	23,400
	Hay and silage making costs	1.9	117.2	0.27	3.4	30,205
	Agistment costs	0.1	8.6	0.02	0.3	2,225
	Other feed costs	0.0	0.4	0.00	0.0	100
Feed Related Costs		29.5	1,784.3	4.09	51.7	459,816
	Animal health	1.6	94.6	0.22	2.7	24,370
	Herd improvement	0.5	30.4	0.07	0.9	7,835
Herd costs		2.1	125.0	0.29	3.6	32,205
	Dairy shed costs - electricity	0.8	48.8	0.11	1.4	12,586
	Dairy shed costs - chemicals	0.9	55.9	0.13	1.6	14,404
Shed costs		1.7	104.7	0.24	3.0	26,989
Total Variable Costs		33.3	2,014.0	4.62	58.4	519,011
	Administration	2.2	131.1	0.30	3.8	33,788
	Repairs & maintenance	3.0	178.9	0.41	5.2	46,091
	Paid labour	8.7	524.9	1.20	15.2	135,273
Total overhead costs		13.8	834.9	1.91	24.2	215,153
Farm working expenses		47.1	2,848.8	6.53	82.6	734,164
	Interest	2.1	125.0	0.29	3.6	32,214
	Principal	2.4	146.6	0.34	4.3	37,790
	Land lease costs	1.9	113.9	0.26	3.3	29,362
	Owner's labour	4.7	283.3	0.65	8.2	73,000
Total cash costs		58.2	3,517.7	8.06	102.0	906,530
Net cashflow before tax		3.2	193.4	0.44	5.6	49,842
Margin over feed related costs		27.6	1,665.5	3.82	48.3	429,215
Gross Margin - milk only		23.8	1,435.8	3.29	41.6	370,020
Operating cash surplus		14.3	862.3	1.98	25.0	222,208
Labour inputs		Stock		Production		
Unpaid labour	1.3	Cows (milking and dry)	258	Total litres sold	1,557,486	
Paid labour	2.3	Total herd	423	Litres/cow	6,044	
Total labour units	3.7	Areas		Protein (kg)	3.30%	51,471
Litres/labour unit	426,365	Usable area (ha)	231	Butterfat (kg)	3.91%	60,951
Cows/labour unit	71	Irrigation area (ha)	77	Milk solids/cow		436

Farms in report: 17

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10.7 Group cash gross margin – Darling Downs – TMR (2014–15)

Queensland dairy accounting scheme

Group cashflow

Year: 2015

Darling Downs TMR

Cash receipts		Cents/litre	\$/cow	\$/kg MS	Total \$ earned	
Milk receipts	2,157,209 litres	58.7	4,210.7	8.09		1,267,005
less cartage and levies		-0.8	-54.2	-0.10		-16,308
Milk Receipts - net of cartage and levies		58.0	4,156.5	7.99		1,250,697
Stock sales - dairy		5.9	422.1	0.81		127,004
Other farm receipts		1.3	91.6	0.18		27,567
Total farm receipts		65.1	4,670.2	8.98		1,405,268
Cash costs		Cents/litre	\$/cow	\$/kg MS	% Milk receipts	Total \$ spent
Purchased grain, concentrates, additives		25.0	1,791.2	3.44	43.1	538,970
Purchased fodder, silage, hay		7.0	499.2	0.96	12.0	150,218
Total purchased feeds		31.9	2,290.4	4.40	55.1	689,188
Fertiliser		1.5	106.8	0.21	2.6	32,140
Fuel & oil		2.0	139.8	0.27	3.4	42,079
Seed and ag chemicals		1.0	69.3	0.13	1.7	20,848
Irrigation costs		0.2	11.7	0.02	0.3	3,507
Hay and silage making costs		2.6	188.1	0.36	4.5	56,611
Agistment costs		0.0	3.3	0.01	0.1	1,004
Other feed costs		0.0	1.6	0.00	0.0	477
Feed Related Costs		39.2	2,811.1	5.40	67.6	845,853
Animal health		1.1	77.7	0.15	1.9	23,380
Herd improvement		0.3	21.5	0.04	0.5	6,477
Herd costs		1.4	99.2	0.19	2.4	29,857
Dairy shed costs - electricity		1.2	87.8	0.17	2.1	26,404
Dairy shed costs - chemicals		1.0	69.3	0.13	1.7	20,867
Shed costs		2.2	157.1	0.30	3.8	47,271
Total Variable Costs		42.8	3,067.4	5.90	73.8	922,981
Administration		1.9	136.1	0.26	3.3	40,961
Repairs & maintenance		2.3	166.1	0.32	4.0	49,989
Paid labour		4.2	303.2	0.58	7.3	91,235
Total overhead costs		8.4	605.5	1.16	14.6	182,185
Farm working expenses		51.2	3,672.9	7.06	88.4	1,105,165
Interest		3.5	253.0	0.49	6.1	76,118
Principal		2.7	194.2	0.37	4.7	58,445
Land lease costs		1.0	71.2	0.14	1.7	21,430
Owner's labour		4.6	329.0	0.63	7.9	99,000
Total cash costs		63.1	4,520.3	8.69	108.8	1,360,158
Net cashflow before tax		2.1	149.9	0.29	3.6	45,111
Margin over feed related costs		18.8	1,345.4	2.59	32.4	404,844
Gross Margin - milk only		15.2	1,089.1	2.09	26.2	327,716
Operating cash surplus		13.9	997.4	1.92	24.0	300,103
Labour inputs		Stock	Production			
Unpaid labour	2.2	Cows (milking and dry)	301	Total litres sold	2,157,209	
Paid labour	1.9	Total herd	536	Litres/cow	7,169	
Total labour units	4.1	Areas		Protein (kg)	3.35%	72,181
Litres/labour unit	521,065	Usable area (ha)	550	Butterfat (kg)	3.91%	84,344
Cows/labour unit	73	Irrigation area (ha)	27	Milk solids/cow		520

Farms in report: 10

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10.8 Group cash gross margin – North Queensland – Grazing (2014–15)

Queensland dairy accounting scheme

Group cashflow

Year: 2015

North Queensland Grazing

Cash receipts		Cents/litre	\$/cow	\$/kg MS	Total \$ earned	
Milk receipts	1,038,605 litres	57.9	3,068.1	8.20		601,631
	less cartage and levies	-0.6	-30.1	-0.08		-5,894
Milk Receipts - net of cartage and levies		57.4	3,038.1	8.12		595,737
Stock sales - dairy		4.4	232.1	0.62		45,512
Other farm receipts		1.2	64.8	0.17		12,711
Total farm receipts		63.0	3,335.0	8.91		653,959
Cash costs		Cents/litre	\$/cow	\$/kg MS	% Milk receipts	Total \$ spent
	Purchased grain, concentrates, additives	22.0	1,166.7	3.12	38.4	228,789
	Purchased fodder, silage, hay	1.0	53.0	0.14	1.7	10,388
Total purchased feeds		23.0	1,219.7	3.26	40.1	239,177
	Fertiliser	3.3	174.6	0.47	5.7	34,230
	Fuel & oil	0.9	49.5	0.13	1.6	9,716
	Seed and ag chemicals	0.2	12.0	0.03	0.4	2,355
	Irrigation costs	0.3	13.7	0.04	0.5	2,688
	Hay and silage making costs	0.0	0.0	0.00	0.0	0
	Agistment costs	1.6	86.5	0.23	2.8	16,958
	Other feed costs	0.4	21.7	0.06	0.7	4,257
Feed Related Costs		29.8	1,577.7	4.21	51.9	309,380
	Animal health	2.1	109.9	0.29	3.6	21,546
	Herd improvement	1.3	70.9	0.19	2.3	13,903
Herd costs		3.4	180.8	0.48	6.0	35,449
	Dairy shed costs - electricity	1.5	77.6	0.21	2.6	15,221
	Dairy shed costs - chemicals	0.9	46.4	0.12	1.5	9,092
Shed costs		2.3	124.0	0.33	4.1	24,313
Total Variable Costs		35.5	1,882.5	5.03	62.0	369,141
	Administration	3.3	173.4	0.46	5.7	34,003
	Repairs & maintenance	3.3	174.4	0.47	5.7	34,193
	Paid labour	5.7	299.8	0.80	9.9	58,790
Total overhead costs		12.2	647.6	1.73	21.3	126,986
Farm working expenses		47.8	2,530.1	6.76	83.3	496,128
	Interest	3.6	192.7	0.51	6.3	37,783
	Principal	2.4	128.4	0.34	4.2	25,169
	Land lease costs	0.9	45.3	0.12	1.5	8,877
	Owner's labour	6.9	365.1	0.98	12.0	71,600
Total cash costs		61.6	3,261.5	8.71	107.4	639,557
Net cashflow before tax		1.4	73.4	0.20	2.4	14,402
	Margin over feed related costs	27.6	1,460.3	3.90	48.1	286,357
	Gross Margin - milk only	21.8	1,155.6	3.09	38.0	226,596
	Operating cash surplus	15.2	804.9	2.15	26.5	157,832
Labour inputs		Stock	Production			
Unpaid labour	1.4	Cows (milking and dry)	196	Total litres sold	1,038,605	
Paid labour	1.0	Total herd	353	Litres/cow	5,297	
Total labour units	2.4	Areas		Protein (kg)	3.16%	
Litres/labour unit	437,726	Usable area (ha)	241	Butterfat (kg)	3.91%	
Cows/labour unit	83	Irrigation area (ha)	7	Milk solids/cow	374	

Farms in report: 11

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10.9 Business traits, key performance indicators and definitions

Key performance indicators (KPI) are used in QDAS to monitor farm performance. Table 21 shows these indicators grouped under the three key business trait headings:

- Solvency
- Profitability
- Efficiency

A further business trait, liquidity, is essential to measuring a business' ability to meet short term debts. QDAS does not report on this business trait as it concentrates its efforts into the longer term business traits.

Why use KPI

Put simply, a KPI is a calculation used for measurement, comparison and evaluation. Their use eliminates many simple dollar value comparisons, which can often be misleading and confusing. They can also be used to identify problems and opportunities.

Table 21. Key performance indicators used in QDAS

Profitability

- Return on asset managed – %
- Return on equity – %
- Operating profit margin – %
- Dairy operating profit –\$/cow

Solvency

- Equity% – %
- Debt to equity ratio

Efficiency - Capital

- Asset turnover ratio
- Total liabilities per cow – \$/cow
- Interest per cow – \$/cow

Efficiency - Production

- Feed related cost – c/L
- Margin over feed related costs – \$/cow
- Total variable cost – c/L
- Gross margin milk – \$/cow

Efficiency – Physical

- Litres of milk from home grown feed
- Production per cow – Litres
- Litres per labour unit

Profitability KPI used in QDAS

Profitability ratios measure the ability of the business manager to generate a satisfactory profit. These ratios are typically a good indicator of management's overall effectiveness in producing milk from the land and stock.

Return on asset managed - operational

This measures the profit generating capacity of the total assets managed by the business. It measures the farm's effectiveness in using the available total assets (owned, financed and leased). This does not include any capital (land and improvements) appreciation.

Calculation

$(\text{Dairy operating profit} / \text{Total assets managed}) * 100$

Return on asset managed – including capital appreciation

Return on assets managed, including capital appreciation, measures the profit-generating capacity of the total assets of the business including the growth in the value of these assets. When large companies such as BHP report a RoA, they include the growth in the value of their assets.

Calculation

$((\text{Dairy operating profit} + \text{change in the value of land and improvements}) / \text{Total assets managed}) * 100$

Return on equity - operational

This KPI measures the return on the owner's investment in the business (not including any appreciation in the value of land or improvements). Interest costs, land lease and rent are deducted from the operating profit to make the calculation. It takes the investor's point of view and can be a good way to encourage further investment in a business; it also allows a comparison to be made with the returns available from external investments.

Calculation

$(\text{Net farm income} / \text{Equity}) * 100$

Return on equity (RoE) - including capital appreciation

This KPI takes the RoE operational, discussed above, and adds in the appreciation in the value of land and improvements.

Calculation

(Net farm income + change in the value of land and improvements) / Equity * 100

Operating profit margin

This calculation highlights the amount of profit retained after all expenses are paid except debt servicing and taxation payments. It is a measure of the effectiveness of operations to generate and retain profits from revenues. Depreciation and a management allowance are included as expenses in this profit KPI.

Calculation

(Dairy operating profit / Total gross farm income) * 100

Dairy operating profit per cow

Similar to the above calculation but is expressed as dollars per cow.

Calculation

Dairy operating profit / Number of cows

Solvency KPI used in QDAS

Solvency ratios indicate how the business is financed, e.g. by owner's equity or by external debt. Lenders of long-term funds and equity investors have an interest in solvency ratios. They can highlight:

- Possible problems for the business in meeting its long-term obligations
- Show how much of the business' capital is provided by lenders versus owners
- The asset liability statement will indicate to the lenders the potential risks in the recovery of their money
- The potential amount of long-term funds that a business can borrow.

This KPI is often referred to as the 'sleep at night' factor – how comfortable do you feel with the current debt level?

Equity%

Lenders see an increased risk associated with borrowing as this percentage figure falls below a predetermined or agreed figure. To assess the risk potential it is important to look at both the debt and the business cash flow.

Calculation

((Assets – Liabilities) / Assets) * 100

Debt to equity ratio

This is another way of expressing equity.

Calculation

Liabilities / (Assets – Liabilities)

Efficiency KPI used in QDAS

When examining a business these KPIs are often the starting point in an analysis; however, it is recommended that the emphasis should be on the first three business traits. Efficiency ratios show how well business resources are being used to achieve other KPI.

Efficiency - Capital

Asset turnover ratio (ATO)

This measures the amount of revenue generated per dollar of assets invested. It is a measure of the manager's effectiveness to generate revenues (capital efficiency). The calculation does not include any costs.

Calculation

Total gross farm income / Assets

Total liabilities per cow

A high value could indicate potential difficulties with both liquidity and solvency.

Calculation

Liabilities / Number of cows

Interest per cow

The total amount of dollars being paid in interest per cow is used to highlight one risk aspect for the business. Generally farms in a rapid development phase will have a higher figure than well established businesses.

Calculation

Total interest payments / Number of cows

Efficiency - Production

Feed related cost per litre

Feed related costs are variable cash costs and includes purchased as well as all home grown feed input costs.

Calculation

Total of all feed related costs / Milk sold

Margin over feed related costs per cow

Only the net milk receipts are used in this calculation, which avoids the fluctuations that occur in annual cattle sales.

Calculation

(Net milk receipts – Feed related costs) / Number of cows

Total variable cost per litre

In QDAS total variable costs are compiled under three headings – feed related, herd and shed costs.

Calculation

(Feed related + shed + herd costs) / Milk sold

Gross margin – milk only per cow

This highlights the milk production efficiency; the resulting dollars are available to pay fixed, financial, living and future development costs.

Calculation

(Net milk receipts – Total variable costs) / Number of cows

Efficiency - Physical

Litres of milk from home grown feed

Home grown feed includes grazed pasture, home produced hay and silage. QDAS uses milk conversion factors to calculate the milk from all feed sources including concentrates.

Calculation

The milk from home grown feed is expressed as litres per cow per day

Production per cow

In QDAS the milking cow numbers used in all calculations includes milkers plus dry cows. This implies each cow has a calf annually.

Calculation

Milk sold / Number of cows

Litres per labour unit

The inference is made that as margins have reduced, technology should be used to gain efficiency. The number of cows milked per labour unit will impact on profitability.

Calculation

Total litres of milk / Number of labour units (paid + unpaid)

General comments

Many of these 15 KPI are representative of KPI that are used in most business reporting. A great number of additional KPI can be calculated from the vast amount of data collated in QDAS if and when required.

Other measures are important when examining an individual plan especially liquidity traits e.g. cash surpluses. Environmental KPI and other sustainability considerations are also important.

The change in net worth is also an important indicator for every farm owner, and should be calculated regularly