

# final report

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## **Northern beef situation analysis 2009**

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## **Abstract**

This report was commissioned by MLA to look at the current state of the north Australian beef industry in terms of productivity and profitability. The research shows that profit maximisation amongst the enterprises studied, is a function of both cost minimisation and optimisation of production levels.

Enterprises which maximised profit, did not rely on price received, had slightly higher production per large stock unit (LSU), had lower stocking rates when adjusted for rainfall, significantly higher gross margins and significantly lower overheads in the business. The major issues facing the industry include inadequate scale in the more closely settled areas, significant cost escalations in both overheads and direct costs, doubling of debt per LSU over the last decade while return on assets (ROA) has declined to very low levels of 0.3% to 2.0% on average. Approximately half of the producers studied have spent more than they earned for six of the last seven years, indicating the northern beef industry is generally in a very unprofitable and unsustainable state.

## Executive summary

In funding this analysis, MLA has sought an updated situation analysis of productivity and profitability in northern beef production systems. This information will form part of a broader strategy to establish and monitor baseline data about the economic, environmental and social performance of the northern beef industry.

The analysis of data was based on four landtypes/regions in Queensland (northern native pastures and desert uplands; Mitchell grass and broken downs/gidgee; Brigalow, Aristida and Bothriochloa; and Ironbark, Eucalyptus and Speargrass), two for the Northern Territory (Katherine and central Australia) and one for Western Australia (Pilbara). The regions are here on referred to as northern, Mitchell, Brigalow, Ironbark, Katherine, central Australia and Pilbara. The terms of reference for this project required certain key performance indicators to be reported. However, these do not necessarily describe the main business risks and issues to be addressed in each region. To report on these, other qualitative data and experience working in the regions is necessary. Taking this into account, the main business risks and issues are described.

### Overview

In 2009, the northern beef industry is in its worst state since the beef slump of the 1970's with average return on assets (ROA) of 0.3% to 2.0%. Average beef producers tend to be spending more than they have earned in 6 of the last 7 years, indicating the northern beef industry is generally in a very unprofitable and unsustainable state. There are many reasons for this, chief among which are:

### External Impacts

- Land values have increased significantly (grazing property index has increased at least 250% from 1999 to 2008) which has both induced and encouraged higher debt.
- Rainfall has been below average across the Queensland study group for seven of the last 10 years and cost of production has consequently risen.
- Beef prices generally increased until 2004, then levelled and have declined in the study group in the last two years. However price received has not been a consistent driver of the difference between the top 20% and average producers.
- Debt levels have more than doubled on a per large stock unit (LSU<sup>1</sup>) basis over the decade.
- Legislation around vegetation management has impacted both development and maintenance options for producers in affected regions.

### Internal Impacts

- Scale has shown to be a major contributor towards profitability and the effects are amplifying. The Queensland data indicates that at the beginning of the decade, 1,123 LSU were needed to maintain overheads at \$80/LSU. At the end of the decade, the corresponding number was 2,405 LSU.
- Overheads per LSU have risen by 54% over the decade and direct costs per LSU have risen by 150% over the same period (which is a combination of both cost and use).
- Expense ratios (total expenses including interest/gross product), have been over 100% in 6 of the last 7 years for average businesses, meaning these businesses have spent more than they earned.
- Finance ratios (finance costs/gross product) have reached 20% for average businesses, which means 20% of all income is paid out in interest and finance costs. This is an economically dangerous position to be in when average ROA is 0.3 – 2.0%.
- The extremely poor performance of the extensive breeder herd is an alarming contributor to poor business performance.

<sup>1</sup> Large Stock Unit: Equivalent to one 400kg steer with zero live weight gain.

- However the top 20% (based on ROA), while not reaching the heights of a decade ago, are faring well and matching current bank deposit rates. Some of the features of the leaders include:
- They were slightly more productive on a per animal basis (6.8% more kg produced per LSU).
- Production (kg/ha) was approximately the same indicating the difference in profit originated more from the combination of number of animals/scale of operation, individual animal productivity, skills of the manager and associated running costs.
- They generally had slightly lower stocking rates (16.8 SDH<sup>2</sup>/100mm vs. 18.3 SDH/100mm).
- They had significantly lower overheads (22% less was spent on overheads as a percentage of gross product).
- They focus more on overall profit than productivity alone. It is not that productivity is not an important element in profitability, but the data indicate that the quality of strategic and management decisions around overheads and scale are paramount in determining profitability.
- They utilised plant and equipment twice as effectively as the average producer (28.7% plant income ratio for top 20% [average value of plant and equipment/production gross product] vs 56.5% for average).
- Across all years and regions, they did not receive higher prices. However they did receive slightly higher prices in 3 of the 7 regions in the last 3 years.
- They were larger in both land (+19,760ha) and livestock (+2,300LSU) scale.

#### Key recommendations for the northern beef industry

- Analyse the business to understand where the issues are in terms of turnover, overheads and gross margin. Identify the primary driver that will most impact on profit and see what can be changed.
- After analysing the business, develop strategies to overcome weaknesses specific to your business before it is too late.
- Understand the implications of attempting to lift stocking rate above the carrying capacity. Focus firstly on what can be done to sustainably lift carrying capacity.
- In the extensive breeder regions, renewed focus on heifer management, breeder performance and bull selection based on objective measurement.
- Continue develop skills and capacity of business managers.
- Ensure bull selection is appropriate and accounts for the pressure likely to be incurred within a given breeding system.

#### Key recommendations for research, development and extension

- Balance the focus in institutions and industry from production to profit.
- Influence the focus and output of the stud industry to dramatically lifting the use of objective measurement and use of estimated breeding values (EBVs)
- Identify issues (e.g. disease and nutritional issues) restricting performance in the extensive breeder herds. This would include identifying the relative influence of genetics (mature weight of cows, lactational anoestrus etc), nutrition (are there any effects from unrecognised deficiencies) and timing of activities (controlled mating, mob segregation etc vs continuous mating and cattle harvesting). This is needed to organise effective and targeted extension programmes. A modelling approach may be the first step
- Collect data on the effect of stocking rate at a commercial scale on reproduction rates.

<sup>2</sup> Stock days per hectare per 100mm precipitation received: standardised measurement of stocking rate and carrying capacity; determines the number of LSU that can/have been run on one hectare for one day for each 100mm precipitation received/expected.

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# 1 Northern Australia beef industry background

## 1.1 General background

The northern beef industry consists of just under half the overall national beef herd in Australia. Beef cattle numbers across Australia fell slightly to 24.8 million head at 30 June 2008 (ABS 2009). Decreases in beef cattle numbers in most states were offset by overall increases reported in the more northerly regions, Queensland and the Northern Territory. As at June 2007, total cattle numbers across Australia (including meat and milk) was 28.0 million (MLA 2008). Queensland contributed 11.7 million head towards this total and Northern Territory 1.9 million (MLA 2008) making northern Australia a major provider of Australian beef products.

Meat and Livestock Australia (MLA) and partners have conducted a number of situation analyses to inform and shape its research, development and extension (RD&E) investments over the period 2000 to present. This northern beef situation analysis will assist in formulating strategies for future investment into the northern beef region.

In funding this analysis, MLA has sought an updated situation analysis of productivity and profitability in northern beef production systems. This information will form part of a broader strategy to establish and monitor baseline data about the economic, environmental and social performance of the northern beef industry.

## 1.2 Project objectives

The two project objectives were

1. Review northern beef production systems profitability and sensitivity to production inputs and market variability, and
2. Identify the key influences of profit and areas of focus for northern beef producers to increase the resilience and productivity of their businesses.

# 2 Methodology – financial benchmarking

## 2.1 Measures of profitability

Profitability can be measured in one of three ways. These are return on assets (ROA), change in nett worth and nett economic profit (NEP).

### 2.1.1 Return on assets

ROA is calculated as earnings before interest and tax (EBIT) as a percentage of the total closing asset value. EBIT is the profit generated from the business after all property cash costs and movements in inventory are covered, and a standardised allowance for depreciation and unpaid labour is included. Finance, taxation and property development expenses are not included; profit must cover these. ROA is an indicator of return on capital and is therefore easily comparable to other businesses. This indicator is adopted in this report because of its universal acceptance.

### 2.1.2 Change in nett worth

The truest indicator of profit is calculated by the change in nett worth from one balance sheet to the next; however this indicator is best applied at an individual business scale and has not been adopted in this report.

### 2.1.3 Nett economic profit

NEP is the difference between the profit earned from managing the business (EBIT) and the profit that could be earned by taking a passive approach to managing the assets by:

- The sale of the production business (livestock and plant) and investing the money at 10% (a nominal figure used for benchmarking based on average potential returns from other investment opportunities), and
- Leasing out or agisting the land, which would attract between 3% and 5% yield, depending on the country and location.

## 2.2 Primary influences on profitability

All businesses are based on three fundamental profit drivers: turnover, overheads and gross margin.

### 2.2.1 Increasing turnover

The asset turnover (ATO) ratio is the ratio of gross product to asset value. For example, if a business generates \$10 worth of gross product (turnover) per \$100 of assets, it will have an ATO ratio of 10%. Therefore the higher it is the better. The strategies to create a higher ATO include:

- Adequate economy of scale.
- Optimising enterprise mix for maximum return per LSU or hectare.
- Increasing the carrying capacity through property development.
- Increased pasture utilisation in a management system that emphasises ecosystem function and sustainability.
- Increasing gross margin.

### 2.2.2 Increasing gross margin

The gross margin (GM) ratio is the ratio of total gross margin to total gross product and is an indication of the level of direct costs and their efficiency of production. Therefore the higher it is the better. The strategies to create a relatively high GM ratio include:

- Tightening calving periods to defined periods of the year which results in more even lines of saleable stock being marketed and lower direct costs per unit of production.
- Better nutrition of breeders and sale stock due to better alignment of peak nutritional requirements to feed quality available due to time of year.
- Pregnancy diagnosis to segregate cows into distinct and advantageous groupings (based on timing of conception/calving)
- Disease control to mitigate reproductive and/or production losses.
- Identification and sale of unproductive animals.
- Focus on heifer nutrition and thus “whole of life” productivity of the females.
- Sound genetic selection.
- Higher growth rates.
- Constantly matching stocking rate to carrying capacity.

### 2.2.3 Decreasing overheads

The overhead (OH) ratio is overhead costs as a percentage of total gross product. Therefore the lower it is the better. The strategies to create a relatively low overhead ratio include:

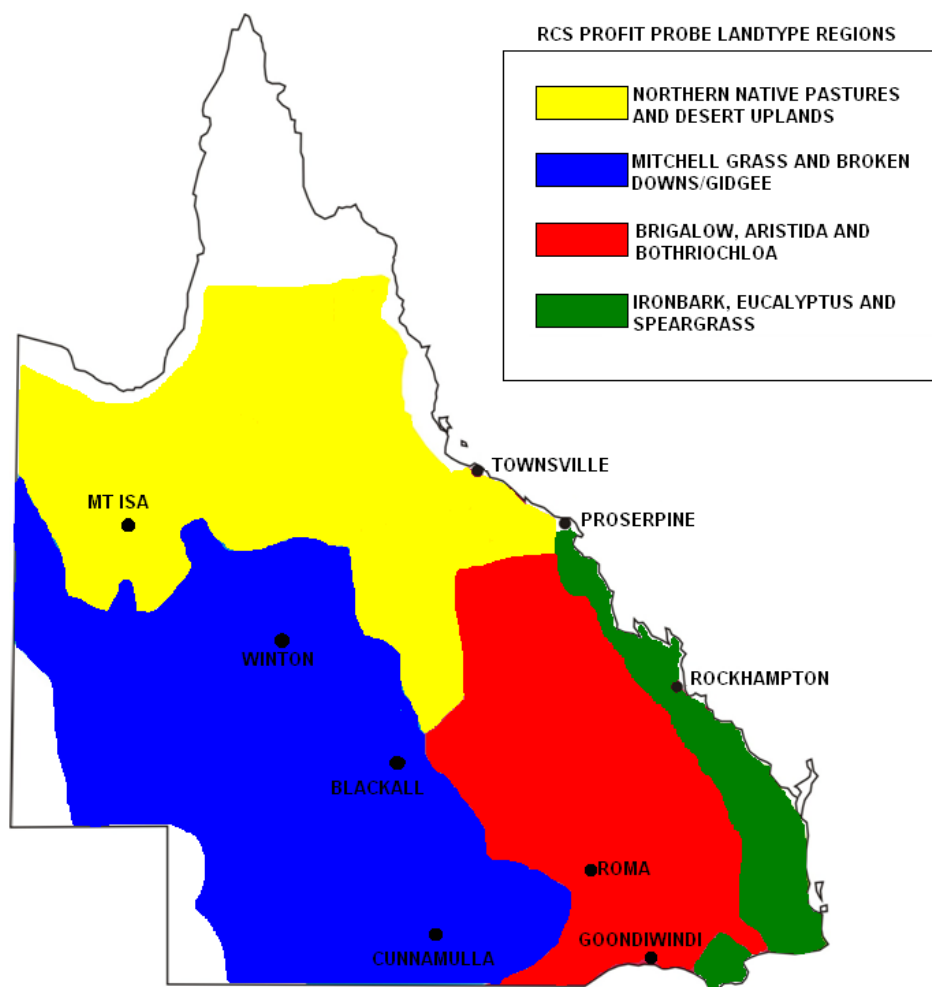
- Effective and efficient management decisions for best use of available resources.
- Technology such as telemetry can also be used on waters to reduce labour and travelling on large or separated properties.
- Economies of scale to lower the overheads per stock unit.
- Using contractors rather than property owned machinery and internal staff.
- Increased livestock carrying capacity as a result of increased pasture utilisation or development, thus reducing overheads per head.

## 2.3 Queensland - RCS profit probe™

RCS Profit Probe™ allocates businesses analysed into four land type regions within the Queensland data set (refer to Figure 1). These allocations are made to provide for better benchmarking sets after allowing for differences in scale and productivity. The land types relate

to combinations of the pasture types in Tothill and Gillies (1992) but that does not mean that each property in the set consists of the vegetation described.

The regional descriptions have been shortened to Northern, Mitchell, Brigalow and Ironbark.



**Figure 1.** Map of Queensland data regions

Profit Probe™ is a proprietary benchmarking system developed by Resource Consulting Services (RCS) in 1994. It is now the major industry business analysis and benchmarking system in northern Australia and has extensive historical data from southern Australia. It is used exclusively by the Queensland Department of Employment, Economic Development and Innovation WA Department of Agriculture and Food to benchmark the beef industry and has previously been used in Australian Government projects to benchmark the sugar industry, banana industry, irrigated horticulture industry and mango industry.

A sample of the main pages from Profit Probe™ is provided in Appendix 1. It has the following features and reports:

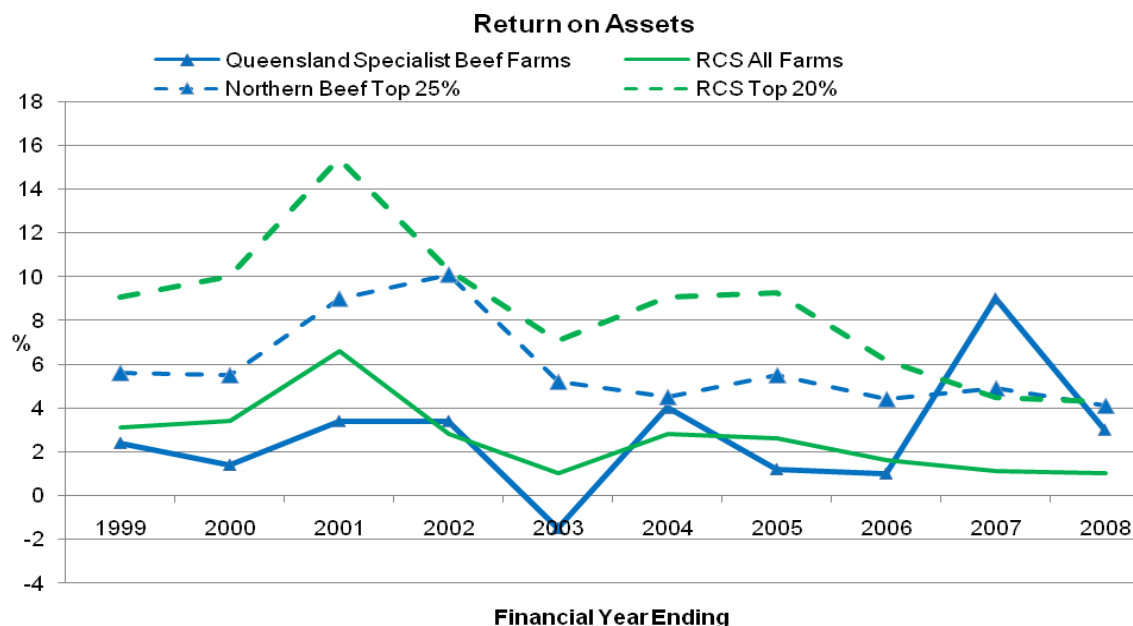
- Land business versus the production business at a strategic level.
- Key performance indicators (KPI) in production, profitability, pecuniary (finance), people and property sustainability.
- Comparison of KPIs to benchmarks, average and top 20% and running individual business performance over five years.
- A detailed analysis of overheads, turnover and gross margins.
- The management accounting principles used with market values for all assets including the cattle, land and infrastructure, and plant and equipment. Depreciation rates were based on useful economic life rather than an arbitrary rate.
- Drawings that were excluded from the analysis and replaced with an unpaid labour value (comparable to market wages) based on the number of weeks worked in the business.

Given the size of the Profit Probe™ database, an assumption about which mixed enterprise businesses to include was made. Only businesses that received greater than 75% of their gross product from beef was included in the analysis (determined on a year by year basis).

Reference to the top 20% of businesses throughout this report refers to the top 20% of businesses based on their return on assets. Therefore the results shown for top 20% for the finance ratio in Figure 7 are the finance ratio results for the businesses with the highest ROA, not finance ratio.

To determine if the businesses benchmarked via the RCS Profit Probe™ program are indicative of the northern Australian beef industry, a comparison of the ROA results for the average of all businesses and the top performing businesses has been made between ABARE and RCS in Figure 2. The overall trends in all data are similar, giving confidence that the RCS database is indicative of the industry generally. However the RCS tTop 20% is higher than the ABARE data. The ABARE top data is on the top 25% which may account for some of the difference. With the exception of some aberrations in the ABARE data in the most recent years (e.g. farm ROA for 2007 of 9%); the sets of data confirm the effects of land value increases on ROA.

Businesses come and go in the RCS database, so the data do not represent the same businesses in all years. This may be a reason why the data remains representative of the industry.



**Figure 2.** Comparison of Return on Assets between ABARE data and RCS Profit Probe™ Queensland data (Source ABARE 2009 and Profit Probe™ 2009)

### 2.3.1 Limitations of the profit probe™ data

Businesses benchmarked in Profit Probe™ firstly submit their raw data to RCS, who then enter the raw data and analyse the information. Discrepancies, errors or omissions of data are picked up either during the input or analysis phase where they are evident. The accuracy of the raw data provided is beyond the control of RCS and so may not completely reflect the actual situation. Businesses analysed that were not considered to truly reflect a beef enterprise or a true business result are not included in any stage of the analysis.

The other limitation to the regional land type data arises from the size of the data set analysed. Overall the average data set for Queensland beef industry is 83 individual businesses per annum, with a range from 57 businesses to 104 in any one year (after excluding businesses not meeting gross product criteria above). Therefore the validity of the entire set is quite robust. Some care needs to be taken when viewing the regional land type data, particularly the Mitchell grass data set as the average number of businesses analysed averages only nine and varies from four to 15 businesses. The number of businesses in the top 20% is therefore as low as one business in two of the years analysed. For this reason, emphasis is placed on the average data for the most part with variations between the average and top 20% made where sufficient data allows. A summary of the number of businesses analysed is shown in Appendix 2.

The largest of the data sets is the Brigalow region with an average of 42 businesses each year.

## 2.4 Northern Territory and Western Australia - Holmes and Company

The key production and financial aspects of beef production in central Australia, the Katherine region of the Northern Territory, and the Pilbara pastoral region in Western Australia come from Holmes and Company benchmarking data.

### 2.4.1 Background – Holmes and Company data

Data have been collected from existing businesses in all three regions for varying periods. In the case of central Australia, the specific location is the southern Alice Springs pastoral region where 10 years of data are available to 2008/09. Approximately 25,000 breeding cows per annum are represented in the data. For the Katherine region, 3 years of data are available to 2008/09, representing approximately 13,000 breeding cows per annum. In the Pilbara, 6 years of data are available to 2007/08, again representing approximately 13,000 breeding cows per annum. A summary of the number of businesses analysed is shown in Appendix 2.

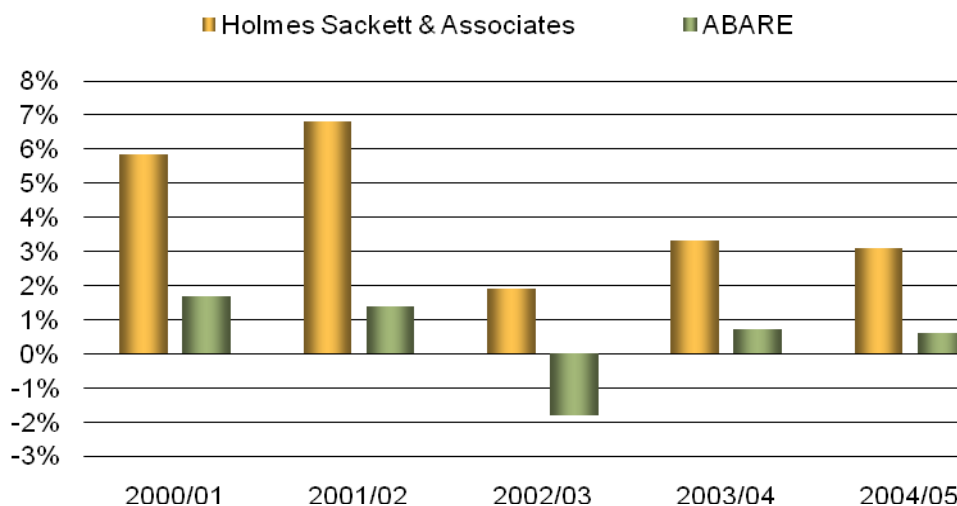


Figure 3. Map of NT & WA data regions

All data were collected electronically using a purpose-built spreadsheet-based input form with error checking mechanisms built in, particularly with respect to livestock inventory. Management accounting principles were used with market values for all assets including the cattle, land and infrastructure, and plant and equipment. Depreciation rates were based on useful economic life rather than an arbitrary rate. The input sheets were linked to a spreadsheet based engine for the purpose of analysis.

It is important to understand that the results obtained from these three regions are coming from a biased cohort of businesses. By definition, producers who are motivated to benchmark the performance of their herds and businesses are more likely to be profit driven and hence more likely to achieve a better outcome. Historically, Holmes Sackett drew benchmarking participants from the broad population of producers, offering nothing more than the benchmarking outcome in the form of a report. It was up to the individual producer to seek further advice if needed. Some producers formed local production groups using the benchmarking data as a tool for identification of issues.

We have attempted to quantify the extent of the bias in the past by comparing these data to data gathered by ABARE (truly random) for the five fiscal years 2001- 2005. At that time, the average performance in our data set was approximately equal to the top 20% performance for ABARE and our top 20% was approximately equal to the top 5% for ABARE. This comparison was based on a single whole business benchmark, return on assets under management, these are shown in Figure 4:



**Figure 4.** Northern beef industry performance – based on return under assets managed (%). The graph compares Holmes Sackett data to ABARE data

This is unlikely to have changed significantly and is a critical factor in the interpretation. The top 20% performance outlined above is likely to represent only five in 100 beef businesses in northern Australia. Another important point is that these businesses were probably already more profitable than a random sample before they began benchmarking. The benchmarking and the learning process that flows from it may or may not have improved the competitive advantage of this cohort over time. It is not possible to claim otherwise as there is no control group. ABARE data are not regionally specific enough to provide a de facto control group.

As a general principle, the performance of the business and the herd is measured to the earnings before interest and tax (EBIT) level because the performance of the business is independent of its financing. Some aspects of equity and debt will be discussed.

The central Australian and Pilbara data are generally representative of the arid rangelands whilst the Katherine data are representative of the higher rainfall tropical savannas. In the arid rangelands, it is almost impossible to conduct any form of trend analysis unless data are

available for at least 30 years. The main reason for this is that failed seasons and drought have a prolonged effect on the business during the herd build-up and recovery phase. In the case of central Australia, this can be for up to 15 years depending on the drought management strategy employed. In the case of the Pilbara, a failed wet season, which happens statistically every five years, can have a negative impact on the business for up to 7 years post the event. These impacts make long-term trend analysis extremely difficult, if not impossible unless a steady state modelling exercise is conducted. The results of this will be as good as the assumptions used and are unlikely to reflect real life. In the case of Katherine, too few years are available for trend analysis. For these reasons, trend analysis will not be available for these regions.

Stocking rate is not a profit driver in central Australia or the Pilbara if limits are imposed for the sake of natural resource protection. The emphasis in these regions has to be placed on the breeding cow and it is her individual productivity that will drive business performance. The unit of measurement is therefore the breeding cow rather than the square kilometre. Although the rainfall of Katherine is higher, and there is some impact of stocking rate on profit, overall, stocking rate is not a profit driver. The main reason for this is the need to maintain minimal condition scores of breeders for reproductive efficiency and once a threshold stocking rate has been exceeded, breeder performance begins to decline quite rapidly. In the Katherine region, the emphasis should again be on the individual breeder and a stocking rate determined to optimise this. This is a station dependent determination and a regional figure is relatively meaningless, especially if strong rainfall gradients across the region exist. In addition, the stocking rate issue is confounded by the stage of development of the station. Although the effective area is stated, it may not be fully utilised and as additional waters and/or fencing are added, the utilisation and stocking rate both increase. If done prudently, this may not result in any natural resource degradation or deterioration in individual breeder performance. For all these reasons, the preferred unit of measurement is EBIT/LSU, with all the secondary and supportive benchmarks for that unit of measurement. At the herd level, these would include operating margin per kilogram of beef produced, cost of production per kilogram of beef produced, kilograms of beef produced per LSU and labour efficiency.

Despite every effort being made to derive an indicator of annual herd reproduction rate, it is still beyond reach at this stage. In all three regions, on average, mating is uncontrolled, even in heifers. There is only one business in all three regions practising controlled mating and that is only with first parity heifers. Controlled mating is a mandatory first step in the process of being able to accurately measure net reproductive rate. Branding rate is inadequate as an indicator because of the inclusion of cleanskins in the numbers and uncertainty about the number of breeders contributing to the result. The percentage of female sales relative to total sales has been advocated as a de facto indicator but it can be significantly affected by the position of the herd at the time. For example, in drought recovery or when new waters are being opened, this percentage will fall because of female retention for herd build-up even though the net reproductive rate may be quite good. The net reproductive rate of the herd and the breeder death rate are derived figures and are at best, approximations. Having said that, they are likely to be within 3-6% of reality on both the high and the low side to give a total spread of 6-12% depending on the accuracy of the individual business records.

Breeder death rates are always an estimate based on the residual between opening and closing inventory, sales, purchases and natural increase. It takes about five years of accurate record keeping and analysis to have any confidence in these figures. For this reason, the figures supplied by participants have been validated using modelling. The model is set to emulate the benchmarked results of the herd and the net reproductive rate and breeder death rate is checked. In all cases, the gathered data is used for reporting unless modelling shows a major discrepancy. Mostly this can be resolved by participants re-checking their numbers.



Cost of production is one of the most important key performance indicators because it allows the most important herd level key performance indicator, i.e. operating margin to be calculated. The methodology employed to calculate cost of production is as follows:

- The total number of kilograms of beef sold for the year is summed. If cattle are sold per head and not weighed, an average weight estimate is used.
- The change in herd inventory on a kilogram basis for the year is summed. It will either be positive or negative and is derived from standard weight assumptions for each class of animal. This figure is then added to the summed kilograms sold to derive total production.
- All direct expenses on the herd are summed.
- If the business is single enterprise, all overhead expenses are summed and added to the summed direct expenses to derive total expenses. If there is more than one enterprise, overhead expenses are allocated to each enterprise on the basis of labour (e.g. fuel and lubricants, motor vehicle expenses), proportion of gross revenue (e.g. administration) or area (e.g. rates and rents).
- Total expenses are divided by total kilograms to derive cost of production.
- Interest and other financing expenses are excluded as is all capital expenditure. All leased vehicles and plant and equipment are capitalised at market value and depreciated and the depreciation figure is part of the overhead expenses.

Detailed historical price data are not provided by region for two reasons. Firstly, they are not available specifically for the Pilbara, Katherine and southern Alice Springs regions and secondly, the more important measure at the business level is the actual price received insofar as it allows the operating margin to be derived.

Every attempt has been made in this report to avoid “analysis paralysis”. At the end of the day, there are only a few key whole business and herd level key performance indicators that determine economic sustainability. It is easy to complicate the whole thing; a human tendency. The focus in this report has been on the key issues. At the whole business level, the global benchmark for all businesses in all industries, including agriculture, is that the total business return must exceed the after tax cost of debt. The average result for all three regions analysed in this section of the report is cause for concern. The top 20% result is more optimistic. The critical questions that flow from this are:

- Will the Northern beef industry have enough critical mass going forward if only top 20% producers have what it takes?
- What needs to be done to turn average producers into Top 20% producers, if this is possible?

One of the key issues common to all 3 regions is productivity per breeder. The only way that this can be assessed in practical terms is by modelling to measure the net result after costs have been accounted for. It is impractical to test this in the paddock. The 3 key drivers of productivity per breeder are:

- Net reproductive rate
- Breeder death rate
- Turn-off weight of progeny

Each region can be set up in a model with each variable tested independently and on an aggregated basis. The base herd in each region can be set up to emulate historic performance so that driver changes going forward can be quantified. The modelled productivity per breeder results will be presented in this report.

## 3 Results and discussion

### 3.1 External influences on profitability

#### 3.1.1 Markets

The following graph (Figure 5) indicates the trend in the Queensland cattle market index (QCMI). It clearly shows the low of 1996 and the green lines show a general decline in the highs since 2001. For a majority of the period the Queensland data was analysed, the Queensland cattle market index has varied around the 180 mark and has gradually declined.



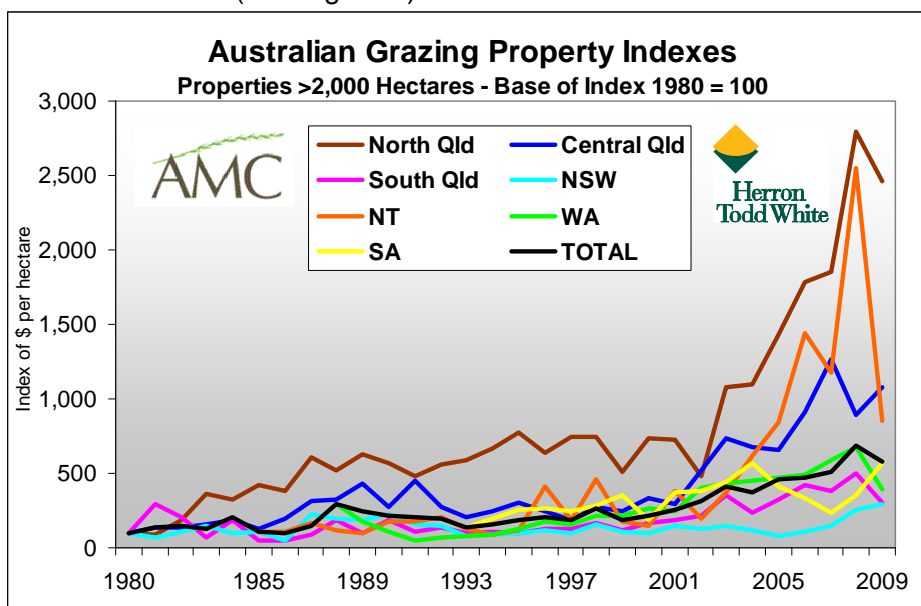
**Figure 5.** Chart of the weekly QCMI.

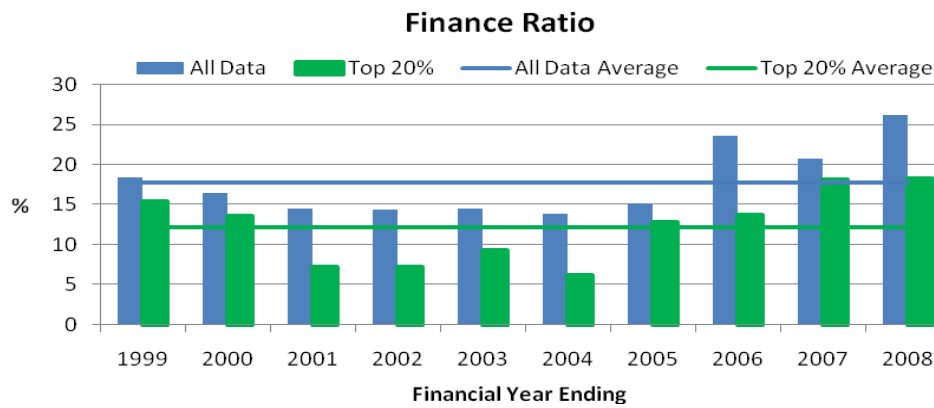
### 3.1.2 Land values

Increases in land values have had a significant impact on the northern beef industry. The following graph is the regional Australian grazing property indexes from 1980 to 2009. It shows over a 450% increase in values for north Queensland and the Northern Territory from 1999 to 2008. The overall Australian grazing property index had an increase of 250% over the same period. Historically, land prices have trended akin to the movement in the cattle market; however the land prices from 2005 continued to increase whilst the cattle market began to decline as seen in Figure 5. The 2009 data below does show that a general correction in land values has begun.

Property prices have impacted in three key ways:

- Increased debt - overall debt has increased from a finance ratio (interest and finance costs as a percent of gross product) of 14 to 15% in the early years of the decade, to 26% in 2008 (see Figure 7 below).
- Increased asset value.
- Lower return on assets (see Figure 9).

**Figure 6.** Regional Australian Grazing Property Index (Herron Todd White 2009)

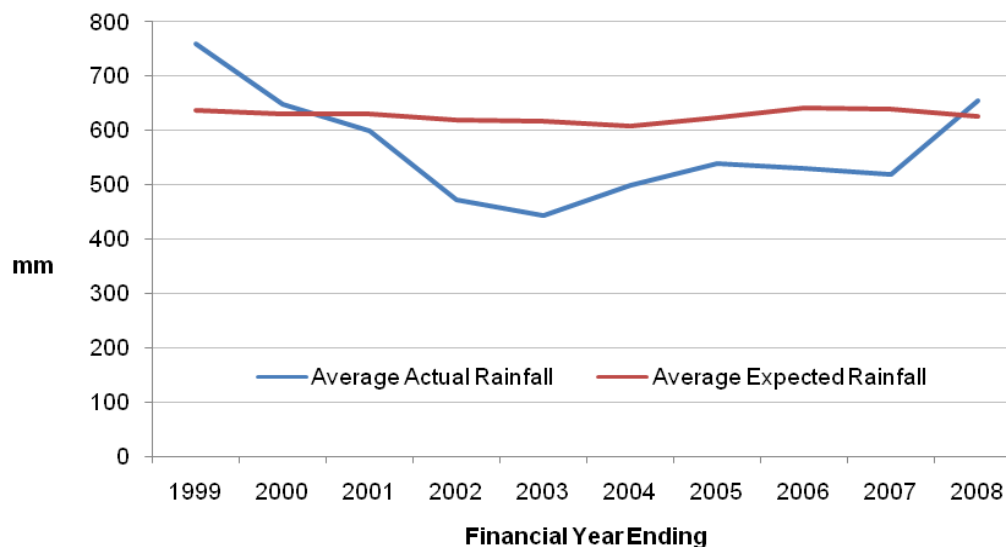


**Figure 7.** Finance Ratio of the Queensland data (Profit Probe™ 2009). Finance ratio=(interest and equipment leases) / gross product

### 3.1.3 Seasonal conditions

The ten year period ending June 2008 saw a considerable variation in seasonal conditions (Figure 8); 1999 and 2000 were excellent seasons across most regions of northern Australia. During the middle of the analysis period, particularly 2003, rainfall received dropped to as low as 72% of expected average across all businesses analysed. The worst hit areas over the ten years have been central, western and south-west Queensland (Appendix 3).

#### Rainfall for Years Analysed



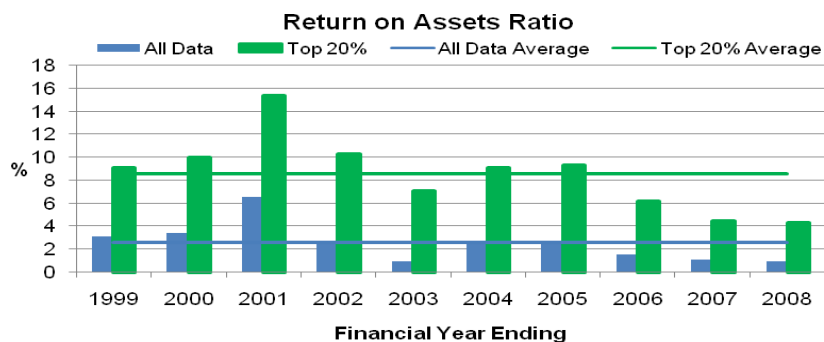
**Figure 8.** Average rainfall received and long term average for Queensland data (Profit Probe™ 2009)

An independent statistical analysis of the Queensland Profit Probe™ data was undertaken by Gregg and Rolfe (in press). This study indicated that rainfall and differences of actual rainfall from the average were not significant contributors to production efficiency. In other words, the more profitable businesses were able to remain profitable in drier years even though total production levels decreased with reduced carrying capacity.

However the analysis did show that lagged rainfall (the follow on effects of high or low rainfall) and rainfall differences were significant predictors of minimum cost of production frontier. This makes sense from a biological view as the effects of a drought in one season will in effect turnoff in subsequent seasons.

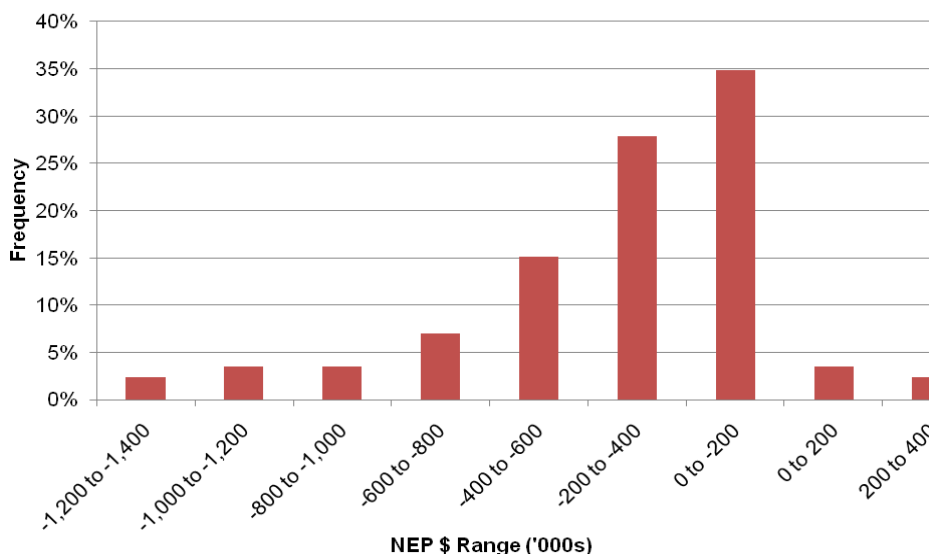
### 3.2 Queensland beef industry key performance indicators

Return on assets (ROA) of the Qld database is shown in Figure 9. The declining trend in ROA is due to three factors. Firstly an increase in land prices during the decade has significantly increased the value of the asset. Secondly, rising direct and overhead costs have increased the cost of production and lowered margins. Thirdly, the peak in 2001 was due to a unique set of circumstances where good seasons, a low dollar, low interest rates and high prices combined in a once in a lifetime set of conditions.



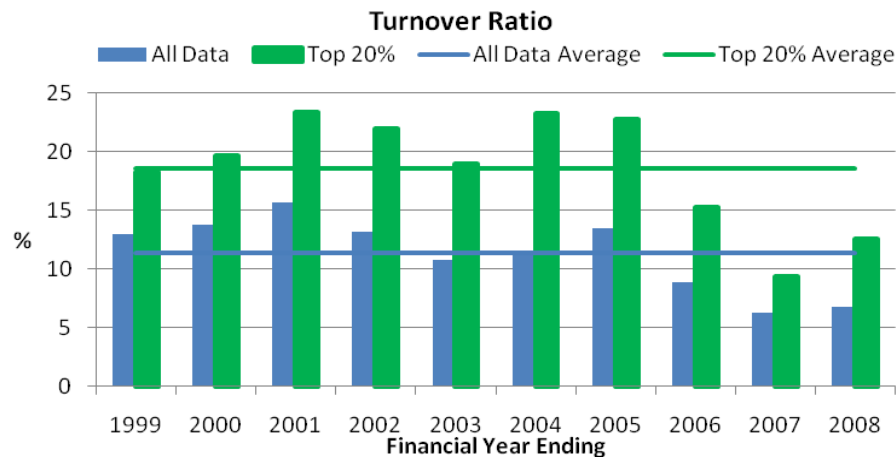
**Figure 9.** Return on assets (ROA) of the Queensland data (Profit Probe™ 2009).  
ROA=EBIT/closing asset value\*100

Looking at nett economic profit (NEP), Figure 10 indicates the decision to invest their capital in agricultural businesses meant that 62% had an NEP between \$0 and negative \$400,000 while only 6% had a positive NEP in 2007/08. A NEP of zero indicates capital use is efficient.



**Figure 10.** Nett economic profit frequency for all northern Australia beef businesses in 2007/08, n=86 (Profit Probe™ 2009)

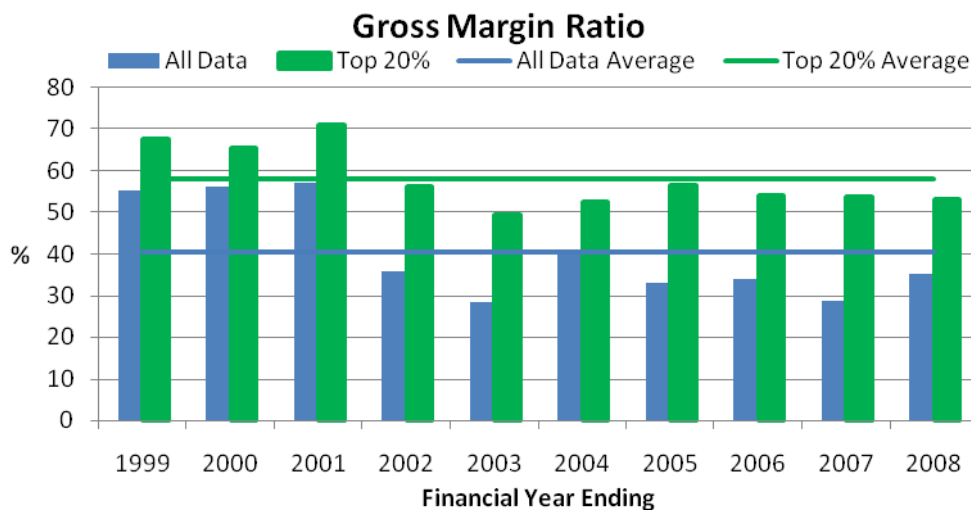
Figure 11 shows that across the industry the asset (ATO) turnover ratio has fallen from 10-15% to 6% in recent years. This indicates capital is being employed very inefficiently in this analysis group but is obviously better employed in the top 20% by an average of 7%. The steep drop in turnover ratio in the latter part of the decade is the effect of rising land prices.



**Figure 11.** Asset turnover ratio of the Queensland data (Profit Probe™ 2009). Turnover ratio = gross product/asset value\*100

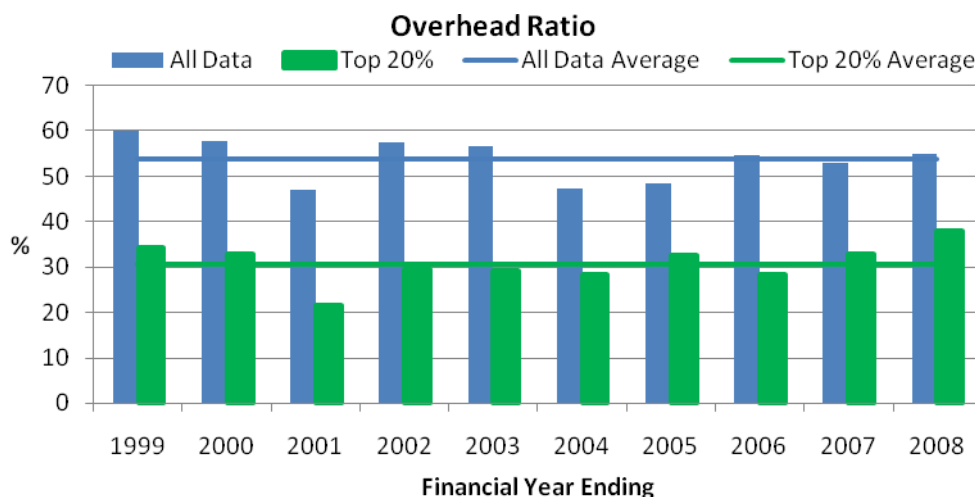
The gross margin ratio (see Figure 12) has also fallen in both the top 20% and average by a similar amount to ATO. This indicates direct costs have risen and /or direct cost items are used less efficiently (i.e. money is being spent on direct costs with poor returns for additional money spent). These include freight, selling charges and supplements. The dip in 2003 is due to drought and lower productivity. However there is a very significant 18 percentage point difference between the average and the top 20%. This could be due to:

- Inefficient use of direct costs in poorer performing herds.
- Lower productivity in poorer performing herds.
- Less efficient biological systems (e.g. breeding program)
- Lower price received.



**Figure 12.** Gross margin ratio of the Queensland data (Profit Probe™ 2009). Gross margin ratio = total gross margin/total gross product\*100

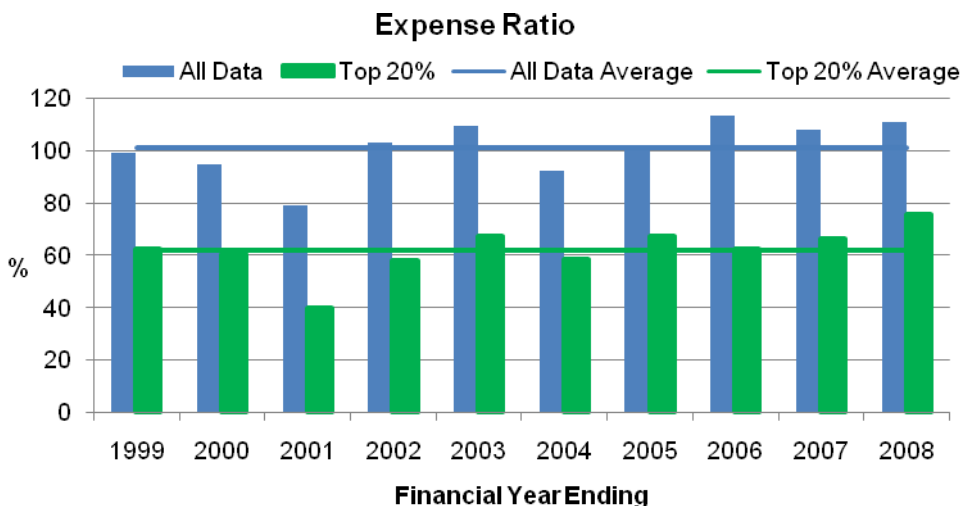
The most significant feature of the overhead ratios is the 22 percentage points difference between the top 20% and the average as seen in Figure 13. Put simply, this means the average producer spends \$22 more on overheads than the top 20%, for each \$100 of gross product generated.



**Figure 13.** Overhead ratio of the Queensland data (Profit Probe™ 2009). Overhead ratio=overhead costs/total gross product\*100

The expense ratio (Figure 14) is the total cash expenses (including finance) over the gross product. A low expense ratio is therefore better. The alarming trend in the data is that **the average Queensland beef producer has spent more than they have earned in six of the last seven years**. The contributing factors, relative to the top 20%, are:

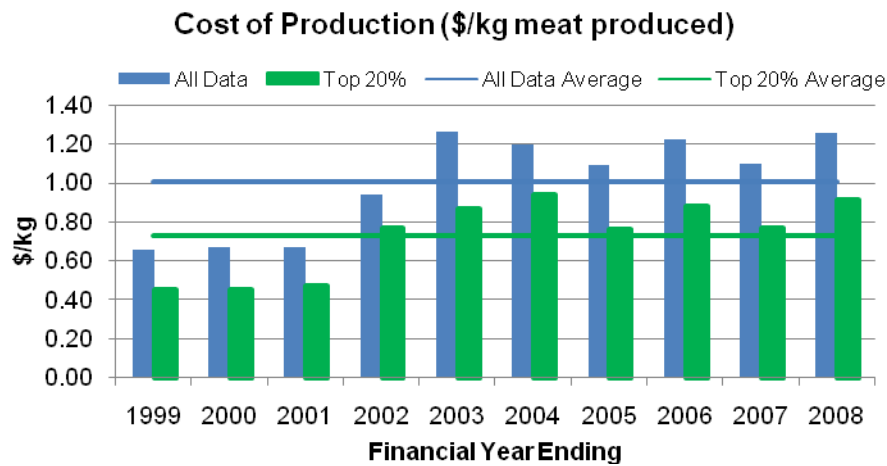
- Increased borrowings and interest burden, despite historically low interest rates,
- uncontained or high overheads,
- higher or more inefficient use of direct costs, and/or
- significantly lower productivity
- inadequate scale



**Figure 14.** Expense ratio of Queensland Data (Profit Probe™ 2009). Expense ratio=(direct costs+variable costs+interest and other lease costs)/gross product\*100.

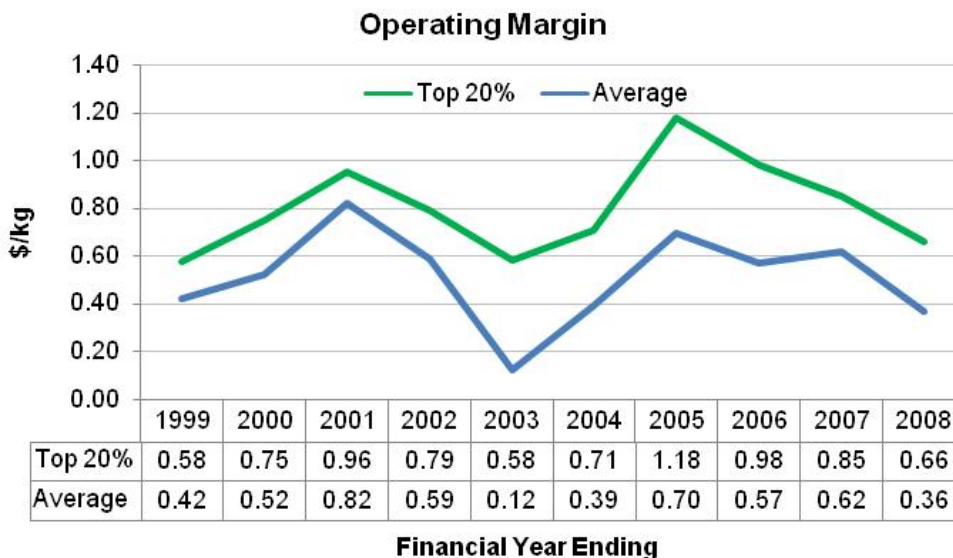
One of the best indicators of how the industry is trending, is the cost of production or COP (Figure 15) as it is not influenced by external factors such as cattle prices or land values. COP has skyrocketed in both the average (from under \$0.70/kg to over \$1.20/kg) and top 20% (from under \$0.50/kg to over \$0.80) since 2001. The mean difference between the top 20% and the average has been \$0.23/kg. This large jump has been influenced by:

- Dry years (see Figure 8) as COP is inversely correlated to rainfall received (it jumps in dry years due to the lower production)
- Rising overhead costs such as fuel, power, labour, repairs and maintenance and increased compliance costs e.g. GST accounting and NLIS.
- Rising direct costs such as freight and supplements



**Figure 15.** Cost of production (\$/kg meat produced) of Queensland data (Profit Probe™ 2009).

The difference between price received and COP is referred to as operating margin. The operating margin of the Queensland data (Figure 16) shows peaks in 2001 and 2005 resulting primarily from the cattle market peaks during these years.

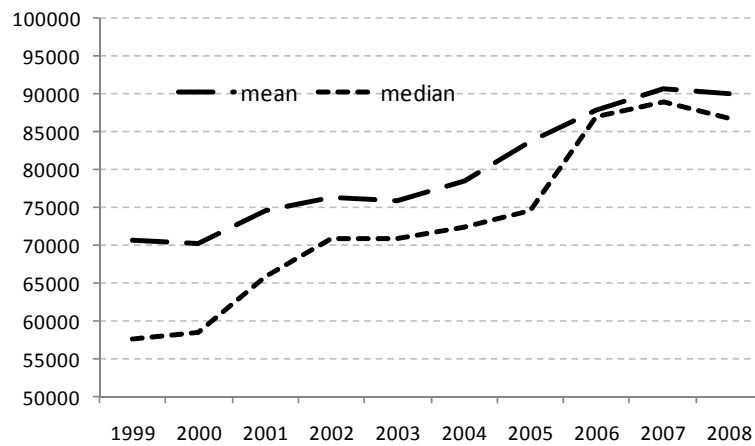


**Figure 16.** Operating margin of the Queensland data (Profit Probe™ 2009). Operating margin=price received-cost of production.



Whilst operating margins averaged higher for the second five year period analysed it is necessary to consider the finance and expense ratios at the same time. After considering the dramatically increasing finance ratio (Figure 7), the resultant expense ratio (Figure 14) shows that on average, producers have spent more than they have earned in six of the last seven years. This shortfall can only come out of increased borrowing and reduced equity.

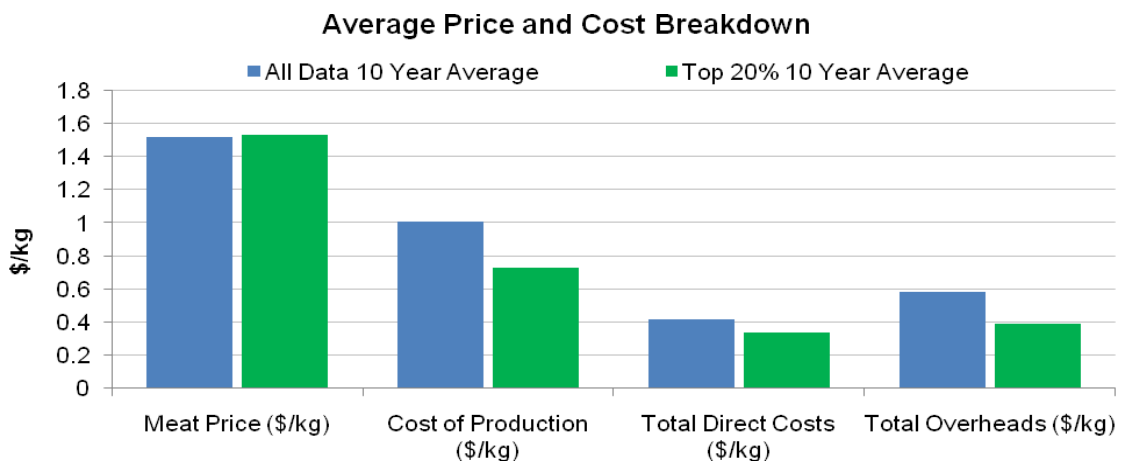
Operating margin generally finished the decade where it started. The spurt of confidence in the beef industry through 2006/07, which drove land prices and investment, was driven by the generally increasing operating margin (except for drought years). The trend has now reversed. Figure 17 shows both the mean and median labour cost from the Queensland data set. Cost per full time equivalent (FTE) has risen from \$57,000 in 1999 to \$87,000 in 2008, which is an annualised increase of 5%pa. There were no significant differences in the cost of labour between regions.



**Figure 17.** Time series of mean and median labour price for sample enterprises (Gregg and Rolfe, In Press)

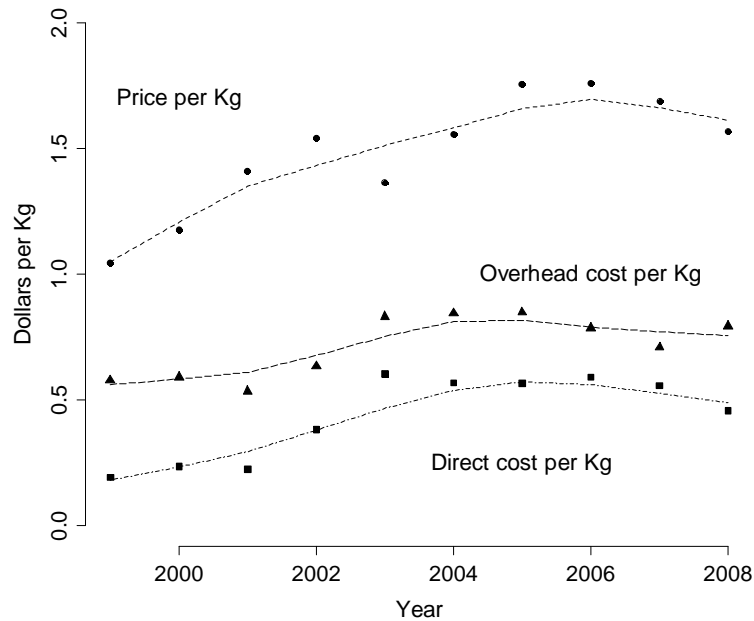
Appendix 4 contains a summary of the Queensland regional labour use benchmarks on FTE basis. Across all regions, each individual FTE in the top 20% consistently managed more animals and country, and generated a more gross product than a FTE on average.

Across all data, all regions and all years, the difference between the top 20% and the average is NOT due to price received. Figure 18 below shows the difference between the top 20% and the average is due to their cost of production and is largely attributable to higher overheads per kg of production and less efficient use of direct costs.



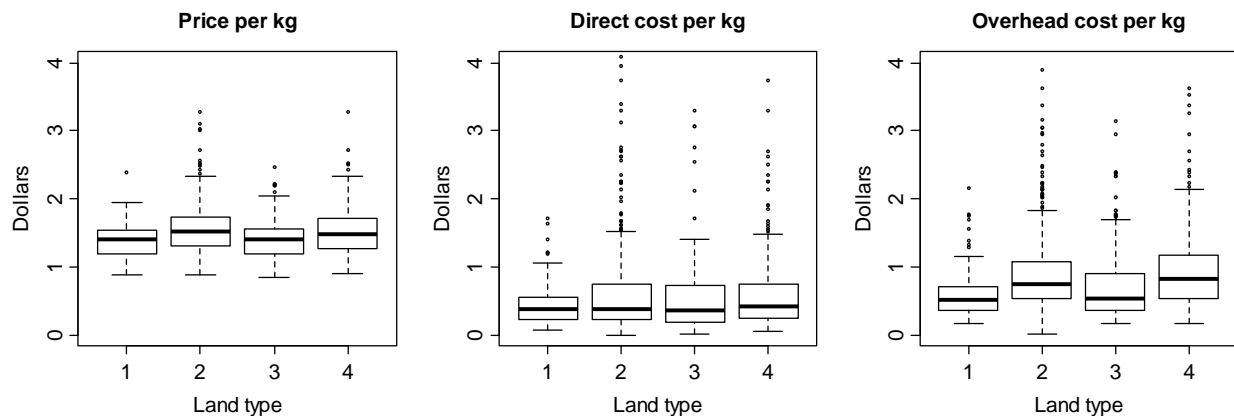
**Figure 18.** Average meat price vs costs for the Top 20% and average Queensland data (Profit Probe™ 2009)

A timeline of median liveweight price, overheads and direct costs with trend lines is plotted in Figure 19. It demonstrates that costs rose as prices rose and then levelled off from 2004 as prices levelled off and then fell in 2007 and 2008, which in turn demonstrates the human propensity to spend what we earn.



**Figure 19.** Liveweight price and cost of production in \$/kg LW (Gregg and Rolfe, In Press)

In Figure 20 direct costs were not significantly different between regions ( $P$  value = 0.1633) but overheads per kg were significantly higher in the Brigalow and ironbark regions ( $P < 0.05$ ). The Mitchell and northern properties received significantly lower prices per kg than the other regions ( $P < 0.05$ ; Gregg and Rolfe, in press).



**Figure 20.** Price and costs (direct and overhead) per kg of beef produced by land type<sup>3</sup> (Gregg and Rolfe, In Press)

Land type codes: 1= Northern; 2=Brigalow; 3=Mitchell; 4=Ironbark.

<sup>3</sup> The boxplots in Figure 20 show the distribution of all results for each land type for the stated variables. The "box" contains the middle 50% (inter quartile range) of results and the line in the middle of the box shows the "median" result. The median result is the middle value of the entire sample when arranged from smallest to largest (i.e. 50% of results are below the median value and 50% are above). The lower and upper 25% (lower and upper quartiles) are shown by the dotted and single lines below and above the box with the exception of statistical outliers which are shown as dots. For example the price per kg for land type 1 (Northern Native and Desert Uplands) shows that the middle 50% of results were between \$1.20 and \$1.55/kg with the median value at \$1.45/kg. The lower quartile received prices between \$0.90 and \$1.20/kg, and the upper quartile between \$1.55 and \$1.95/kg.

The significant difference in overheads per kg produced could be due to scale. The average LSU managed was therefore examined (Figure 21). Some very large properties entering and leaving the data have provided the peaks in the top 20% data, however over 10 years the mean difference between the top 20% and the average is 2,565 LSU. Therefore scale has been a major contributor to the difference in profitability between the top 20% and the average. This presents problems for the industry because it is a structural issue which is very difficult for an individual to correct.

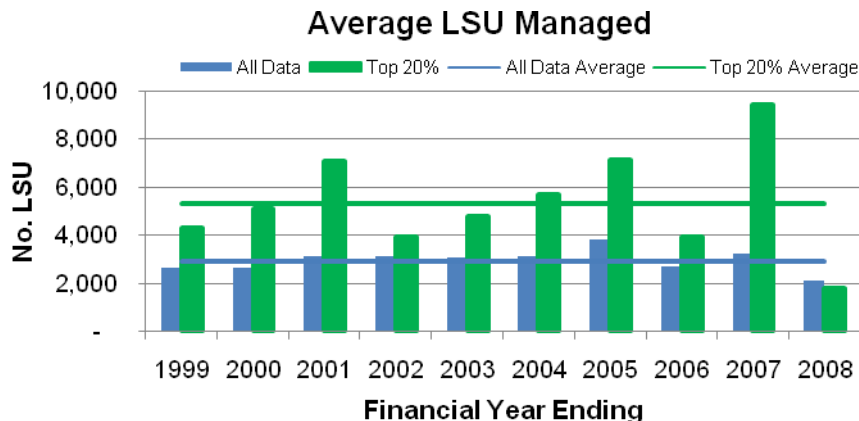


Figure 21. Scale of Queensland businesses (Profit Probe™ 2009)

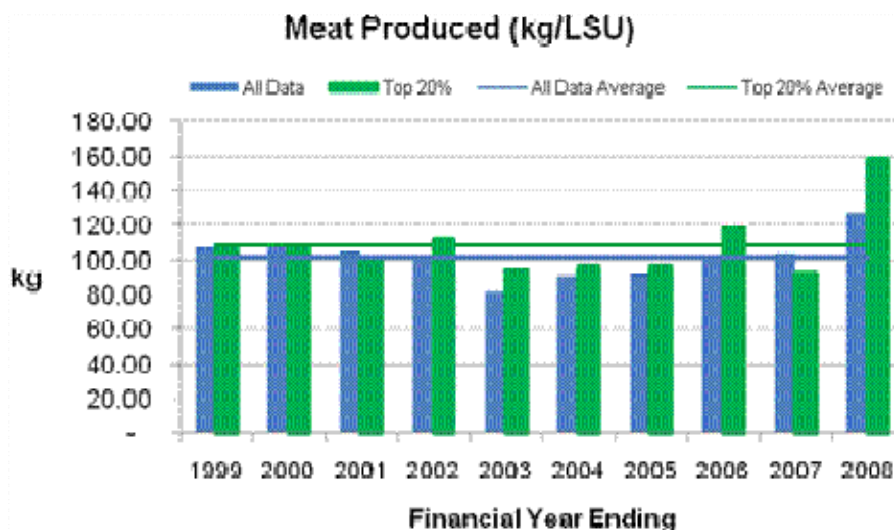
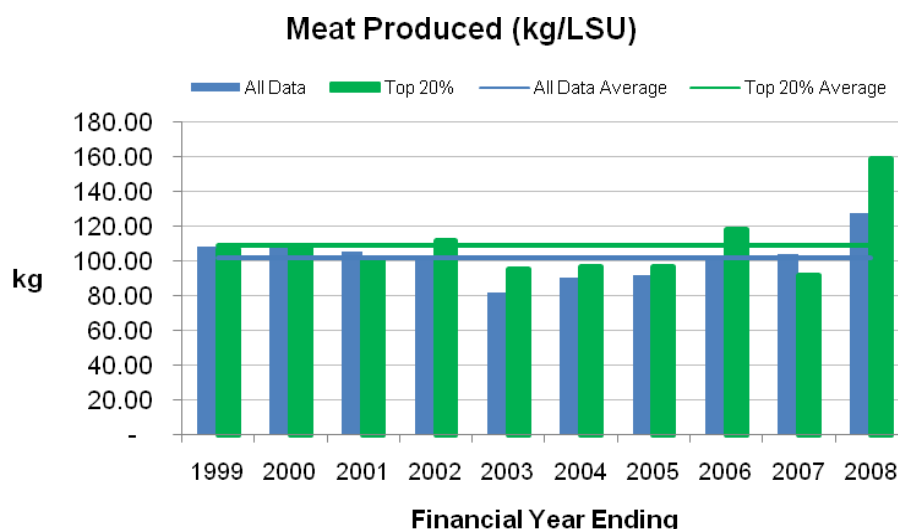


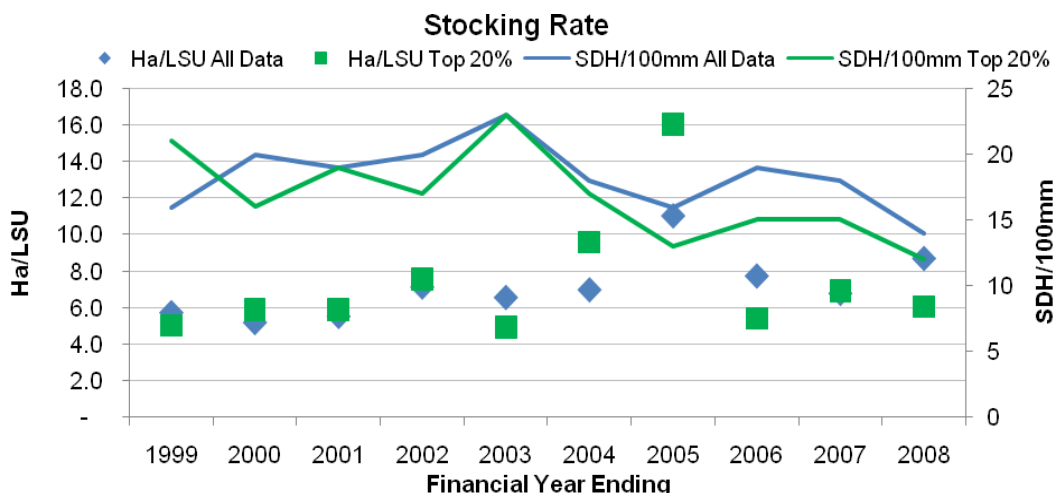
Figure 22. Annual liveweight production (Profit Probe™ 2009)

Higher profitability is generally associated with higher production. The data in Figure 23 below weakens that hypothesis as the top 20% only produced 6.8% more kg/LSU over a 10 year average. This data indicates that animal productivity, whilst a major contributing factor to profitability, does not differentiate the high performers as much as cost minimisation.



**Figure 23.** Annual liveweight production (Profit Probe™ 2009)

Stocking rate is examined in Figure 24. The stocking rate of the top 20% is lower in seven out of ten years when adjusted for rainfall (using SDH/100mm – refer to glossary). They were approximately 17% lower over the last 4 years. A lower stocking rate would allow the top 20% more room to move with seasonal variation and encourage higher productivity per head.



**Figure 24.** Stocking rate in ha/LSU and SDH/100mm for Queensland data (Profit Probe™ 2009)

The use of plant and equipment is a notable difference between the average result for the entire analysis group and top 20%. Table 1 shows two key points, apart from those already highlighted. The first is that the top 20% plant income ratio (average plant and equipment value as a percentage of total gross product) is 55% that of the average for all data over the last five years. The second is that building and plant costs (made up mostly of repairs and maintenance and fuel and oil for normal business operation) are 27% lower for the top 20%. This is a function of efficient use of resources, not necessarily spending less in these areas. It shows that the more profitable businesses ensure their overheads all contribute to generate greater income.

### 3.3 Trends in the Queensland key performance indicators

**Table 1.** Summary of all KPI's over a 10 year average, for the first five years and the second five years (Profit Probe™ 2009)

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
ROA	2.60	8.53	3.38	10.38	1.82	6.68
Asset Turnover Ratio	11.36	18.58	13.30	20.48	9.42	16.68
Gross Margin Ratio	40.39	57.95	46.58	61.92	34.20	53.98
Overhead Ratio	53.78	30.72	55.84	29.42	51.72	32.02
Finance Ratio	17.81	12.24	15.68	10.60	19.94	13.88
Expense Ratio	101.18	61.79	97.12	57.62	105.24	65.96

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
EBIT (\$/ha)	8.16	14.19	9.20	14.91	7.13	13.48
Production ROA	4.41	15.43	1.31	20.38	10.13	10.48
Plant Income Ratio	56.49	28.70	53.15	24.42	59.83	32.97
Meat Produced (kg/ha)	32.90	32.20	33.40	35.60	32.40	28.80
Gross Product	495,017.72	909,013.21	434,756.65	808,405.57	555,278.80	1,009,620.85
Average AU Managed	2,998.40	5,363.30	2,968.20	5,141.40	3,028.60	5,585.20
Area Available	21,176.91	40,940.43	17,620.76	29,002.74	24,733.06	52,878.12

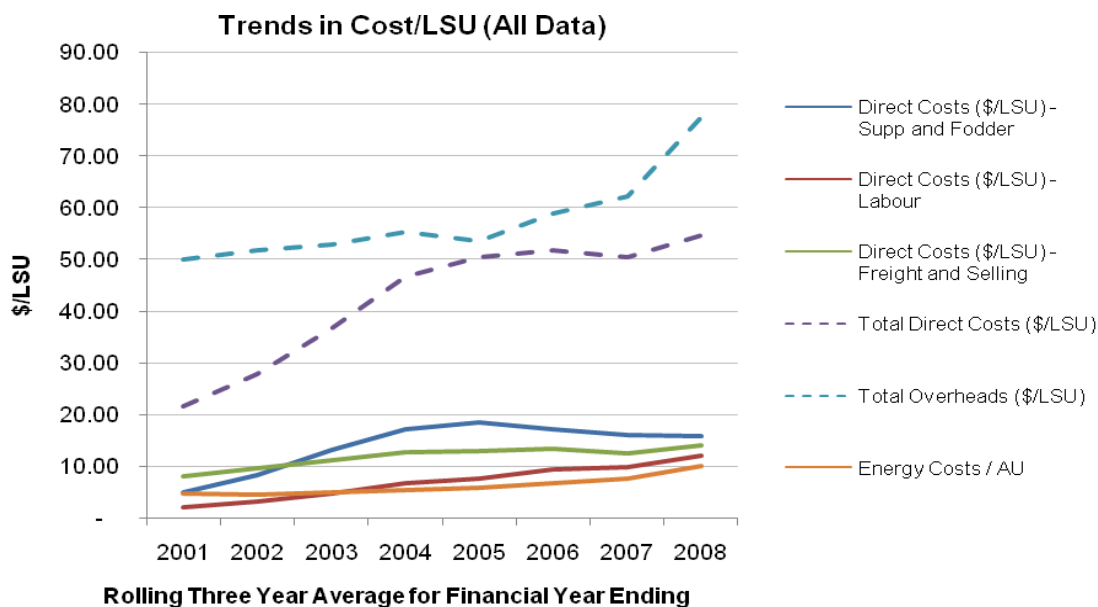
	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Meat Price (\$/kg)	1.52	1.53	1.33	1.33	1.70	1.73
Total Direct Costs (\$/kg)	0.42	0.34	0.32	0.26	0.52	0.41
Production GM (\$/kg)	1.08	1.21	1.04	1.16	1.13	1.27
Total Overheads (\$/kg)	0.59	0.39	0.52	0.34	0.65	0.44
Cost of Production (\$/kg)	1.01	0.73	0.84	0.60	1.17	0.85

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Overheads (%GP) - Buildings and Plant	10.36	7.22	10.04	6.61	10.67	7.83
Overheads (%GP) - Labour	7.82	5.73	7.86	5.56	7.77	5.91
Overheads (%GP) - Administration	5.66	3.68	4.83	2.97	6.49	4.39
Overheads (%GP) - Land	1.93	1.26	1.81	1.28	2.04	1.23
Overheads (%GP) - Land Maintenance	0.74	0.43	0.73	0.32	0.75	0.54
Overheads (%GP) - Land Leasing, Rent	2.02	2.41	2.81	3.35	1.24	1.46
Overheads (%GP) - Unpaid Labour	6.32	3.72	7.53	4.31	5.11	3.13

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Meat Produced (kg/LSU)	101.90	108.80	101.00	105.00	102.80	112.60
Direct Costs (\$/LSU) - Supp and Fodder	13.16	10.72	9.71	8.05	16.60	13.38
Direct Costs (\$/LSU) - Labour	7.14	5.51	3.67	2.64	10.61	8.37
Direct Costs (\$/LSU) - Animal Health	4.22	3.69	3.21	2.65	5.24	4.73
Direct Costs (\$/LSU) - Agistment	3.13	2.09	1.91	1.40	4.35	2.77
Direct Costs (\$/LSU) - Freight and Selling	11.87	11.82	9.89	10.05	13.84	13.59
Total Direct Costs (\$/LSU)	41.93	36.46	30.50	27.52	53.35	45.39
Production GM (\$/LSU)	110.08	131.77	104.66	121.07	115.50	142.47
Total Overheads (\$/LSU)	59.95	43.51	52.20	35.48	67.70	51.54

The most noticeable trends identified in the Queensland data were in direct and overhead costs:

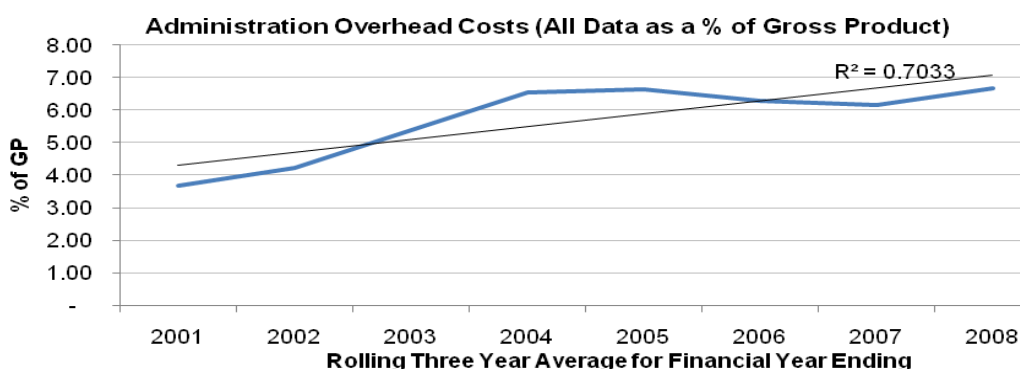
- Total direct costs per LSU have risen by 150%, with a significant part of that being supplements and fodder in the first half of the decade and maintained by rises in freight, labour and energy.
- Total overheads per LSU have risen by 54% across the whole data set, with major jumps in 2007 and 2008



**Figure 25.** Trends in key costs (Profit Probe™ 2009)

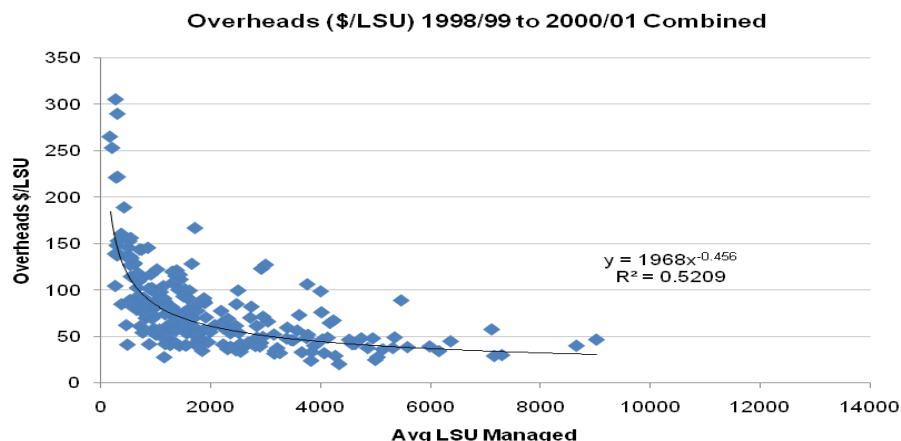
The labour component in the graph above is only the direct cost portion of total. The majority of the increase in labour costs (discussed in previous section) has occurred as overheads. Supplement and fodder, along with freight and selling costs are the direct costs that have increased the most on a per LSU basis during the analysis period.

The overhead with the most apparent increase is administration costs as seen in Figure 26. Administration (telephone, accounting, electricity, printing, postage, stationery, subscriptions, advertising, bank charges, legal fees, general freight, and insurance) has risen from 2001 by approximately three percentage points to be just under 7% of gross product.

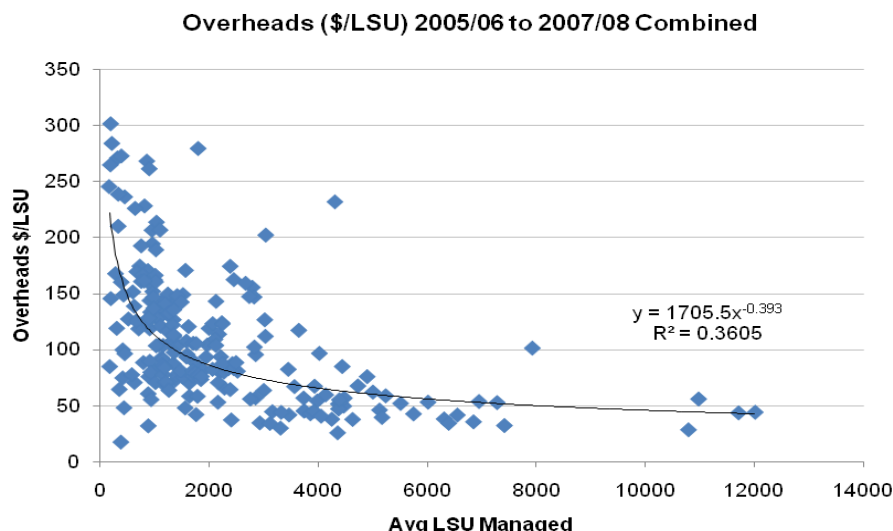


**Figure 26.** Trends in administrative overheads

Scale has proven to be an overriding determinant of profitability and this is primarily due to ever increasing overheads. The data in Figure 27 is a scatter diagram of LSU managed compared to OH/LSU for all observations from 1998/99-2000/01. Figure 28 is the same diagram for the last three years of data (2005/06 to 2007/08).



**Figure 27.** Overheads per LSU against LSU managed 1999-2001 (Profit Probe™ 2009)



**Figure 28.** Overheads per LSU against LSU managed 2006-2008 (Profit Probe™ 2009)

Figure 28 indicates that around 2,400 LSU are currently required to keep the OH below \$80/LSU across a range of properties and regions. Scale however only explains 36% of the variability in OH/LSU for recent years (Figure 28) as opposed to 52% in the early analysis period (Figure 27). Therefore, management style is likely to be a major factor in accounting for the remaining difference. Table 2 shows the difference in number of LSU required to keep OH/LSU at or below certain amounts based on the power regression equations displayed in Figure 27 and Figure 28. This data shows that the number of LSU required to keep OH/LSU below \$50 has increased 153% and to keep below \$90 has increased 105%.

OH/LSU	Number of LSU required	
	1998/99 to 2000/01	2005/06 to 2007/08
\$50	3,147	7,952
\$60	2,110	5,000
\$70	1,505	3,378
\$80	1,123	2,405
\$90	867	1,782

**Table 2.** LSU required for different OH \$/LSU based on regression equations from Figure 27 and Figure 28 (Profit Probe™ 2009)

### 3.4 Regional key performance indicators

The analysis of data was based on four land types in Queensland (RCS data), two for the Northern Territory and one for Western Australia (Holmes and Company data). Not all of the observations and findings reported in the following sections are necessarily new for northern Australia. In some cases the situation of certain key performance indicators won't have changed through the analysis period however they are still extremely relevant to discuss as, even though they are not new findings, they are still having considerable impact on the profitability of beef businesses.

#### 3.4.1 Queensland northern native pastures and desert uplands

The Northern region primarily comprises speargrass, *Aristida* and *Bothriochloa* plant communities through northern Queensland as well as the spinifex and buffel vegetation of the Desert Uplands region. The scale of businesses in this region is the greatest of any in terms of both hectares managed and LSU managed.

Detailed data on the region is presented in Table 3 at the end of this section. Highlights and key points/observations pertinent to the northern region include:

- ROA (4% average and 10.4% top 20%) was higher in the first half of the decade. The gap between the top 20% and average has also got narrower (5.5% to 1.74% respectively).
- The negative trend in ROA (clearly seen in Figure 33) is due to both an increase in land value and the poor season in 2008.
- A very worrying trend is expense ratio with the average producer being at or above 100% in each of the last three years. This means they spent more than they earned. Even the top 20% has gone from 40% at their best to 75% in the last year (Figure 29). Eight to ten percent of this increase in expense ratio has come from increased finance costs (Table 3).
- A second serious concern is the gross margin ratio (Figure 30). The average is trending down seriously to where it is now below 20%. The top 20% are beginning to trend up from a low of 40% but are still a low 50%. The probable reasons for this include:
  - Very poor reproduction rates e.g. wet cow re-conception rates of under 10%, 1st calf heifer re-conception rates of under 20% (Schatz and Hearnden 20084), and low dry cow conception rates (70% has been reported in 2009).
  - Poor husbandry and stock control practices.
  - Poorly targeted or implemented nutrition programmes either making direct costs high or not getting the productivity gains required to fund supplementation.
  - Overstocking and poor distribution of cattle across properties.
  - Poor quality genetics, especially in reproduction.
  - Frame score of cows too high for the available nutrition.
  - Direct costs have risen from \$25/LSU in the first five years to \$44/LSU in the second five years.
  - This rise in direct costs has not been accompanied by a consequent rise in productivity

<sup>4</sup> The Shatz and Hearnden research is based on Northern Territory data however the findings are applicable to the northern Queensland region.



- The trend in the overhead ratio of the top 20% is a concern (Figure 31); however the kick up in 2008 would be caused principally by drought. Overheads have lifted from \$35 to \$45/LSU from the first to the second five years.
- Similarly, cost of production (Figure 32) was highest in the very dry years (2003, 2004, 2006 and 2008).
- Costs and cost of production (Figure 35) also clearly reflected the dry years especially 2003, 2006 and 2008. It has however risen dramatically from \$0.58 to \$0.88 (top 20%) and \$0.74 to \$1.08/kg LW (average) from the first five years to the second five years.
- Stocking rate adjusted for rainfall (Figure 34) clearly shows the average were beginning to overstock in 2002 and were very severely overstocked in 2003 and remained overstocked in 2004. The top 20% on the other hand were caught napping in 2003 and were overstocked in one year only. Assuming a benchmark carrying capacity of 9 SDH/100mm, both groups have been conservatively stocked since and managed destocking well in 2008.
- Table 3 also indicates the plant: income ratio was nearly twice as high for the average group. This could be due to having too much plant relative to size or having similar plant on a smaller scale.
- Meat production per ha (13.3 to 13.7kg/ha) over 10 years was similar in the top 20% and average groups. Production per LSU was slightly higher in the top 20% (88.4 to 83.8kg/LSU).
- Gross product however was approximately twice as high in the Top 20% (\$1.4m) as in the average (\$745,000) which was a result of bigger properties (60,000ha vs 40,000ha) and carrying more stock (10,500LSU vs 6,100LSU).
- Price received was the same, averaging \$1.41 in the top 20% and \$1.40 on average.
- Gross margin per LSU over 10 years was approximately \$84/ LSU on average and \$92/LSU in the top 20%. The difference is almost entirely due to the additional 5kg/LSU produced by the top 20% at fewer costs per LSU.

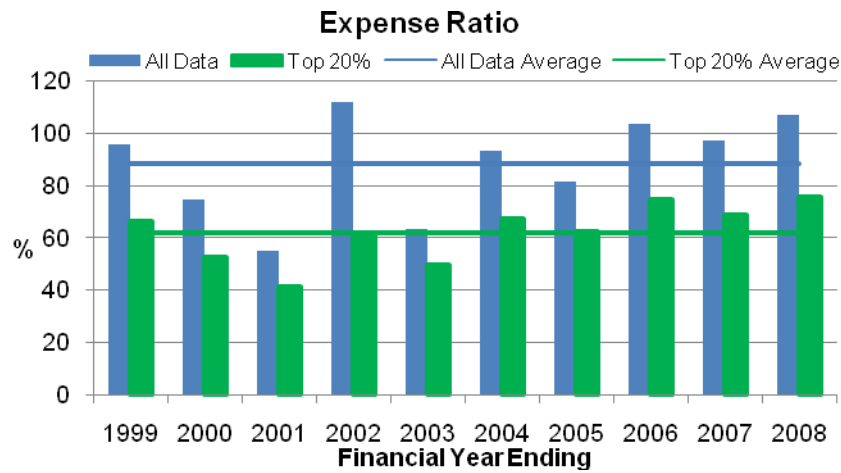


Figure 29. Expense ratio in the northern region

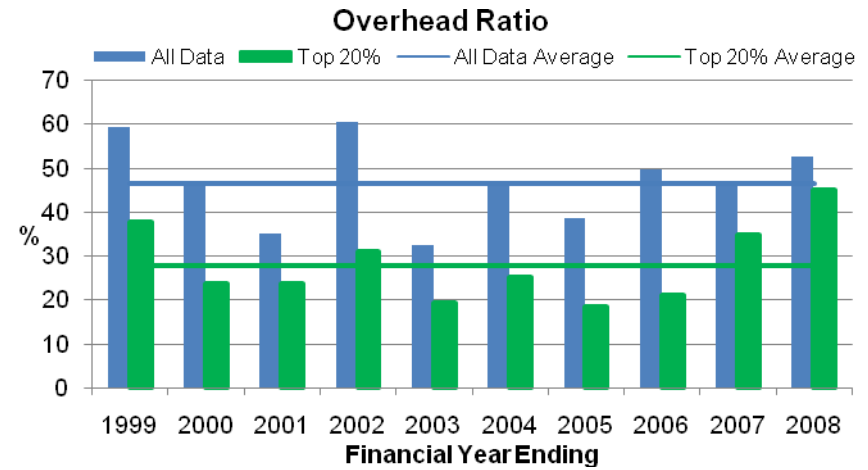


Figure 31. Overhead ratio of the northern region

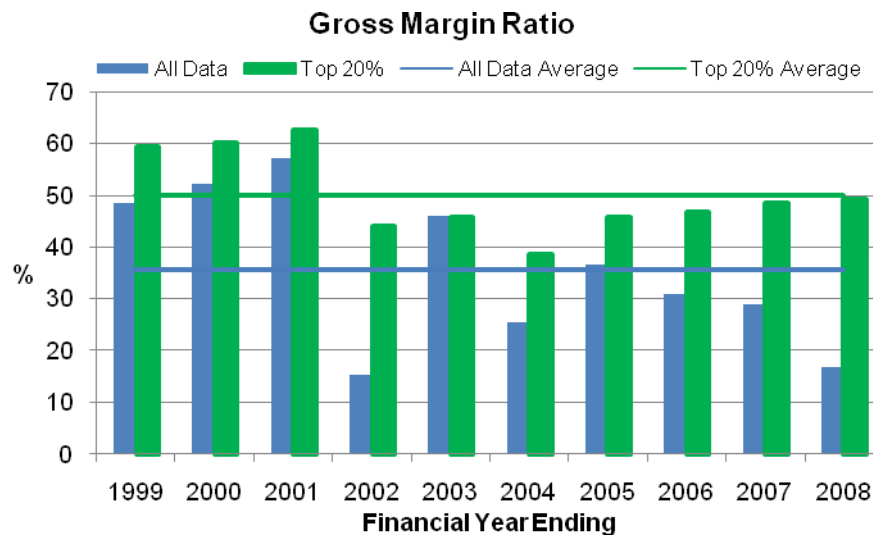


Figure 30. Gross margin ratio in the northern region

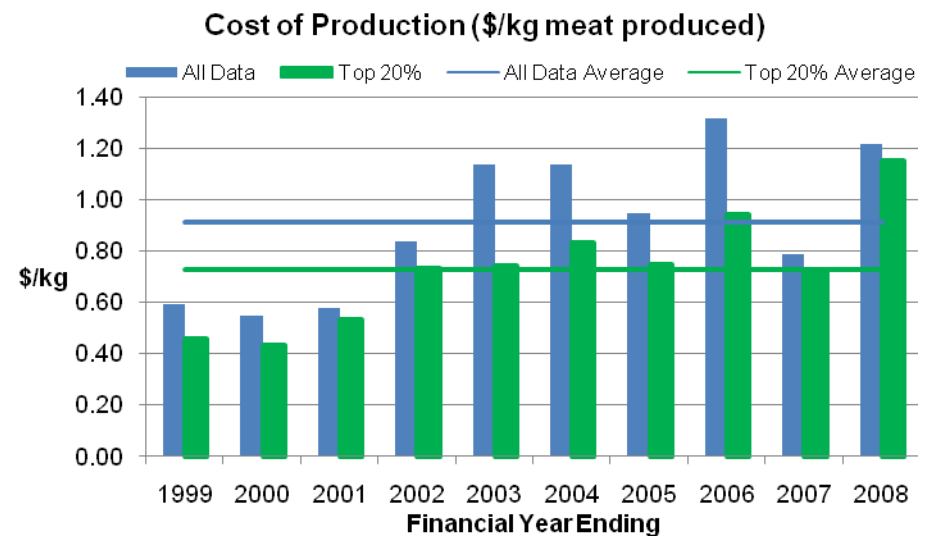


Figure 32. Cost of production in the northern region

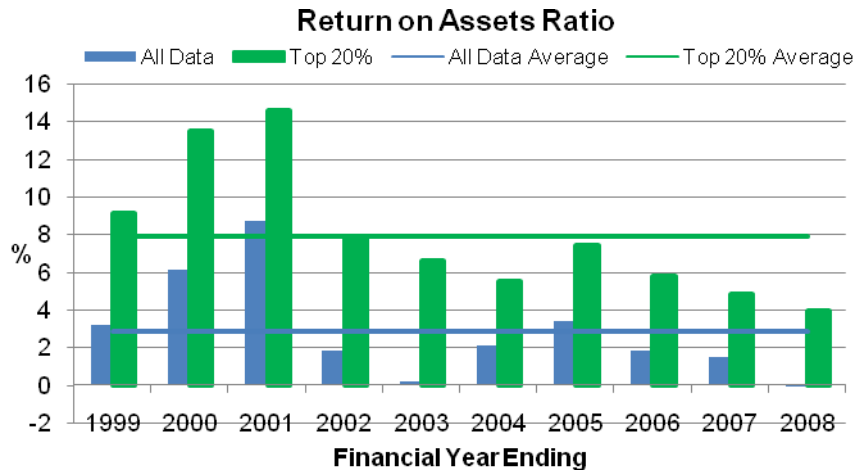


Figure 33. Return on assets in the northern region

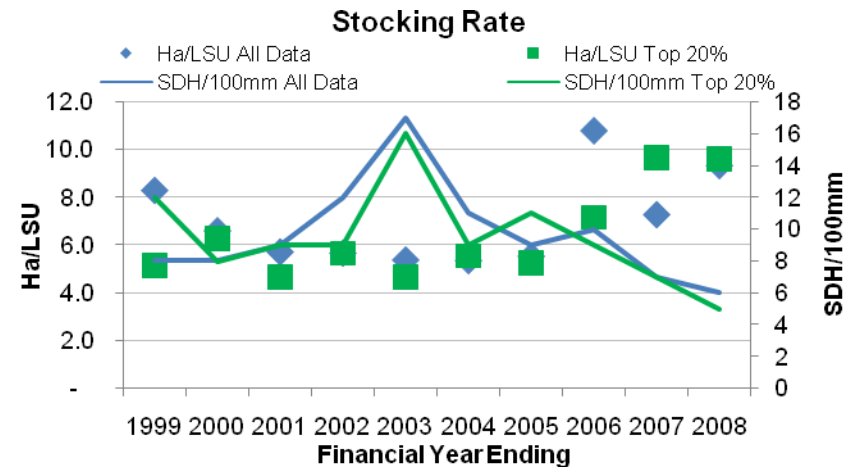


Figure 34. Stocking rate trends in the northern region

Price and Cost Breakdown (All Businesses)

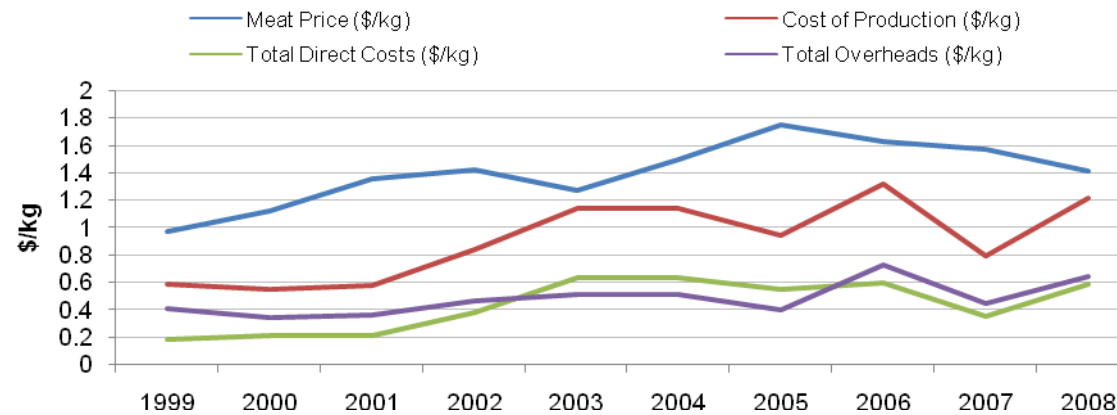


Figure 35. Price and cost comparison for the northern region

**Table 3.** Summary of the northern region KPI's over a 10 year average, for the first five years and the second five years.

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
ROA	2.87	7.91	4.00	10.34	1.74	5.48
Asset Turnover Ratio	12.01	15.73	14.74	19.66	9.28	11.80
Gross Margin Ratio	35.75	50.04	43.78	54.34	27.72	45.74
Overhead Ratio	46.61	27.94	46.54	27.00	46.68	28.88
Finance Ratio	14.09	13.28	10.02	8.28	18.16	18.28
Expense Ratio	88.49	62.09	80.32	54.24	96.66	69.94

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
EBIT (\$/ha)	7.21	12.17	7.82	13.22	6.61	11.13
Production ROA	0.83	12.83	4.73	15.95	3.07	9.71
Plant Income Ratio	40.95	21.85	39.58	20.54	42.32	23.16
Meat Produced (kg/ha)	13.70	13.30	13.60	14.60	13.80	12.00
Gross Product	745,558.83	1,405,680.17	700,314.82	1,376,747.00	790,802.84	1,434,613.33
Average AU Managed	6,124.50	10,564.70	6,286.40	11,362.00	5,962.60	9,767.40
Area Available	40,531.42	60,248.84	38,991.94	59,467.28	42,070.90	61,030.40

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Meat Price (\$/kg)	1.40	1.41	1.23	1.28	1.57	1.54
Total Direct Costs (\$/kg)	0.43	0.36	0.32	0.28	0.54	0.43
Production GM (\$/kg)	1.01	1.16	0.98	1.06	1.04	1.26
Total Overheads (\$/kg)	0.48	0.37	0.42	0.30	0.54	0.45
Cost of Production (\$/kg)	0.91	0.73	0.74	0.58	1.08	0.88

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Overheads (%GP) - Buildings and Plant	9.04	7.41	9.47	6.91	8.60	7.90
Overheads (%GP) - Labour	7.06	5.35	8.26	6.33	5.85	4.37
Overheads (%GP) - Administration	4.53	3.16	3.75	2.43	5.30	3.90
Overheads (%GP) - Land	1.78	1.25	1.61	1.11	1.95	1.38
Overheads (%GP) - Land Maintenance	0.30	0.19	0.38	0.16	0.21	0.21
Overheads (%GP) - Land Leasing, Rent	1.60	1.41	2.64	2.44	0.55	0.37
Overheads (%GP) - Unpaid Labour	5.11	4.05	5.36	3.07	4.87	5.02

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Meat Produced (kg/LSU)	83.80	88.40	84.40	90.00	83.20	86.80
Direct Costs (\$/LSU) - Supp and Fodder	13.69	12.80	10.01	9.54	17.37	16.06
Direct Costs (\$/LSU) - Labour	5.46	4.67	3.36	2.79	7.56	6.55
Direct Costs (\$/LSU) - Animal Health	2.98	2.56	2.30	2.33	3.67	2.78
Direct Costs (\$/LSU) - Agistment	2.18	0.87	1.17	1.45	3.19	0.28
Direct Costs (\$/LSU) - Freight and Selling	9.90	9.64	8.01	8.44	11.80	10.83
Total Direct Costs (\$/LSU)	34.78	31.01	25.45	25.03	44.10	36.99
Production GM (\$/LSU)	83.87	92.20	83.29	75.19	84.45	109.21
Total Overheads (\$/LSU)	39.85	33.23	34.72	26.87	44.98	39.59

### 3.4.2 Queensland Mitchell Grass and Broken Downs / Gidgee

The Mitchell region encompasses a majority of central west and south west Queensland. In order to maintain a large enough data set for effective benchmarking, businesses operating in mulga regions are included into this land type. Property numbers in the data in this region are low in some years so the top 20% number may not be valid for all parameters.

This region has traditionally run sheep but has gradually switched to cattle production since the mid 1990's. Much of the northern Mitchell downs is now used to background cattle coming from the northern breeder areas.

Detailed data on the region is presented in Table 4 below.

Highlights include:

- The ROA is almost twice as high as the extensive northern region, although it has dropped in the latter five years due principally to land values.
- Properties are smaller (22,000ha) and run less stock (2,550LSU on average) than the north, and the data do not suggest scale is an issue in this region.
- Gross margin ratio is very low on average (39%) and this is most likely a function of the frequency of very dry years in this region.
- The gross margin was \$105/LSU in the first five years which had a lot of drought. Properties in this region have had a return to better seasons and the gross margins have increased to \$268/LSU (top 20%) and \$139/LSU (average) in the second five years.
- Gross product has averaged \$405,000 and was \$550,000 in the top 20% over 10 years and the gap was slightly larger in the latter half of the decade. The difference is due principally to beef production per ha which is best illustrated in the last five years where the average was 13.6kg/ha (from 114kg/LSU) when the top 20% was 27.2kg/ha (from 200kg/LSU). The reasons why the top 20% are significantly better, include:
  - A switch away from breeding to trading, backgrounding and/or agisting (based on analysis of businesses appearing in the top 20%)
  - Trading operations carrying more, smaller cattle with lower feed requirements for maintenance (refer to section 3.5.2).
- As in all regions, the top 20% had lower cost of production. In the last five years COP was \$0.68 in the Top 20% and \$1.20/kg on average. It is useful to note that the cost of production hardly changed in the top 20% from the first five years to the second, but it almost doubled in the average group. This is most likely due to the productivity gains made by the top 20% by changing enterprise.
- The plant/income ratio is much higher in the average result but scale is not a justifiable reason as with the northern region.
- Cash overheads averaged \$74/LSU over the last five years. This is quite a lot higher than the northern properties, but this is a function of smaller scale. Administrative overhead costs have increased from 3.5% of gross product to nearly 8% (Figure 36).

**Table 4.** Summary of the Mitchell and broken downs region KPI's over a 10 year average, for the first five years and the second five years.

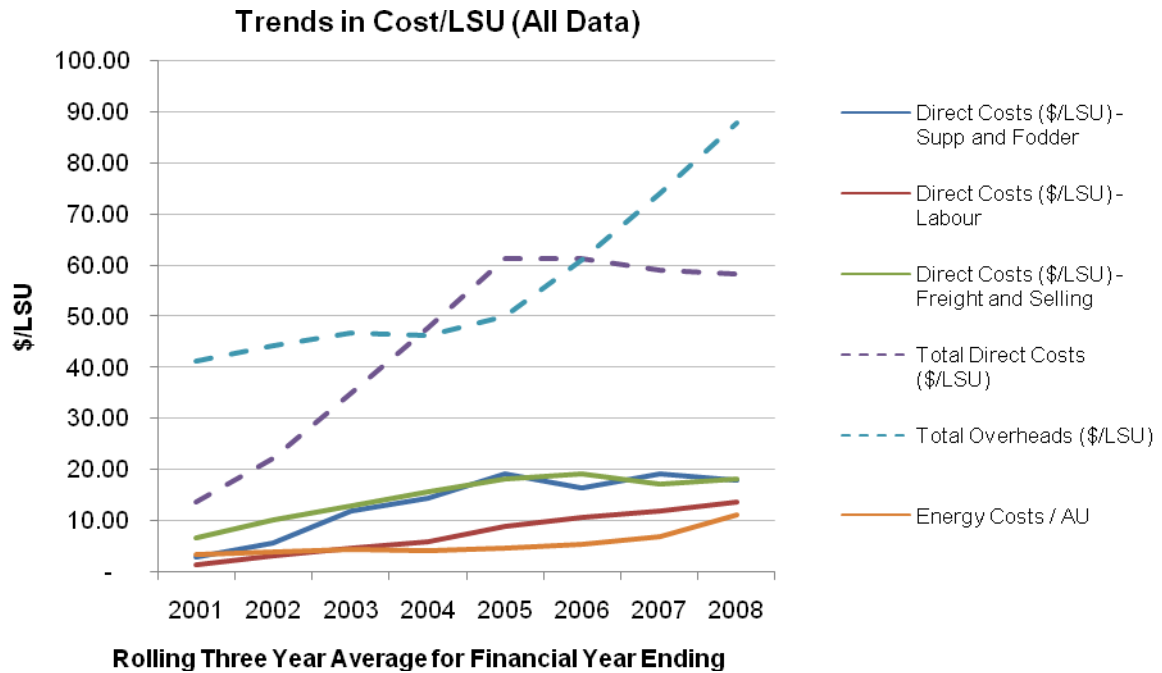
	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
ROA	5.10	10.45	7.10	11.56	3.10	9.34
Asset Turnover Ratio	13.62	19.17	17.00	20.92	10.24	17.42
Gross Margin Ratio	39.09	64.68	51.34	62.32	26.84	67.04
Overhead Ratio	42.77	26.71	40.46	26.62	45.08	26.80
Finance Ratio	11.03	11.59	11.28	8.54	10.78	14.64
Expense Ratio	84.42	55.47	74.90	53.86	93.94	57.08

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
EBIT (\$/ha)	6.91	18.88	7.31	11.18	6.50	26.58
Production ROA	4.83	20.23	12.31	22.05	2.64	18.40
Plant Income Ratio	53.33	32.21	41.18	19.69	65.47	44.74
Meat Produced (kg/ha)	14.20	21.80	14.80	16.40	13.60	27.20
Gross Product	404,717.39	549,430.42	410,046.38	523,059.61	399,388.40	575,801.22
Average AU Managed	2,549.30	2,334.40	3,002.00	2,937.40	2,096.60	1,731.40
Area Available	22,013.20	21,468.75	23,780.22	25,348.90	20,246.18	17,588.60

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Meat Price (\$/kg)	1.50	1.56	1.30	1.33	1.70	1.78
Total Direct Costs (\$/kg)	0.41	0.29	0.26	0.28	0.56	0.30
Production GM (\$/kg)	1.09	1.26	0.96	1.15	1.22	1.37
Total Overheads (\$/kg)	0.52	0.37	0.41	0.36	0.64	0.39
Cost of Production (\$/kg)	0.93	0.66	0.67	0.63	1.20	0.68

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Overheads (%GP) - Buildings and Plant	9.33	6.53	9.01	7.13	9.65	5.92
Overheads (%GP) - Labour	4.24	2.77	4.19	2.67	4.29	2.87
Overheads (%GP) - Administration	6.09	4.25	4.75	3.34	7.43	5.16
Overheads (%GP) - Land	1.72	1.26	1.74	1.59	1.70	0.92
Overheads (%GP) - Land Maintenance	0.37	0.03	0.33	0.02	0.41	0.05
Overheads (%GP) - Land Leasing, Rent	1.48	1.06	1.89	0.67	1.07	1.45
Overheads (%GP) - Unpaid Labour	7.36	5.26	8.22	8.05	6.50	2.46

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Meat Produced (kg/LSU)	111.50	159.30	109.40	119.00	113.60	199.60
Direct Costs (\$/LSU) - Supp and Fodder	13.14	7.08	8.30	7.35	17.98	6.82
Direct Costs (\$/LSU) - Labour	7.78	5.29	3.01	2.17	12.56	8.42
Direct Costs (\$/LSU) - Animal Health	4.23	7.09	2.30	3.95	6.16	10.23
Direct Costs (\$/LSU) - Agistment	2.54	2.39	1.52	0.91	3.55	3.86
Direct Costs (\$/LSU) - Freight and Selling	14.55	22.02	10.11	16.69	18.98	27.35
Total Direct Costs (\$/LSU)	43.81	44.91	26.05	32.96	61.58	56.86
Production GM (\$/LSU)	122.16	186.48	105.33	104.50	138.99	268.45
Total Overheads (\$/LSU)	58.78	58.39	44.07	42.37	73.49	74.40



**Figure 36.** Trends in key costs for the mixed Mitchell Grass region (Profit Probe™ 2009)

### 3.4.3 Queensland Brigalow, Aristida and Bothriochloa

The largest of the data sets, this land type comprises the Brigalow, Aristida and Bothriochloa plant communities of central and southern Queensland. Traditionally this area has had small breeding herds and has grown stock out to Jap or European Ox. There has been a structural shift in the region over the last 15 years which has seen less breeding and more backgrounding of smaller stock for the feedlot market.

Highlights of this region are:

- ROA for the Brigalow region peaked with the good year and high prices in 2001, before land prices started to affect it. It has declined dramatically since. ROA is very low at 1.5% and 5.9% over the last five years (see Figure 37 and Table 5).
- Gross product was \$452,000 in all data and \$689,000 in the top 20% for the second five years. Properties were slightly larger in the top 20% (9,300ha) compared with the average (7,700ha), which may account for some of the effect. In the same period gross product per LSU was \$281 for Top 20% and \$261 for the average.
- The top 20% price received was slightly higher in the second five years by 2.8%, but there was only a 1.9% difference over all years. Therefore a 7.7% higher gross product/LSU in the top 20% has come primarily from productivity.
- In the second five years, the top 20% however had a \$0.35 lower cost of production (40%), which shows the difference in profit is in costs, not in price received (Table 5). Of the \$0.35 difference, \$0.27 was due to overheads and remainder was due to direct costs (Figure 41 and Figure 42).
- The top 20% produced over 27kg more per LSU than all data in the second five years and spent \$4/LSU less on supplements and fodder doing so.
- Gross margin/LSU has picked up from the first to the second five year period (partly due to an increase in price), and was \$158/LSU in all data vs \$212/LSU for the top 20% in the second period. The major causes of the \$54/LSU difference, were due to:
  - Lower direct costs in the Top 20% accounting for \$6/LSU.
  - An 18kg advantage in production (kg/LSU) accounting for \$32/LSU.

- A 5c price advantage accounting for another \$7/LSU.
- There are a number of reasons for the production and gross margin advantages of the top 20%. Similarly to the Mitchell region, these include:
  - Changing enterprises away from ox production to backgrounding smaller cattle.
  - Moving out of breeding enterprises into trading and backgrounding enterprises.
- The top 20% gross margin over the last five years of \$212/LSU fits with published data (Best et al 2007) of \$225/LSU for a breeding and EU ox enterprise on Brigalow country. The Best et al data could be higher due to the EU premium price used.
- Cash overheads were \$97/LSU for the smaller, average properties and \$70/LSU for the larger top 20% businesses over the last five years (Table 5).
- The expense ratio (Figure 38) on average has alarmingly been at or over 100% for eight of the last 10 years and has been at almost 120% in two of the last three years. Businesses are obviously drawing on equity to achieve this.
- This leads to concern over debt and even the top 20% have had finance ratios (Figure 39) over 20% in the last two years. A finance ratio of over 20% and a ROA of 1.5% do not sustainably go together and indicate a high degree of financially unviable businesses in this region. Figure 40 also supports this contention with debt levels between \$650 and \$950/LSU in both top 20% and all data for the last three years.
- Figure 43 confirms there has been no difference in the stocking rates between the top 20% and all businesses. However the trend is down, indicating a more conservative approach to stocking.



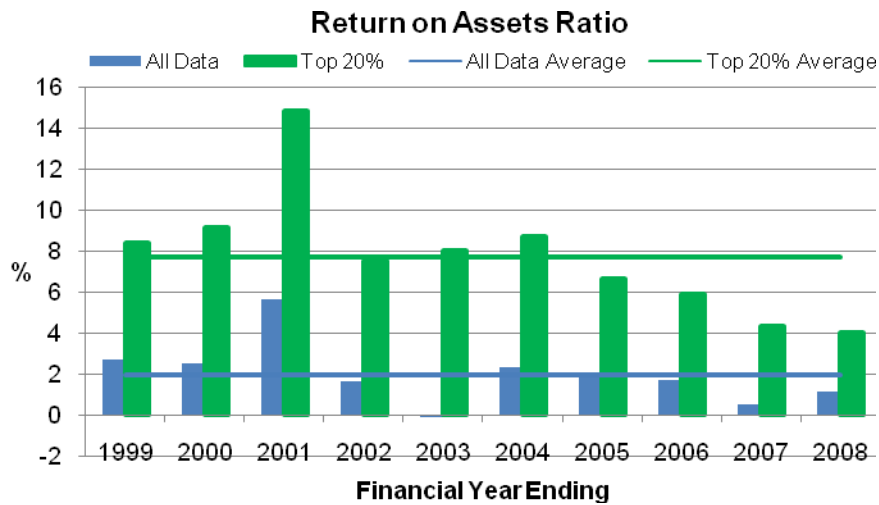


Figure 37. ROA in the Brigalow region.

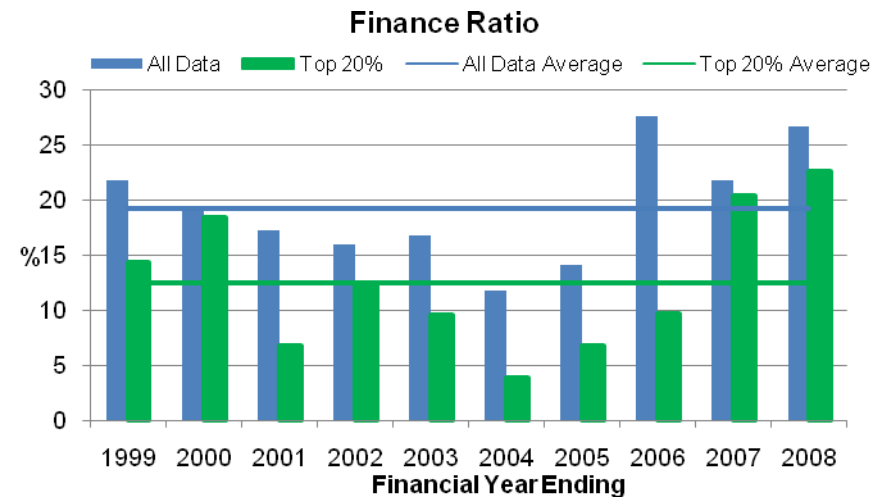


Figure 39. Finance ratio in the Brigalow region

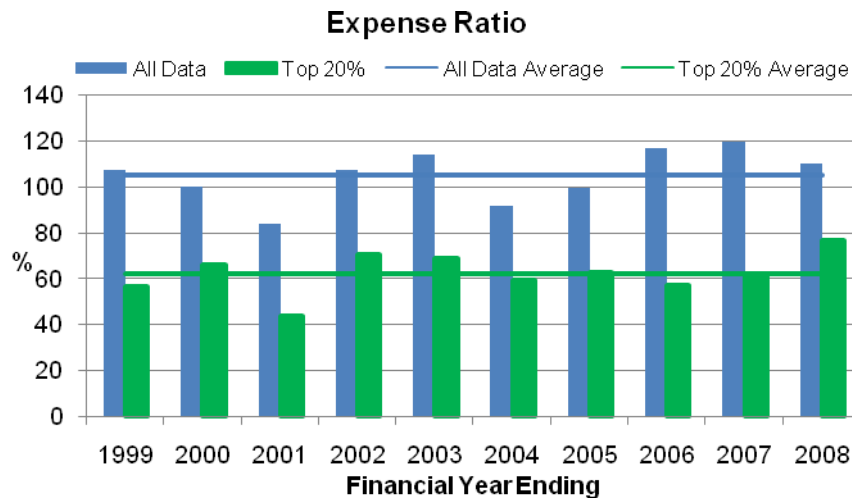


Figure 38. Expense ratio in the Brigalow region

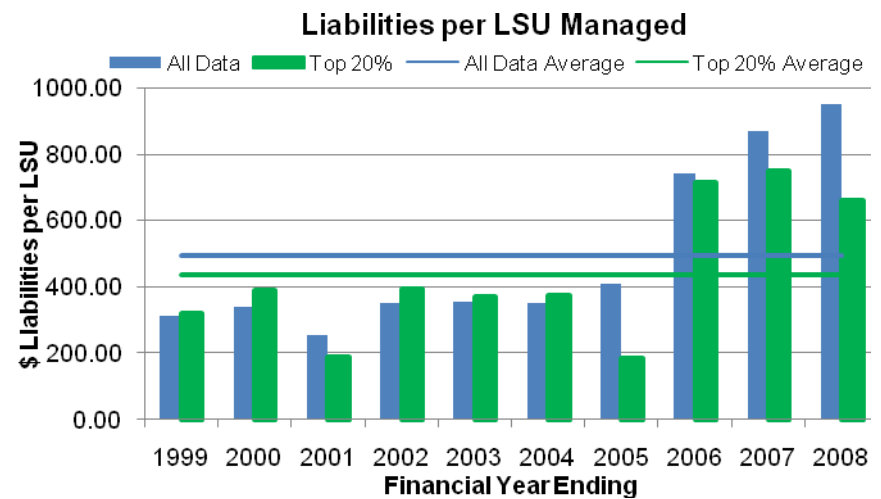
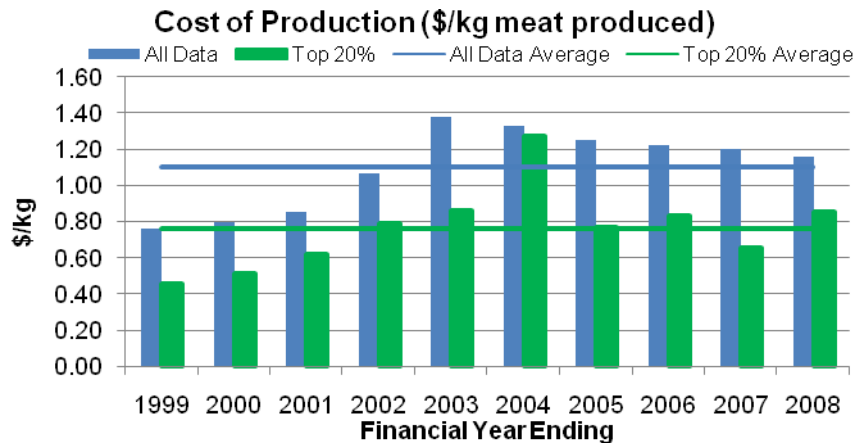
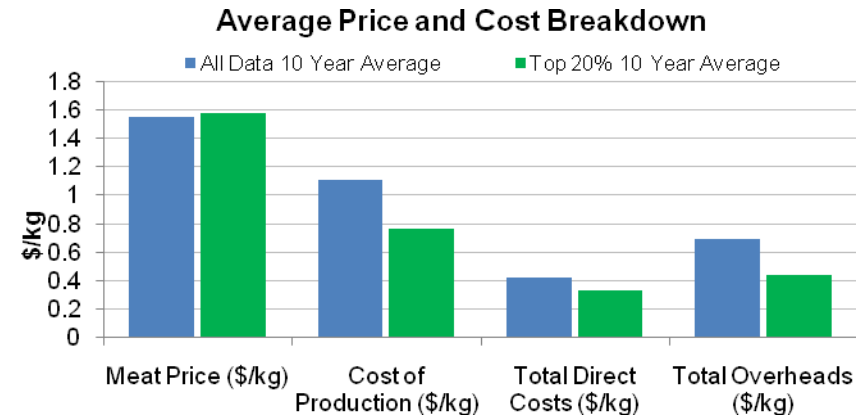


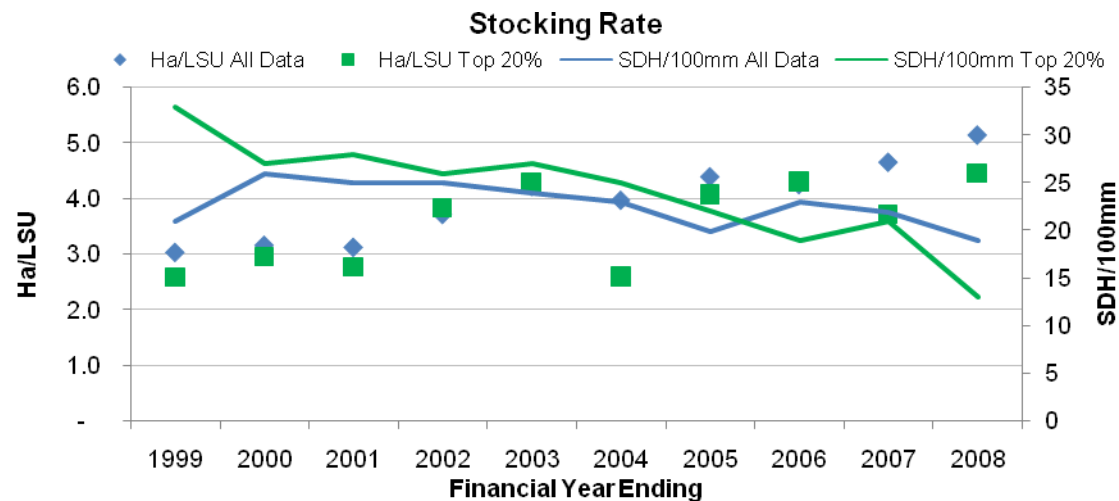
Figure 40. Liabilities/LSU in the Brigalow region



**Figure 41.** Cost of production (\$/kg) in the Brigalow region



**Figure 42.** A comparison of price and cost in the Brigalow region



**Figure 43.** Stocking rate in the Brigalow region

**Table 5.** Summary of the Brigalow region KPI's over a 10 year average, for the first five years and the second five years.

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
ROA	1.98	7.73	2.46	9.56	1.50	5.90
Asset Turnover Ratio	10.97	17.46	12.04	19.62	9.90	15.30
Gross Margin Ratio	43.20	60.26	49.50	65.58	36.90	54.94
Overhead Ratio	56.86	32.02	60.08	33.04	53.64	31.00
Finance Ratio	19.21	12.45	18.10	12.28	20.32	12.62
Expense Ratio	105.23	62.38	102.58	61.14	107.88	63.62

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
EBIT (\$/ha)	17.33	38.75	18.30	37.64	16.37	39.85
Production ROA	7.74	14.33	2.74	19.82	12.74	8.84
Plant Income Ratio	61.89	31.05	62.12	28.80	61.66	33.31
Meat Produced (kg/ha)	45.00	50.40	45.60	56.60	44.40	44.20
Gross Product	391,641.85	651,330.30	330,884.83	613,703.39	452,398.87	688,957.21
Average AU Managed	1,704.90	2,569.30	1,677.00	2,682.60	1,732.80	2,456.00
Area Available	6,711.56	9,110.13	5,724.00	8,924.10	7,699.12	9,296.16

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Meat Price (\$/kg)	1.55	1.58	1.36	1.35	1.74	1.81
Total Direct Costs (\$/kg)	0.42	0.32	0.33	0.23	0.50	0.41
Production GM (\$/kg)	1.16	1.36	1.13	1.30	1.20	1.42
Total Overheads (\$/kg)	0.69	0.44	0.64	0.41	0.73	0.46
Cost of Production (\$/kg)	1.10	0.76	0.97	0.65	1.23	0.88

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Overheads (%GP) - Buildings and Plant	10.65	6.27	10.69	6.65	10.62	5.88
Overheads (%GP) - Labour	8.18	6.37	8.13	6.16	8.23	6.58
Overheads (%GP) - Administration	5.78	4.27	4.57	3.76	6.98	4.78
Overheads (%GP) - Land	2.09	1.27	1.99	1.35	2.18	1.20
Overheads (%GP) - Land Maintenance	1.08	0.76	1.09	0.82	1.08	0.70
Overheads (%GP) - Land Leasing, Rent	3.12	3.99	4.09	5.53	2.14	2.46
Overheads (%GP) - Unpaid Labour	7.55	4.10	9.36	4.78	5.75	3.43

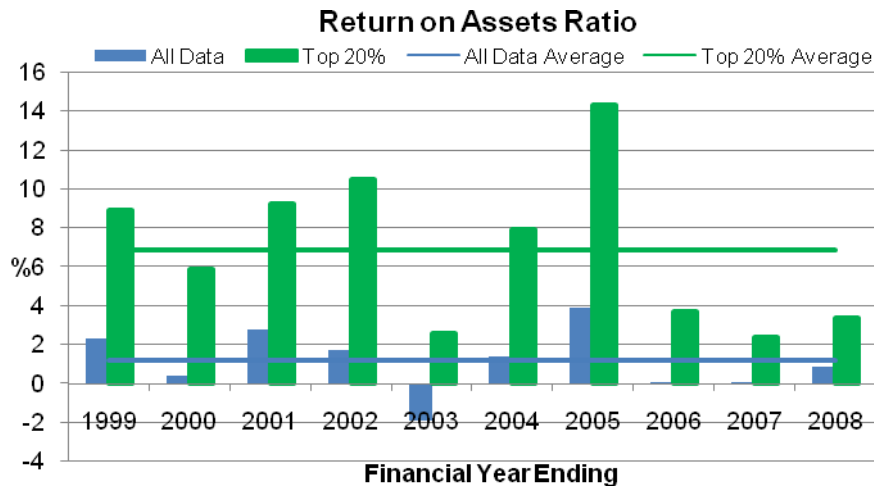
	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Meat Produced (kg/LSU)	126.90	141.70	120.60	132.60	133.20	150.80
Direct Costs (\$/LSU) - Supp and Fodder	15.13	11.24	10.07	6.31	20.18	16.16
Direct Costs (\$/LSU) - Labour	9.68	8.05	4.54	3.49	14.83	12.60
Direct Costs (\$/LSU) - Animal Health	5.84	5.08	4.89	4.21	6.80	5.95
Direct Costs (\$/LSU) - Agistment	2.85	1.92	2.75	1.26	2.94	2.58
Direct Costs (\$/LSU) - Freight and Selling	14.04	12.70	11.81	10.08	16.26	15.31
Total Direct Costs (\$/LSU)	52.54	45.50	38.52	30.33	66.55	60.67
Production GM (\$/LSU)	147.63	175.05	136.78	137.64	158.48	212.46
Total Overheads (\$/LSU)	86.81	62.45	76.43	54.43	97.19	70.47

### 3.4.4 Queensland ironbark, eucalyptus and speargrass

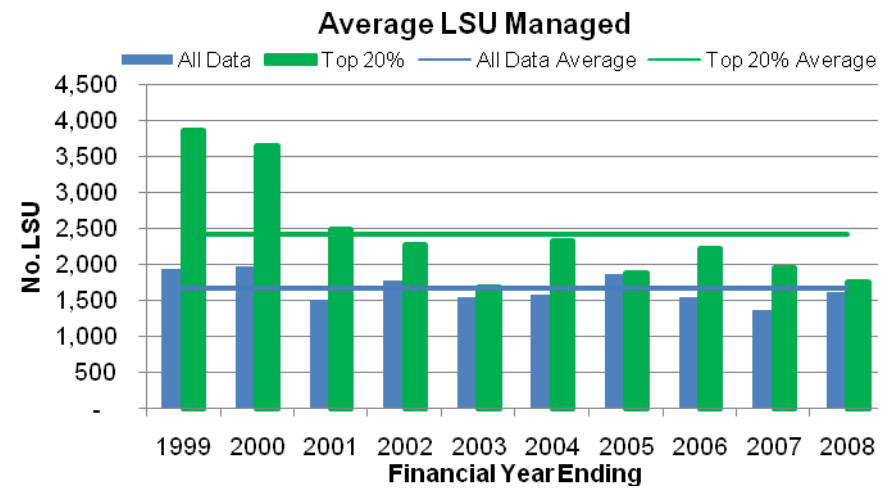
The ironbark region includes primarily businesses from coastal Queensland and ranges south of Proserpine to the NSW border.

Highlights of this region include:

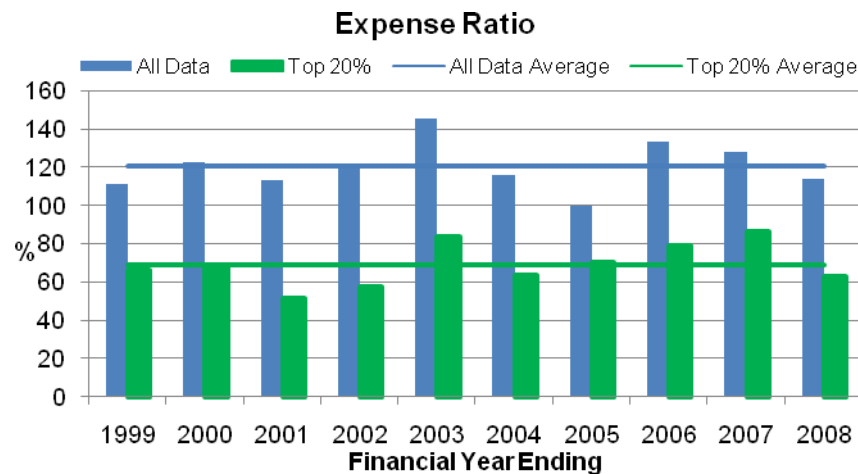
- The change in ROA is similar to other regions (Figure 44). However this region was very badly affected by the 2003 drought. The last 3 years has seen the ROA of the top 20% hovering under 4% and all businesses being less than 1%.
- The expense ratio (Figure 45) indicates that average businesses in this region have NOT been below 100% in the last 10 years. This would indicate that this region is generally subsidised by either equity or off farm income, except for the top 20%, which have remained below 80% in eight of the ten years analysed.
- Scale is not as big an influence in this data set, probably because even the top 20% are close to the 2,000LSU threshold, with an average of 2,044 LSU over the last five years (refer to Figure 46 and Table 6). All businesses averaged 1,600 LSU over the same period. The top 20% were 1,800ha larger in the same period.
- The RCS database is probably the larger end of the scale in this region. Therefore in the smaller businesses which have not been benchmarked, profitability would be much worse than reported here and off farm income an absolute necessity to survive.
- Cost of production is inversely related to seasons as seen by the spike for 2003 in Figure 47. However even the top 20% have been over \$0.90/kg for the last six years. In the last five years COP of the average was \$1.52/kg vs \$1.03 for the top 20%. This average COP of \$1.52/kg for the years 2003/04 to 2007/08 is the highest of all regions (\$0.29/kg higher than the Brigalow region and \$0.44/kg higher than the northern region). Scale along with production capability are major contributors to this higher COP as the overhead costs are spread amongst fewer animals producing less kilograms of beef (compared to the Brigalow region where average LSU was similar).
- The difference in finance ratio is the greatest for average vs top 20% in the ironbark region (20.06% vs 10.92% respectively). This debt level is then contributing to the high expense ratio discussed above.
- Gross margin over the last five years was \$121/LSU (average) and \$174/LSU (top 20%). The top 20% were again similar to published data of \$172/LSU (Best et al 2007) for a breeder/store steer enterprise. The same report has a gross margin of \$158/LSU for a breeder weaner steer operation. A lower gross margin would therefore be expected if stock were turned off as weaners.



**Figure 44.** ROA in the ironbark region



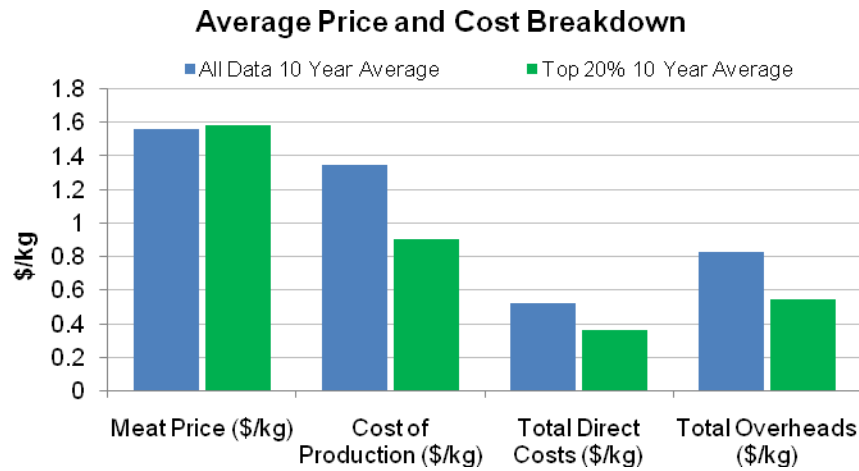
**Figure 46.** Average LSU managed in the ironbark region



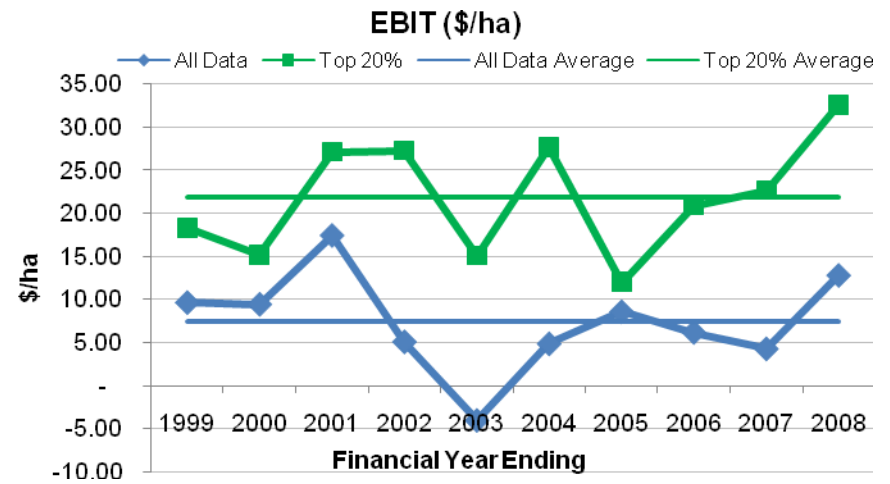
**Figure 45.** Expense ratio in the ironbark region



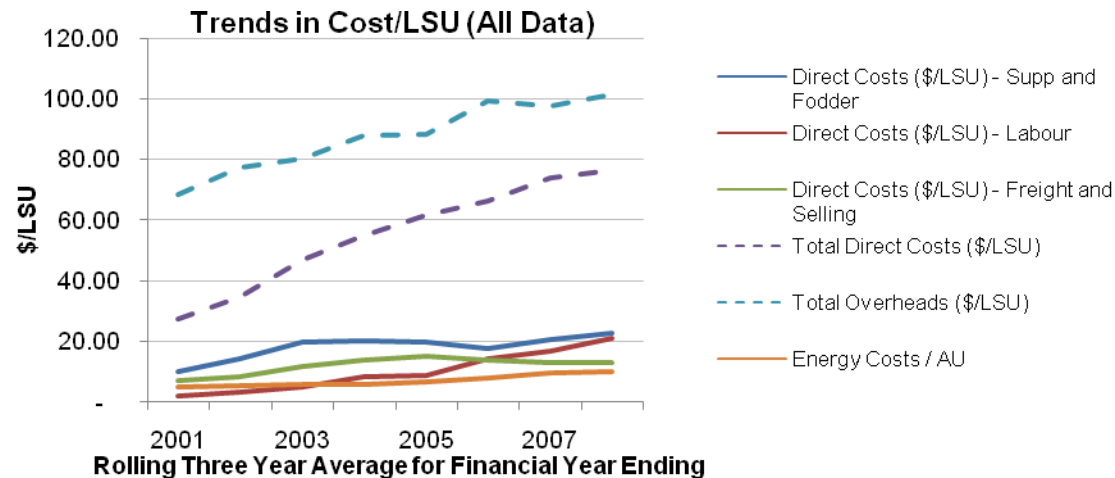
**Figure 47.** Price and cost per kg for ironbark region



**Figure 48.** Price and cost breakdown for ironbark region



**Figure 49.** EBIT per hectare for ironbark region



**Figure 50.** Significant trends in costs per LSU for ironbark region

**Table 6.** Summary of the ironbark region KPI's over a 10 year average, for the first five years and the second five years.

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
ROA	1.17	6.88	1.06	7.42	1.28	6.34
Asset Turnover Ratio	9.96	18.30	11.62	16.42	8.30	20.18
Gross Margin Ratio	32.50	55.57	34.10	56.92	30.90	54.22
Overhead Ratio	65.39	37.78	70.36	36.38	60.42	39.18
Finance Ratio	20.53	11.94	21.00	12.96	20.06	10.92
Expense Ratio	120.86	69.09	123.16	65.54	118.56	72.64

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
EBIT (\$/ha)	7.43	21.87	7.52	20.58	7.34	23.16
Production ROA	- 10.15	8.82	- 3.63	14.60	- 16.68	3.03
Plant Income Ratio	67.14	27.62	66.33	25.72	67.96	29.52
Meat Produced (kg/ha)	32.90	30.40	33.80	26.20	32.00	34.60
Gross Product	310,157.33	482,014.30	267,891.22	458,790.61	352,423.43	505,237.99
Average AU Managed	1,679.20	2,424.80	1,756.20	2,805.20	1,602.20	2,044.40
Area Available	7,148.45	10,292.22	7,224.56	11,773.30	7,072.34	8,811.14

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Meat Price (\$/kg)	1.56	1.58	1.38	1.35	1.73	1.81
Total Direct Costs (\$/kg)	0.52	0.36	0.41	0.26	0.63	0.46
Production GM (\$/kg)	1.05	1.33	1.00	1.23	1.09	1.43
Total Overheads (\$/kg)	0.82	0.54	0.76	0.52	0.89	0.57
Cost of Production (\$/kg)	1.35	0.90	1.17	0.77	1.52	1.03

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Overheads (%GP) - Buildings and Plant	11.95	7.46	12.32	7.57	11.58	7.35
Overheads (%GP) - Labour	7.53	6.74	7.20	7.04	7.86	6.43
Overheads (%GP) - Administration	7.68	4.92	6.94	4.65	8.42	5.20
Overheads (%GP) - Land	2.83	1.86	2.57	2.01	3.09	1.71
Overheads (%GP) - Land Maintenance	1.08	0.90	1.24	1.28	0.92	0.52
Overheads (%GP) - Land Leasing, Rent	2.81	5.23	2.96	2.54	2.66	7.93
Overheads (%GP) - Unpaid Labour	10.22	5.82	12.12	6.76	8.32	4.89

	10 Year Average		Years 1-5 Average		Years 6-10 Average	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
Meat Produced (kg/LSU)	105.70	116.70	100.60	107.80	110.80	125.60
Direct Costs (\$/LSU) - Supp and Fodder	17.48	12.29	14.51	9.68	20.45	14.90
Direct Costs (\$/LSU) - Labour	10.33	7.14	3.96	2.03	16.69	12.25
Direct Costs (\$/LSU) - Animal Health	6.92	6.13	4.74	4.04	9.10	8.22
Direct Costs (\$/LSU) - Agistment	4.95	2.47	2.98	1.27	6.92	3.66
Direct Costs (\$/LSU) - Freight and Selling	11.42	10.27	9.53	6.19	13.32	14.35
Total Direct Costs (\$/LSU)	53.79	41.00	37.30	24.65	70.28	57.35
Production GM (\$/LSU)	111.97	152.62	102.52	131.17	121.41	174.08
Total Overheads (\$/LSU)	86.03	63.11	73.62	54.55	98.43	71.67

## 3.4.5 Central Australia region

The raw data for central Australia (southern Alice Springs pastoral region) is shown in Table 7.

**Table 7.** Raw data for central Australia

Indicator	Top 20%	Average	Difference	
<b>FINANCIAL PERFORMANCE</b>				
Profitability (EBIT/LSU)	\$73.58	\$48.41	\$25.17	34.2%
Return to Assets Managed	6.38%	4.94%	1.44%	22.5%
Total Business Return	8.31%	5.00%	3.31%	39.9%
Price Received/ Kg Beef	\$1.38	\$1.39	(\$0.01)	(0.7%)
Cost of Production/ Kg Beef	\$0.74	\$0.92	(\$0.18)	(24.0%)
Operating Margin/ Kg Beef	\$0.64	\$0.47	\$0.17	26.2%
<b>PRODUCTIVITY</b>				
Average Stocking Rate (LSU/km <sup>2</sup> )	1.5	1.7	(0.2)	(14.6%)
Kg Beef/ Head Sold	423.8	384.0	39.8	9.4%
Kg Beef/ Breeder	316.8*	277.1	39.7	12.5%
Weaning Rate	61.0%	51.7%	9.3%	15.2%
<b>ENTERPRISE EXPENSES</b>				
Supplementary Feed (\$/LSU)	\$3.31	\$9.45	(\$6.14)	(185.4%)
Animal Health and Breeding (\$/LSU)	\$3.69	\$3.07	\$0.62	16.8%
Total Direct Costs (\$/LSU)	\$28.13	\$32.12	(\$4.00)	(14.2%)
<b>SCALE</b>				
Total Area km <sup>2</sup>	3,598	4,473	(875)	(24.3%)
Effective Area km <sup>2</sup>	2,922	3,278	(356)	(12.2%)
Breeders	2,148	2,786	(638)	(29.7%)
Total Cattle	5,353	6,791	(1,438)	(26.9%)
<b>OVERHEADS</b>				
Wages (employees and owner)	\$135,279	\$152,297	(\$17,019)	(12.6%)
Total Overheads	\$364,725	\$432,274	(\$67,550)	(18.5%)
<b>FINANCE COSTS</b>				
Gross cost of debt	7.32%	6.48%	0.84%	11.5%
After tax cost of debt	5.13%	4.54%	0.59%	11.5%
Equity		90.4%		

\*Note that kg/breeder figure is derived from the total kilograms of beef sold in that year divided by the average number of breeders carried in that year. At least five years of data are needed for this figure to be considered with some confidence.

The full mix of seasonal conditions are represented in these data starting with two of the best years in living memory, followed by a year of extensive wildfires then an average year, running into six years of below average rainfall and progressively worsening drought. This particular drought, in absolute rainfall terms is similar in severity to those of the 1960s and 1990s. The recovery from this drought is likely to further depress business performance as the fine line between herd build-up and adequate cash flow generation is followed. In the longer term then, the available data probably overstate regional performance.



The results from the businesses analysed are based almost exclusively on bullock production. Bullocks are grown out to approximately 600 kg live weight and sent to South Australia for slaughter. There is negligible selling into the northern live export trade and some producers support the annual show sale with token numbers of store weaners.

Overall, the most profitable herds in central Australia achieve the result through a lower cost of production and higher operating margin. The difference in price received between the most profitable herds and the average is almost negligible. The lower cost of production is being achieved through lower absolute costs, particularly overheads, and significantly more kilograms of beef being produced per breeder. This can be summed up simply as better overall operating efficiency. The difference in genetic merit between herds is not a significant profit driver and the overall result is almost exclusively management related. All herds are predominantly British breeds or British breed crosses.

The main business risks and issues to be addressed in central Australia are:

- Natural resource protection. Grazing land management based work done on the stations over the review period suggests that, on average, they are overstocked and there is either some ongoing degradation and/or remedial action and expense is mandated for long term sustainability.
- Economic sustainability. Modelling and analysis have shown that, on average, these businesses need to be running at least 35% more cattle to be sustainable in the long term. This is in direct conflict with the first point.
- Productivity per breeder. Modelling and analysis have shown that the pursuit of productivity gains will top out at an EBIT of approximately \$100/LSU (approximately \$200/breeder). Beyond that, further gains will not be cost effective. This gain will offer only a temporary reprieve in the economic sustainability area.
- Operating scale. Increasing operating scale is an option but the stations are already of such a size that a further increase is more likely than not to produce diseconomies of scale. As well, to increase scale, an owner has to buy an entire additional station (currently the NT government does not allow them to be split in this region) and this currently carries too much financial risk.
- In the longer term, the only way that these businesses will survive is to reduce the dependence on station income and build up off station investments, preferably outside of agriculture.
- Equity and after tax cost of debt. Holmes and Company recommend that the lower level threshold of safety for equity is 85%. At any level of equity below this, the amount of interest on the debt consumes too much of the available working capital. The average level of equity in central Australia is 90.4%. If the after tax cost of debt is greater than the return on assets (ROA) then it does not pay for that business to be carrying any level of debt. In central Australia the ROA does exceed the after tax cost of debt.

**Table 8.** Modelling results for central Australia

Central Australia	Increase 5% net reproductive rate	Decrease 5% breeder death rate	Increase 5% turn off weight	Total
Gross Revenue/LSU	\$32	\$67	\$7	\$111
Kg Produced/LSU	23	53	4	83

In all three tables showing the modelling results (Table 8, Table 10 and Table 12), the figures represent the expected increase over the base case. This analysis shows that decreasing the death rates of breeders in all age cohorts has the biggest impact on increased gross revenue/LSU. This makes intuitive sense as the breeder has cost a lot to get there in the first place and she is the reproductive engine. Note that the aggregated or total result is not a simple arithmetic summation of the individual variables. All three variables interact and there is a positive multiplying effect.

### 3.4.6 Pilbara region – Western Australia

The raw data for the Pilbara is shown in Table 9.

**Table 9.** Raw data for the Pilbara

Indicator	Top 20%	Average	Difference	
<b>FINANCIAL PERFORMANCE</b>				
Profitability (EBIT/LSU)	\$35.96	(\$0.18)	\$36.14	100.5%
Return to Assets Managed	3.78%	0.50%	3.28%	86.8%
Total Business Return	4.66%	(0.69%)	5.35%	114.8%
Price Received/ Kg Beef	\$1.40	\$1.44	(\$0.04)	(2.5%)
Cost of Production/ Kg Beef	\$0.97	\$1.31	(\$0.34)	(35.1%)
Operating Margin/ Kg Beef	\$0.43	\$0.12	\$0.31	71.6%
<b>PRODUCTIVITY</b>				
Average Stocking Rate (LSU/km <sup>2</sup> )	6.5	3.6	2.9	44.7%
Kg Beef/ Head Sold	319.8	296.9	22.9	7.2%
Kg Beef/ Breeder	255.5	256.9	(1.4)	(0.6%)
Weaning Rate	49.7%*	53.3%	(3.6%)	(7.2%)
Turnoff Age (Males)	NA	NA		
(Females)	NA	NA		
Surplus and Cull Females				
<b>ENTERPRISE EXPENSES</b>				
Supplementary Feed (\$/LSU)	\$3.75	\$6.72	(\$2.97)	(79.0%)
Animal Health and Breeding (\$/LSU)	\$3.56	\$3.95	(\$0.39)	(10.8%)
Total Direct Costs (\$/LSU)	\$23.95	\$51.46	(\$27.51)	(114.8%)
<b>SCALE</b>				
Total Area km <sup>2</sup>	4,010	2,737	1,273	31.7%
Effective Area km <sup>2</sup>	2,687	1,705	982	36.5%
Breeders	8,750	3,723	5,027	57.5%
Total Cattle	21,807	9,113	12,694	58.2%
<b>OVERHEADS</b>				
Wages (employees and owner)	\$627,242	\$306,043	\$321,199	51.2%
Total Overheads	\$1,554,950	\$698,636	\$856,314	55.1%

Indicator	Top 20%	Average	Difference	
<b>FINANCE COSTS</b>				
Gross cost of debt	6.93%	8.72%	(1.79%)	(25.8%)
After tax cost of debt	4.85%	6.10%	(1.25%)	(25.8%)
Equity		80%		

\*Note that the relatively low weaning rate in these data is a major constraint in the Pilbara. The difference in the overall result is not a function of this variable; it has more to do with operating scale in this case.

The first two years of data collection in the Pilbara were partial wet season failures and these had a severe impact on the results for the whole six years. As a region, the Pilbara is poorly productive with annual live weight gain restricted to about 100kg (P. Smith, pers. comm.). The region is now almost exclusively targeting the live export trade with the preferred product being 300kg steers. There is still some trucking of cattle south for slaughter but the 1400km freight expense is becoming less attractive over time. Surplus female sales have not made a significant contribution to revenue because most businesses are almost constantly affected by the build up required after failed wet seasons.

Overall, the main business risks and issues to be addressed in the Pilbara are:

- Climate risk. It is a priority to develop a robust failed wet season management strategy. A failed wet season costs the average business \$800K at the EBIT level over a number of years. At the present time, the management of this risk is ad hoc across the Pilbara. As well, there is a risk of flood damage resulting from severe cyclone activity. The frequency of these events is lower than the failed wet season and the cost comes in the form of replacement of infrastructure and cattle being swept out to sea.
- The majority of Pilbara businesses should be holding steers over for another year to walk onto the boat close to 400kg. This will result in fewer breeders being run, with the resulting reduction in operating expenses.
- Mustering costs are high because of the nature of the country. Permanent waterholes in creeks result in small mobs of breeders being scattered over a large area and the opportunity for trap mustering is limited and helicopters and fixed wings are relied on. About 20% of Pilbara stations have their own. For this reason, the majority of Pilbara stations only conduct one round of cattle processing and this lack of control of the herd is constraining productivity and profits. The other problem that this issue creates is that the annual mustering efficiency is likely to be close to 80% and therefore the total number of cattle being run is always understated and the net reproductive rate resulting from this is overstated. As well, lack of control is resulting in too many feral bulls siring calves with the predictable result.
- Selling costs are by far the highest in any region and the principal component of these is the freight. It is unclear just what is causing this and more work needs to be done before any remedial strategy can be developed.
- The geography of the country is resulting in very poor labour efficiency with only approximately 300 breeders and their followers per labour unit being achieved. In absolute terms the cost of labour is the highest of any region. This is a serious issue that should receive priority from managers and advisers.
- Individual breeder productivity is extremely poor and is coming from a combination of a low net reproductive rate, unacceptably high breeder death rates and low turnoff weights.
- Lack of operating scale is an issue for too many Pilbara stations, with the same principles described for central Australia being applicable in this region and being magnified by the lower productivity and profitability.
- Equity and after tax cost of debt. The average level of equity in the Pilbara is 80%. This is below the lower level of safety for equity limit. The total business return is (0.69%) and the after tax cost of debt is 6.1%. Clearly the majority of businesses in the Pilbara are economically unsustainable.

**Table 10.** Modelling results for the Pilbara

Pilbara	Increase 5% net reproductive rate	Decrease 5% breeder death rate	Increase 5% turn off weight	Total
Gross Revenue/LSU	\$30	\$60	\$4	\$107
Kg Produced/LSU	22	46	1	78

Modelling shows that a reduction in breeder death rates gives the best increase in gross revenue per LSU in this region as well. Overall, the outcome is not quite as good as for central Australia because the general principle is that the lower the base level of productivity is, the smaller the incremental gain will be for a fixed percentage change to each variable.

### 3.4.7 Katherine Region – Northern Territory

The raw data for the Katherine region is shown in Table 11.

**Table 11.** Raw data for the Katherine region

Indicator	Top 20%	Average	Difference	
<b>FINANCIAL PERFORMANCE</b>				
Profitability (EBIT/LSU)	\$12.11	(\$26.37)	\$38.49	317.7%
Return to Assets Managed	0.82%	0.36%	0.46%	56.1%
Total Business Return	4.47%	0.79%	3.68%	82.3%
Price Received/ Kg Beef	\$1.48*	\$1.62	(\$0.14)	(9.5%)
Cost of Production/ Kg Beef	\$1.18	\$1.69	(\$0.52)	(44.0%)
Operating Margin/ Kg Beef	\$0.30	(\$0.08)	\$0.38	125.2%
<b>PRODUCTIVITY</b>				
Average Stocking Rate (LSU/km <sup>2</sup> )	5.7	6.1	(0.4)	(6.9%)
Kg Beef/ Head Sold	388.2	344.4	43.8	11.3%
Kg Beef/ Breeder	214.4	233.6	(19.2)	(9.0%)
Weaning Rate	43.9%	40.1%	3.8%	8.7%
<b>ENTERPRISE EXPENSES</b>				
Supplementary Feed (\$/LSU)	\$36.23	\$43.10	(\$6.87)	(19.0%)
Animal Health and Breeding (\$/LSU)	\$5.91	\$7.03	(\$1.12)	(19.0%)
Total Direct Costs (\$/LSU)	\$65.59	\$75.77	(\$10.18)	(15.5%)
<b>SCALE</b>				
Total Area km <sup>2</sup>	707	895	(188)	(26.6%)
Effective Area km <sup>2</sup>	702	731	(29)	(4.1%)
Breeders	2,016	1,733	283	14.0%
Total Cattle	4,536	3,953	583	12.9%
<b>OVERHEADS</b>				
Wages (employees and owner)	\$77,005	\$128,334	(\$51,329)	(66.7%)
Total Overheads	\$221,343	\$424,966	(\$203,623)	(92.0%)
<b>FINANCE COSTS</b>				
Gross cost of debt	8.63%	5.66%	2.96%	34.4%
After tax cost of debt	6.04%	3.96%	2.07%	34.4%
Equity	NR	81.7%		

\*Note that the top 20% price received is less than average in the above data. This is usually a function of the animals being sold older and heavier for a discounted price. It can also be a function of more females being sold which lowers average price received. The operating margin is of more importance.

\*\*Note that many of the herds in this region are in build-up phase as more country is being developed. Closing inventory often has more breeders than opening which dilutes per breeder performance. This is an important issue when reviewing data of this nature. The stage the business is at in its development can have a significant impact on the reported business performance. This is one reason why trend data can be misleading. It may only be revealing a development trend, rather than an underlying industry or regional trend.

Almost all of the businesses represented in these data are spread between the north, east and west of Katherine and are therefore likely to be representative of a band of country approximately 300km wide extending from Cape York to the Kimberley. Not far south of Katherine, operating scale increases and corporate ownership appears. It is therefore likely that a cohort of businesses south of Katherine would produce a different result. The seasonal conditions for the years of data collection were average or above. As for the Pilbara, the principal market is the live export trade.

Overall the main business risks and issues to be addressed in the Katherine region are:

- This region was amongst one of the last regions to be developed for beef production in the Northern Territory for good reason. The high rainfall has leached most of the nutrients from the soil and it is a hot, wet and stressful environment for cattle.
- Producer perception is that 100% Brahman genetics are required for this region but because of the low productivity and profitability most bulls are purchased at the lowest possible price. This produces the worst possible outcome through the combination of the lower productivity of the pure Brahman and the lowest priced bulls.
- Direct expenses on the herd are higher than most regions, principally as a function of tick and fly control not seen in other regions, the need for both wet and dry season supplementation and mustering costs where trapping is not practical.
- Most businesses are under scale and profitability is constrained by the fact that overhead expenses are being carried by too few breeders.
- The problem with lack of scale is difficult to resolve because much of the country is close to Darwin and the real estate multiplier effect makes the purchase of land for beef production difficult.
- The region supplies the live export trade for cattle exclusively and this trade has the potential to constrain profitability unless producers are aware of the issue. The restraint comes from the fact that the preferred animal is light and when cattle are sold much below 350kg, the cost of production is rendered uncompetitive through too few kilograms being produced.
- Equity and after tax cost of debt. The average level of equity in the Katherine region is 81.7%. This is below the lower level of safety for equity limits. The total business return is 0.79% and the after tax cost of debt is 3.96%. As in the Pilbara, clearly the majority of businesses in the Katherine region are economically unsustainable.

**Table 12.** Modelling results for the Katherine region

<b>Katherine Region</b>	<b>Increase 5% net reproductive rate</b>	<b>Decrease 5% breeder death rate</b>	<b>Increase 5% turn off weight</b>	<b>Total</b>
<b>Gross Revenue/LSU</b>	\$26	\$73	\$5	\$116
<b>Kg Produced/LSU</b>	18	50	1	76

The only new comment that can be made about the above results is that the total figure for gross revenue has a stronger multiplier behind it than the other regions. This is coming from the price received which is the highest of any region. Conversely, this shows that price premiums cannot save beef businesses that have more serious underlying problems.

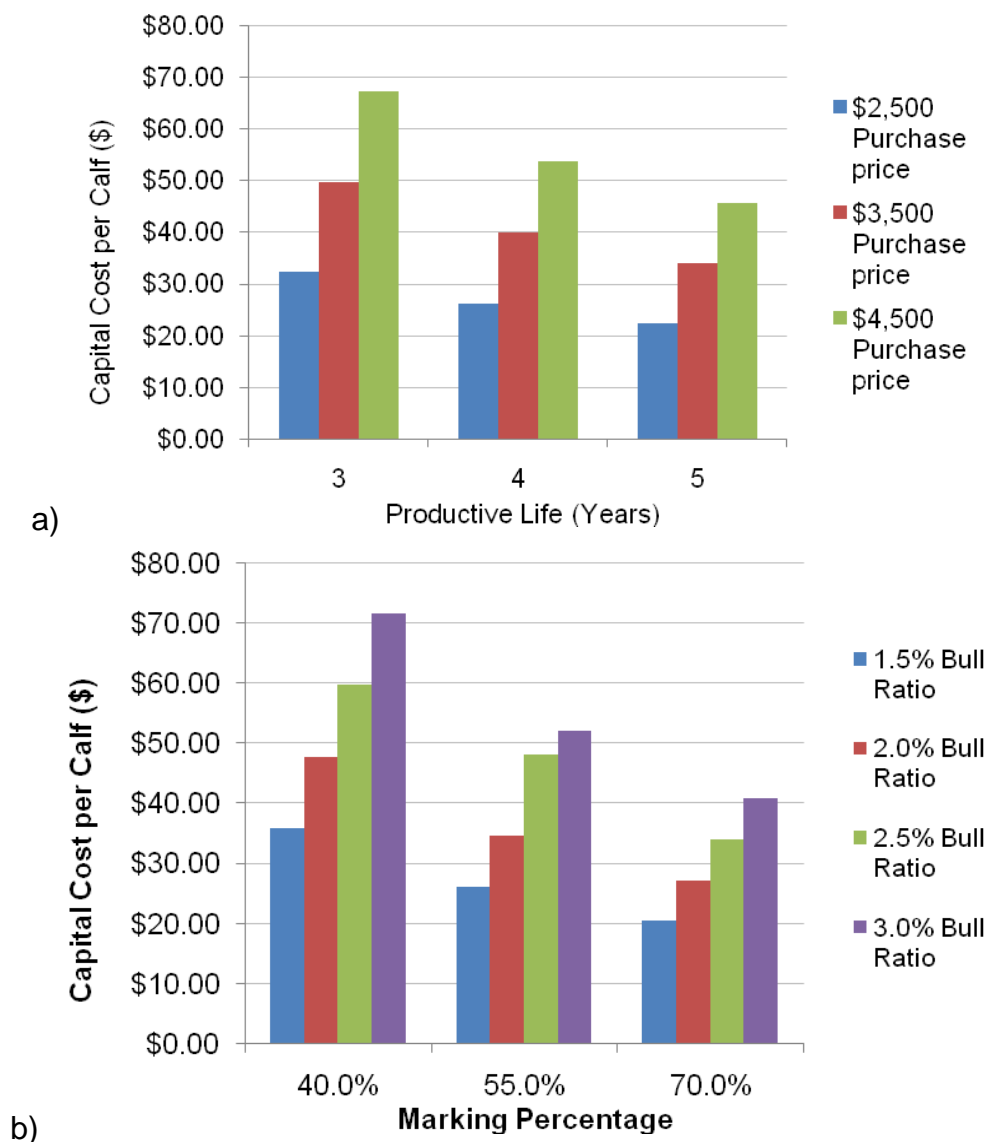
### 3.5 Production systems analysis

This analysis provides an insight into the different and unique factors influencing productivity and profit based on the type of production system that formulates the enterprise mix and business structure.

#### 3.5.1 Bull capital cost per calf

There are several influences on bull capital cost per calf, which in the data modelled and illustrated in Figure 51 below, created ranges from \$20 to \$70 per calf weaned. These include:

- The price paid for a bull.
- The bull ratio and length retained in the breeding herd, which is a management decision.
- The marking or weaning percentage, which is the outcome of management actions.



**Figure 51.** Capital cost of bulls per calf reared at a) different productive life spans and purchase prices, and b) different marking percentages and bull joining ratios

## 3.5.2 Specialist backgrounding and grass based finishing

**Table 13.** The effect of age of turnoff in a trading operation in the Brigalow region.

MEASURE	200 kg to 380kg LW	380 kg to 560kg LW	420kg to 600kg LW	380 kg to 600kg LW (Grain Assist)	200 kg to 600kg LW
GROSS MARGIN	\$180,908	\$78,734	\$65,047	\$26,061	\$100,722
GROSS MARGIN /head Sold	\$191.03	\$114.11	\$97.52	\$40.40	\$164.78
GROSS MARGIN /LSU Sold	\$180.98	\$78.78	\$65.06	\$26.01	\$136.13
GROSS MARGIN /head/week	\$3.65	\$2.18	\$1.86	\$0.77	\$2.31
GROSS MARGIN /LSU/week	\$3.48	\$1.52	\$1.25	\$0.50	\$1.93
GROSS MARGIN /LSU/Annum	\$181.94	\$79.24	\$65.45	\$26.17	\$100.55
GROSS MARGIN /ha/annum	\$45.23	\$19.68	\$16.26	\$6.52	\$25.18
DIRECT COST of GAIN (\$/kg)	\$0.53	\$0.74	\$0.79	\$1.22	\$0.53
Capital Invested in Landed Stock	\$361,760	\$464,980	\$490,233	\$434,830	\$529,514
Annualized Return on Capital	50.01%	16.93%	13.27%	5.99%	19.02%

*All scenarios assume a 4,000ha property, a stocking Rate of 1 LSU to 4ha and an annual ADG of 0.5kg/hd/day*

The modelled data in Table 13 illustrate that gross margin/ha drops significantly as the size of the animal increases. A management decision to grow or fatten large animals vs small animals will vary the gross margin from \$65/LSU sold to \$180/LSU sold. Taking into account the average recent overhead in the Brigalow region of \$97/LSU, this means that a property which trades large animals will be making a loss. This data explains why the Top 20% have shifted enterprise mix to trading and backgrounding smaller stock. The physiological reason for this is clear. The larger the animal, the larger the maintenance requirement will be, **i.e. maintenance does not contribute to profit**. As with grass finishing, assisting with protein and energy substitutes, will be most economical with young stock.

Grain (or protein) assisted finishing has the lowest gross margin. Its place in management is therefore likely to be to assist in turnoff time, especially in a trading scenario, e.g. where the growth rate is increased to allow turnoff in September/October so replacements can be bought at the same time on a low market.

## 4 Success in achieving objectives

This study highlights a worsening position with profitability and cashflow across the board in the northern beef industry. Based on ROA, capital is not well employed (comparative to bank interest or other investment options) due to inflated land values, which in many cases bear no relationship to productive capacity of the land. The expense ratio shows that the average Queensland beef producer has spent more than they earned in six of the last seven years.

A number of management and research issues have been identified in the following section. However there have been a number of items in the terms of reference which it has not been possible to address for a number of reasons. These include:

- A lack of data, e.g. NLIS costs are not specifically identified, heifer costs are not specifically identified.
- The lack of data is partly because these issues are not relevant for a producer to record as they are either outside the control of management or of little significance relative to major issues.
- There is a general lack of accurate on-property record keeping, as there is not a perceived value in putting time and effort into it, or there is simply no time for it. Training and assistance will go some way to correcting this. Identification of enterprises and management data is sorely lacking in the northern industry.
- Herd numbers and movement of numbers between enterprises are not precise enough to base accurate analysis at a very detailed level.
- Variation between properties, management styles, decision making possibilities, seasons, product demand, country type, scale etc, make modelling of many detailed analyses, quite irrelevant to the industry.
- Conventional reproduction rates are meaningless, due firstly to predominately uncontrolled mating, and secondly to a lack of accurate on-property data.



## 5 Current and future impacts on the livestock industry

### 5.1 Overall Queensland industry

The following indicators differentiate the top 20% across the board. It is just as important to note the things that the top 20% are NOT.

What this study points to is that the top 20% focus on profit, as opposed to productivity. It is not that productivity is not an important element in profitability, but the data indicate that the quality of strategic and management decisions around overheads and scale are paramount in determining profitability. This section makes reference to the innovators and leaders in the regions based on knowledge of what RCS clients with strong financial performance have implemented in order to have that degree of profitability.

**Table 14.** Features and non-features of the Top 20%

Feature	What the top 20% have	What they do NOT have
4% to 6% higher ROA	Lower OH ratio Higher asset turnover ratio Higher gross margin ratio Expense ratio < 100%	Much higher prices
Lower cost of production	Lower cash OH/LSU Lower direct costs/LSU Higher gross margin/LSU Slightly lower stocking rates Higher productivity/LSU	More beef production/ha Higher stocking rates
Larger scale	Almost twice the gross product 2,565 more LSU per business Double the land area	More unpaid labour subsidy

Scale has proven to be an overriding determinant of profitability and this is primarily due to ever increasing overheads. The analysis showed that for the 2005/06 to 2007/08 period approximately 2,400 LSU were required to dilute overheads to level below \$80/LSU.

This does not mean that business with low herd numbers (e.g. 500 to 1,000 LSU) cannot be profitable, and there are many examples of well run businesses of this scale in the top 20%. Those managers focus on profit, contain their overheads and have good land management, effective animal production and correct enterprise mix.

**Table 15.** Regional Comparisons (whole of periods available)

Indicator	Katherine NT***	Northern Qld*	Pilbara WA**	Mitchell Qld*	Central NT*	Brigalow Qld*	Ironbark Qld*
ROA (Average )	0.36%	2.87%	0.50%	5.10%	4.90%	1.98%	1.17%
ROA (Top 20%)	0.82%	7.91%	4.70%	10.45%	6.40%	7.73%	6.88%
CoP (Average)	\$1.69	\$0.91	\$1.31	\$0.93	\$0.92	\$1.10	\$1.35
CoP (Top 20%)	\$1.18	\$0.73	\$0.97	\$0.66	\$0.74	\$0.76	\$0.90
Meat Price/kg (Average)	\$1.62	\$1.40	\$1.44	\$1.50	\$1.39	\$1.55	\$1.56
Meat Price/kg (Top 20%)	\$1.48	\$1.41	\$1.40	\$1.56	\$1.38	\$1.58	\$1.58

\* 10 year data average

\*\* 5 year data average

\*\*\* 3 year data average

Table 15 summarises the overall indicators averaged over their periods of study. The returns and COP clearly reflect the effect of quality of the primary land resource. The exception is the Brigalow country, which on these comparisons, is overpriced relative to Mitchell and central Australia. The difference in COP from the Katherine region to the northern Queensland region is

primarily due to large differences in land types and scale. The northern data set for Queensland consists mainly of businesses in the more eastern parts of the region with few businesses from the gulf region analysed.

The glaring omission in the data to this point is the belt of corporate owned country across the Barkly Tableland and Victoria River district. The only data available on that is the AA Co annual reports which show annual ROA as shown in Table 16.

**Table 16.** AACo annual ROA (Stockdoctor 2009)

	2002	2003	2004	2005	2006	2007	2008
<b>ROA</b>	14.95%	5.30%	4.90%	2.30%	0.14%	0.44%	-3.98%

Table 16 indicates the corporate sector has not been immune to the overall industry trends. The average ROA for all data is not different between the northern, Mitchell and ironbark regions, with only 0.46% variation. The Katherine region and Pilbara were the worst two regions where average ROA was under 1%. The northern region has the highest available hectares, average LSU and consequent gross product. The average cost of production is also the lowest in the northern region for all data at \$1.08/kg; however the Mitchell region has the lowest cost of production for the top 20% at \$0.68/kg produced. Noticeably the lower price received (average of \$1.57/kg) and beef produced (average of 83kg/LSU) for the northern Queensland region results in the lowest gross margin per LSU of all regions.

The Mitchell region, with the top 20% figures for ROA (9.34%), cost of production (\$0.68/kg), meat produced (199kg/LSU) and gross margin (\$269/LSU), shows the extremely high capability of the region in good rainfall seasons. Central Australia is similarly affected.

Overhead costs per LSU are highest in the brigalow and ironbark regions. These two regions also have the lowest available hectares, consistent with the discussion surrounding Figure 27, Figure 28 and Table 2.

Expense ratios for all data is alarming in all regions but especially so in the Brigalow and ironbark regions. The comparatively high finance ratio, coupled with the low ROA in all regions, indicates an unsustainable gearing level in a high proportion of beef industry enterprises. Average cost of production is increasing to a level where further price reductions will cause substantial hardship in the industry.

**Table 17.** Regional comparison of some major key performance indicators in Queensland

**Average results for financial years 2003/04 to 2007/08**

KPI	Northern		Mitchell		Brigalow		Coastal	
	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%	All Data	Top 20%
ROA (%)	1.74	5.48	3.10	9.34	1.50	5.90	1.28	6.34
Asset Turnover Ratio	9.28	11.80	10.24	17.42	9.90	15.30	8.30	20.18
Gross Margin Ratio	27.72	45.74	26.84	67.04	36.90	54.94	30.90	54.22
Overhead Ratio	46.68	28.88	45.08	26.80	53.64	31.00	60.42	39.18
Finance Ratio	18.16	18.28	10.78	14.64	20.32	12.62	20.06	10.92
Expense Ratio	96.66	69.94	93.94	57.08	107.88	63.62	118.56	72.64
Gross Product (\$)	790,803	1,434,613	399,388	575,801	452,399	688,957	352,423	505,238
Average LSU Managed	5,963	9,767	2,097	1,731	1,733	2,456	1,602	2,044
Area Available (ha)	42,071	61,030	20,246	17,589	7,699	9,296	7,072	8,811
EBIT (\$/ha)	6.61	11.13	6.50	26.58	16.37	39.85	7.34	23.16
Meat Price (\$/kg)	1.57	1.54	1.70	1.78	1.74	1.81	1.73	1.81
Cost of Production (\$/kg)	1.08	0.88	1.20	0.68	1.23	0.88	1.52	1.03
Meat Produced (kg/LSU)	83.20	86.80	113.60	199.60	133.20	150.80	110.80	125.60
Overheads per LSU (\$)	44.98	39.59	73.49	74.40	97.19	70.47	98.43	71.67
Gross Margin per LSU (\$)	84.45	109.21	138.99	268.45	158.48	212.46	121.41	174.08

## 5.2 Northern breeder herd (Queensland, NT and Pilbara)

The northern breeding properties are finding it increasingly difficult to make a profit. This is considered to be due to several factors. These are:

- Increasing overheads (e.g. labour, vehicles, fuel)
- Lack of productivity gain to compensate for increasing overheads (e.g. very low reproductive rates [and there is anecdotal evidence that it has actually declined over the last thirty years (McCosker and Eggington 1986), low weaning weights])
- Increasing direct costs (e.g. freight, supplements)
- Breeder death rates in NT and WA. The Queensland data did not indicate the same problem.
- A discount for Brahman stores (as opposed to British/European crosses), while still needing to retain a high grade Brahman cow herd.
- Possible diseconomies of scale (not being able to get timing and husbandry precise).
- The 2008 drought and the 2009 floods have created more hardship than is evident in these figures for north Queensland. The full effect of these events will become evident in subsequent years of analysis.
- A period of rising interest rates, lowering equity (banks are reducing valuations) and declining cattle prices will put significant pressure on the average producer in the extensive breeder region and a steady decline in the reproductive efficiency of the extensive Brahman breeder herds. This decline is evidenced by an increase in the body weight of heifers required to achieve 80% conception (from 300kg to 360kg).

Generally, the northern herd has adequate scale through to a scale that is too big. Its primary needs are therefore a focus on breeder productivity. Leaders are doing a large number of things to bring profitability back into their businesses. These include:

- Herd segregation based on annual pregnancy testing.
- Controlled and defined calving periods.
- Early and timely weaning to maintain cow body condition score.
- Selecting bulls based on inter-calving interval of the dam.
- Targeting supplementation programmes to segregated herds for greater efficiency and lower costs.
- Production feeding weaners.
- Using Mitchell grass downs properties to wean onto.
- Improving waters and fencing for rotational grazing.
- Cross breeding or using composites (but there is a danger in this if cow body weight increases).
- Using low stress stock handling techniques.
- Using dogs to reduce labour and increase control of stock.
- Focussing on heifer mating and calving weights
- Matching stocking rate to carrying capacity

It is therefore generally known what will increase profit in this region. The constraints to change are social pressures, capacity to change (both managerial and financial) and economic but it is likely that a period of economic hardship will bring about some change in those with the capability and financial capacity.

If we were to pick one area of focus to bring about long term production change, it would be to encourage the Brahman stud industry to focus on reducing inter-calving interval and mature cow size and encourage the commercial industry to understand its importance.

The overall situation for the northern breeder herd and the functions of profit can be summarised as follows:

<b>Profit</b>	= <b>(fn)</b> ATO, OH and <u>GM</u>
<u>GM</u>	= <b>(fn)</b> price received, direct costs and <u>productivity</u>
<u>Productivity</u>	= <b>(fn)</b> reproduction rate and mortality
Reproduction/mortality	= <b>(fn)</b> <u>body condition score</u> , genetics and disease
<u>Body condition score</u>	= <b>(fn)</b> nutrition
Nutrition	= <b>(fn)</b> stocking rate to carrying capacity, infrastructure and supplements
SR:CC, infrastructure and supplements	= <b>(fn)</b> <b>management decisions</b>

(Adapted from RCS GrazingforProfit School)

The above diagram only follows the gross margin route to profit, and then only the productivity route, as this is the key weakness in the extensive northern breeder herd. Productivity has been restricted to reproduction and mortality. Both of these are a function of body condition score, genetics and disease. Producers who allow stock to die in the paddocks, as a result of inadequate feed or disease control, should not be in the livestock industry. We are therefore more interested in the low reproduction rates. Body condition score is the overriding influence on conception, which is mostly a function of nutrition. However nutritional stress is most sensitive to stocking rate exceeding carrying capacity. This can be caused by overgrazing, overstocking, incorrect or inadequate supplementation, poor water distribution, poor stock control or fire etc. A contributing factor to overstocking is increased body weight and the resultant increase in feed requirements per head.

The bottom line is inadequate management. This in itself could be due to inadequate finance, tradition (paradigms), ignorance, incompetence, poor profitability or lack of knowledge.

Unfortunately, this choice of outcomes and causes, becomes a circular problem i.e. low herd performance leads to low productivity which makes it harder to invest in the knowledge, time and infrastructure which are likely to increase productivity.

### 5.3 Mitchell Downs, Mulga Country and Central Australia

These regions have fared better than all others in terms of ROA, however unreliable rainfall creates difficulties in management. The Mitchell grass country in Queensland is generally being used for its most productive use, i.e. backgrounding young or light stock. With rain there appears to be very few limitations to this country being utilised by its dominant enterprise.

Innovators in Queensland are:

- Capping bores, doing away with bore drains and setting up good reliable troughed water systems.
- This allows further innovation with fencing and grazing management.
- Intensive grazing management has allowed carrying capacity to double from a starting carrying capacity of 9-11SDH/100mm to a current carrying capacity 20-22SDH/100mm (RCS unpublished data)<sup>5</sup>
- Destocking when there is no feed.
- Improving handling facilities (usually upgrading from sheep yards)
- Using water medication or dry licks to get productivity gains in the dry season.
- Fencing to control kangaroo numbers and feral goats

In the broken downs, pulled scrub and mulga country which forms part of this region, rainfall reliability is also a driver of profit, much the same thing is happening. However there are some additional issues. These include:

- The effect of unreliable seasons on breeding herd maintenance. This is causing a shift away from breeding into more trading, agisting and backgrounding.
- Regrowth control is an issue.
- Kangaroo control to reduce stocking rate and allow pastures to rest is the biggest problem in the south west and west. In many regions of south-west Queensland, Kangaroos are possibly the largest contributor to land degradation and business losses. Producers through south west Queensland are now erecting kangaroo restricting fences around their boundaries at considerable cost, in order to reduce grazing pressure to allow sufficient scale of domestic livestock to generate a profit.
- Rabbits are also re-emerging as an issue in south and south west Queensland.

### 5.4 Brigalow / Bothriochloa region:

High land prices, escalating overheads and peaking productivity gains are making what is generally considered to be our most productive country, close to unviable for the average producer. Added to this are the political issues of land clearing and regrowth control, which may significantly lower productivity.

The innovators in this region are:

- Improving water systems.
- Fencing and using more sophisticated grazing management systems.
- Improving yard and handling facilities.
- Using low stress stock handling techniques.
- Supplementing with urea.
- Using dogs to reduce labour requirements.
- Backgrounding young, small cattle.
- Planting leucaena and grazing it effectively.

<sup>5</sup> Not all businesses that have employed this intensive management have continued to benchmark.

The issues for this region largely revolve around scale constraints and peaking productivity gains. The average producer, who is constrained by scale, cost of land and capital, has little option other than to focus on productivity gains. The traditional avenues of developing the land through clearing, blade ploughing and improved pastures, have peaked on an industry scale. Pasture productivity and ground cover also appear to be in decline as producers respond to the pressures by attempting to run more stock than the land is capable of supporting, which is a historical trend when scale limits economic performance. Therefore new ways of achieving growth need to be found otherwise the bottom half (small scale) of this segment will have to be subsidised by off farm income. Other ways of achieving growth include:

- Water and fencing development to facilitate intensive grazing systems which will lift carrying capacity.
- Planting leucaena to increase growth rates.
- Ensuring the enterprise mix is the most profitable as opposed to the traditional one.
- Constraints include:
- Lack of land leasing opportunities.
- A drier seasonal cycle throughout this region and a medium to long term trend of lower rainfall.
- Animal performance from leucaena is frequently reported as below expectations.
- The politics of land clearing and regrowth control.

## 5.5 Ironbark region

The overall lack of scale for producers in the ironbark region, coupled with low productivity, has reduced the ability to diffuse costs and led to the average producer spending more than they are earning from the beef business each year. External sources of income have become more common and necessary. Businesses without scale and external income are struggling to maintain equity.

The innovators in this region are:

- Implementing grazing systems to improve the pasture composition and maintain higher feed quality.
- Analysing their enterprises, and given the constraint of scale, running animals and enterprises with the highest available gross margin per hectare.
- Turning off younger animals and thus reducing the quantity of feed available going into animal maintenance as opposed to production
- Making good use of the trading opportunities presented by the relatively shorter distance to varying saleyards and other producers.
- Shortening breeding seasons.
- Targeting supplementation.
- The major issues include:
- Increasing cost of land particularly driven by the increase in 'lifestyle' blocks with city dwellers purchasing blocks with easy access to populated areas.
- The lack of scale and consequent difficulty in increasing scale due to land prices and cost of production in the region.
- Poorly managed breeding systems.
- Inappropriate enterprise selection.
- Poor utilisation of feed, particularly with speargrass country and burning regimes.

## 5.6 Northern Territory and Western Australia

Whilst there are issues specific to each region in these data, there are important common issues that are likely to have widespread applicability across the northern Australian rangelands:

- Relatively poor productivity per breeder
- Lack of operating scale in many businesses

The first two issues are intertwined in that the higher the productivity per breeder, the less of an issue operating scale becomes and vice versa. Because it is less expensive to address productivity per breeder than to increase operating scale, it is breeder productivity that should be addressed first and receive capital allocation priority.

Modelling shows that in the extensive rangelands of northern Australia, the focus should be on the reduction in breeder death rates, if improved revenue per LSU is the goal. Although this is not a new finding, it is perhaps true that these data have been able to quantify the effect by region for the first time. This is important, because without the benefit being quantified, it is impossible to conduct an accurate cost/benefit analysis testing various options.

Overall, the extensive rangelands of northern Australia have beef production systems and businesses that are poorly productive and have poor or non-existent profitability. The majority of beef production businesses in northern Australia are not economically sustainable.

## 5.7 Identifiable threats

There are a number of threats to the beef industry as we know it today. These include:

- Very large chunks of the northern beef industry are currently unviable or unsustainable under current trends and prices.
- Downward pressure on land prices, which is necessary to bring some sanity into the ROA's, has a downside which is to put more pressure on equity and working capital.
- The constraints imposed on profitability by increasing overheads and an inability to spread them over more units because of scale limitations. This trend will continue to marginalise many producers who will turn to off-farm income to support their business.
- The chronic problems with reproduction in the northern and ironbark herds must be addressed urgently. If not, the price of young stores will continue to rise to where it also puts a lot more pressure on the backgrounding and fattening enterprises.
- Land degradation as a result of stocking rates exceeding carrying capacity as producers attempt to overcome the overhead and scale problems by increasing numbers, is likely to be a continuing threat.
- The politics of tree clearing are a significant threat to the long term viability of properties with a regrowth issue.
- The introduction of an emissions trading scheme will immediately impact overheads for all businesses, further exacerbating the overhead and scale problem. It will lead to higher fuel, electricity and transport costs, whether agriculture is in or out. Input costs are expected to increase by 0.8% to 1.3% up to 2015, and 2.5% to 3.5% after 2015 (Mick Keogh pers. comm. MLA Meat Profit Day Roma 2009).
- The significant rise in the cost of the two most important supplement ingredients, urea and phosphorus and talk of "peak phosphorus" in the world, have potentially devastating effects on production especially from the extensive northern breeder herd.
- Attitude and ignorance of what can be done with existing knowledge are joint constraints on progress.

## 6 Conclusions and recommendations

### 6.1 Primary conclusions

- Many producers have economically survived recent years on increasing land prices and borrowings, and as a consequence have been in the real estate business. Land prices now are reducing or at best levelling. Businesses now need to be able to support current debt levels (associated with the high land prices) from the production business alone.
- A cultural change from cattleman to business person is therefore required in the industry. The majority of the industry is oblivious to their businesses economic performance and the necessary conditions for profit maximisation.
- The research shows that cost minimisation is a necessary but not sufficient condition for profit maximisation amongst the enterprises studied.
- Enterprises which maximised profit, did not rely on price received, had slightly higher production per stock unit, had lower stocking rates, significantly higher gross margins and significantly lower overheads in the business. The major issues facing the industry include:
  - Inadequate scale in the more closely settled areas.
  - Significant cost escalations in overheads (up 54%) and direct costs (up 150%) over ten years.
  - Doubling of debt per LSU over the last decade.
  - ROA has declined to very low levels of around 1 to 2% on average.
  - Problems with reproduction in the extensive breeder herd.
- The leaders in each region are making returns comparable to bank interest as a ROA but are generally not matching borrowing rates.
- Approximately half of all cattle producers have been spending more than they earn for six of the last seven years, indicating the northern beef industry is generally in a very unprofitable and unsustainable state.

### 6.2 Recommendations for beef producers

- Analyse the business to understand where the issues are in terms of turnover, overheads and gross margin. Identify the primary driver that will most impact on profit and see what can be changed.
- After analysing the business, develop strategies to overcome weaknesses specific to your business before it is too late.
- Understand the implications of attempting to lift stocking rate above the carrying capacity. Focus firstly on what can be done to sustainably lift carrying capacity.
- In the extensive breeder regions, renewed focus on heifer management, breeder performance and bull selection based on inherent fertility is imperative.
- Lift the standard of management and control specifically in the areas of environmental management and herd biology. Planting pastures, clearing, genetics and nutrition cannot always be used to overcome poor standards of management in these two areas.
- Continue to develop skills and knowledge and have an open attitude towards change.
- Be strategic in bull selection and purchasing to ensure their selection pressure matches the pressure you are placing on your own breeding system.

### 6.3 Recommendations for RD&E

- Change the focus in the institutions and industry from production to profit.
- Urgently influence the focus and output of the stud industry to dramatically lifting inherent fertility.
- Determine if possible to establish genetic markers for degree of lactational anoestrus and/or days to calving.
- Urgently determine if there are significant diseases and unidentified nutritional issues in the northern cow herd.
- Collect data on the effect of stocking rate (in the commercial world, not in experiments), on reproduction rates.



- Urgently attempt to partition the influences of genetics (mature weight of cows, lactational anoestrus etc), nutrition (are there any effects from unrecognised deficiencies) and timing of activities (controlled mating, mob segregation etc vs continuous mating and cattle harvesting). This is needed to organise effective and targeted extension programmes.
- There is no time for a “research” approach to the problems in the northern herd. We recommend a consultative and workshop approach to identify existing data and trend data (where available) to provide leads and focus areas for future research and recommendations. Existing data is in the form of early cash cow project data, information held by some northern vets, innovative producers who have measured what they have done, consultants, experienced northern scientists, supplement manufacturers etc.
- Review and extend existing kangaroo and rabbit control strategies. Producers through south west Queensland are now erecting kangaroo restricting fences around their boundaries at considerable cost, in order to reduce grazing pressure to allow sufficient scale of domestic livestock to generate a profit.
- There are very few extension agents, consultants and economic professionals available to guide the northern grazing industry through a paradigm shift of production focused work to growing profit. Greater effort is required by service delivery agents to integrate their efforts through collaborate projects that have the necessary skill sets to deliver systems based development and extension programs. The CQ and northern beef projects are an example.
- Analyse, benchmark and seek to continue to build management skill and capability.

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## 8 Glossary/definition of terms

<b>ADG</b>	Average daily liveweight gain
<b>All data</b>	Where used in reference to Profit Probe™ results it refers to the information for the entire analysis group for that region or group
<b>ATO</b>	Asset turnover: Equal to gross product / agricultural assets x 100
<b>COG</b>	Cost of gain: Costs incurred to produce additional liveweight gain. Commonly used to analyse the profitability of short term management decisions such as supplementing or production feeding
<b>COP</b>	Cost of production: generally expressed in \$/kg. Equal to [direct costs + overhead costs] / [closing total kg + kg sold <i>minus</i> kg purchased <i>minus</i> opening total kg]
<b>Direct costs</b>	Those costs which vary year to year depending on the number of animals run e.g. freight, supplements, animal health etc. (compare to OH)
<b>EU</b>	European Union
<b>Expense ratio</b>	Equal to [direct costs + overhead costs + interest and other leases] / gross product
<b>Finance ratio</b>	Equal to [interest and equipment leases] / gross product
<b>FTE</b>	Full time equivalent: One labour unit based on 48 weeks work
<b>GM</b>	Gross margin: Equal to gross product minus direct costs
<b>GM ratio</b>	Gross margin as a percentage of gross product
<b>Gross product</b>	Equal to [closing stock inventory + sales] minus [opening stock inventory + purchases]
<b>GST</b>	Goods and services tax
<b>ha</b>	Hectare
<b>kg</b>	Kilogram
<b>km<sup>2</sup></b>	Square kilometre, is equal to 100 hectares
<b>KPI</b>	Key performance indicator
<b>LSU</b>	Large Stock Unit: Equivalent to one 400kg steer with zero live weight gain
<b>MLA</b>	Meat & Livestock Australia
<b>NEP</b>	Nett economic profit
<b>NLIS</b>	National livestock Identification System: Mandatory system of monitoring livestock movements on an individual basis
<b>OH</b>	Overhead costs: Those costs which mostly stay the same year to year e.g. rates, administration costs etc. (compare to direct costs)
<b>OH ratio</b>	Overhead costs as a percentage of gross product
<b>Plant income ratio</b>	Equal to average plant and equipment value / gross product
<b>RCS</b>	Resource Consulting Services
<b>ROA</b>	Return on assets: EBIT (based on gross product) / closing agricultural assets
<b>SDH/100mm</b>	Stock days per hectare per 100mm precipitation received: standardised measurement of stocking rate and carrying capacity; determines the number of LSU that can/have been run on one hectare for one day for each 100mm precipitation received/expected
<b>Top 20%</b>	Data associated with the top 20% of businesses ranked according to ROA

## 9 Appendices

### 9.1 Appendix 1 – Excerpts from Sample Profit Probe™

Project: Profit Probe Benchmarking

Property: Sample Cattle

Period: Jul08-Jun09

Property Area		Flow Of Funds		
Property Area	24,000 ha			
+ Avg Lease Area	-500 ha			
- Land Not Available	0 ha			
<b>Avg Available Area</b>	<b>23,500 ha</b>			
		<b>Opening</b>	<b>Closing</b>	<b>Value / ha</b>
		<b>(Jul08)</b>	<b>(Jun09)</b>	
<b>1. Balance Sheet</b>				
Land		\$2,450,000	\$2,462,250	\$102.59
Livestock Inventory		\$1,571,385	\$1,608,920	\$67.04
Other Production Assets		\$19,778	\$124,569	\$5.19
Plant & Equipment		\$236,055	\$370,939	\$15.46
Other Current Assets + Super Non-Farm		\$388,637	\$447,056	\$18.63
		\$614,005	\$625,445	\$26.06
<b>A. TOTAL ASSETS</b>		<b>\$5,279,860</b>	<b>\$5,639,179</b>	<b>\$234.97</b>
Short Term Loans		\$9,794	\$0	\$0.00
Long Term Loans		\$200,000	\$200,000	\$8.33
Non Farm		\$0	\$0	\$0.00
Leases and Other Loans		\$29,517	\$0	\$0.00
<b>B. TOTAL LIABILITIES</b>		<b>\$239,311</b>	<b>\$200,000</b>	<b>\$8.33</b>
<b>NET WORTH (A-B)</b>		<b>\$5,040,549</b>	<b>\$5,439,179</b>	<b>\$226.63</b>
<b>EQUITY RATIO</b>		<b>95%</b>	<b>96%</b>	
<b>2. Net Flows</b>				
		<b>Based on</b>	<b>Based on</b>	
		<b>Cash</b>	<b>Gross Product</b>	
<b>Gross Product</b>				
Cattle Income		\$389,765	\$389,765	
+ Other Production Income		\$0	\$0	
+ Closing Inventory		N/A	\$1,608,920	
<b>a. Gross Income</b>		<b>\$389,765</b>	<b>\$1,998,685</b>	
Purchases		\$98,494	\$98,494	
+ Opening Inventory		N/A	\$1,571,385	
<b>b. Cost Of Sale</b>		<b>\$98,494</b>	<b>\$1,669,879</b>	
<b>PRODUCTION GROSS PRODUCT (a-b)</b>		<b>\$291,271</b>	<b>\$328,806</b>	
+ Other (Non-Production) Income		\$23,703	\$23,703	
<b>C. TOTAL GROSS PRODUCT</b>		<b>\$314,974</b>	<b>\$352,509</b>	
<b>Expenses</b>				
<b>Direct Costs</b>				
Freight and Selling		\$52,412	\$52,412	
Supplements & Fodder		\$31,882	\$31,882	
Labour		\$3,600	\$3,600	
Animal Health		\$2,385	\$2,385	
Unpaid Labour		\$0	\$10,500	
Other		\$0	\$0	
<b>a. Total Direct Costs</b>		<b>\$90,279</b>	<b>\$100,779</b>	
<b>Overheads</b>				
Administration		\$33,159	\$33,159	
Buildings & Plant		\$29,550	\$29,550	
Land		\$11,031	\$11,031	
Land Maintenance		\$1,152	\$1,152	
Labour		\$10,014	\$10,014	
Other		\$0	\$0	
Unpaid Labour		\$0	\$89,500	
Drawings, Stores & Rations and Other		\$51,852	\$0	
Depreciation		\$0	\$23,958	
<b>b. Total Overheads</b>		<b>\$136,758</b>	<b>\$198,364</b>	
<b>c. Land leases (rent) payment</b>		<b>\$6,520</b>	<b>\$6,520</b>	
<b>D. TOTAL EXPENSES (a+b+c)</b>		<b>\$233,557</b>	<b>\$305,663</b>	
<b>E. CASH FLOW OR EBIT (C-D)</b>		<b>\$81,417</b>	<b>\$46,846</b>	
Interest and other leases		\$15,176	\$15,176	
<b>BUSINESS PROFIT (E - interest and leases)</b>		<b>\$66,241</b>	<b>\$31,670</b>	
<b>Other Financial Information</b>				
Non-farm income			\$76,849	
Subsidies received			\$0	
<b>Taxation paid</b>			\$4,105	
Capital expenditure (incl. principle on loans) & property developmen			\$404,277	
Sale of capital items			\$88,113	

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Prepared by: RCS

Printed: 03-Nov-09

Project: Profit Probe Benchmarking

Property: Sample Cattle

Period: Jul08-Jun09

## Key Performance Indicators

Analysis Group:		RCS Main Database				
Number in Group:		75				
Measure	Ranking in Group	Jul08 - Jun09	3-Year Avg	Top 20% Avg	Group Avg	Benchmark
<b>(1) Profitability (economics)</b>						
ROA (%)	45 of 75	0.9	-	7.8	1.9	6.5
Land ROA (%)	63 of 69	0.9	-	4.5	4.5	5.2
Production ROA (%)	18 of 75	1.0	-	14.2	-10.6	14.4
EBIT (\$/ha)	50 of 75	2.0	-	32.8	12.6	20.2
Asset Turnover Ratio (%)	30 of 75	7.0	-	19.4	8.8	15.9
Gross Margin Ratio (%)	52 of 75	32	-	54	39	54
Overhead Ratio (%)	51 of 75	58	-	29	52	30
<b>(2) Productivity</b>						
<b>Cattle - Meat</b>						
Meat Produced (kg/ha)	57 of 72	11.3	-	37.0	36.0	42.0
Break Even Costs (\$/kg)	25 of 71	1.13	-	0.92	1.16	0.93
Meat Price (\$/kg)	67 of 70	1.32	-	1.67	1.57	1.64
Meat Costs (\$/LSU )	7 of 72	94	-	133	138	105
Meat Gross Margin (\$/ha)	57 of 72	3.4	-	23.0	12.8	15.0
<b>(3) People</b>						
Gross Product (\$/FTE)	52 of 75	167,529	-	338,101	241,535	365,550
LSU Managed / FTE	20 of 73	1,511	-	838	1,025	1,331
Training (days/FTE)	22 of 75	14.5	-	11.3	8.6	9.5
Holidays (days/FTE)	34 of 75	14.5	-	16.3	15.9	17.6
<b>(4) Pecuniary (finance)</b>						
Finance Ratio (%)	15 of 75	4	-	16	22	15
Expense Ratio (%)	34 of 75	91	-	71	107	69
<b>(5) Property</b>						
LSUdays/ha/100mm rain	64 of 71	4	-	23	16	24
Ecological State Index (0=poor,100=good)	24 of 75	58	-	47	52	46
Ecological Trend Index (<0=declining,>0=im	66 of 75	-0.50	-	3.63	4.41	2.87
Average LSU Managed	14 of 75	3,180	-	1,861	2,215	2,928
Energy Costs (\$/ '000\$ income)	18 of 75	7.88	-	35.67	21.79	24.83

Project: Profit Probe Benchmarking

Property: Sample Cattle

Period: Jul08-Jun09

## Gross Margin and Turnover for Cattle (Meat)

Farm Area (ha):		23,500	as % of Gross Product:		93.28%		
Effective Area (ha):		23,500	Cattle Meat Weight Produced (kg):		264,394		
Animals (LSU):		3,180					
Measure	Your Business Results			Group Results \$/kg		Group Results \$/LSU	
	\$	\$/kg	\$/LSU	Top 20%	Average	Top 20%	Average
<b>GROSS PRODUCT - GP</b>	328,806	1.24	103.40	1.62	1.60	236.35	189.66
<b>This is made up of...</b>							
Animal Sales Income	384,669	1.45	120.97	1.87	2.14	271.93	254.37
+ Milk Sales Income	0	0.00	0.00	0.00	0.00	0.00	0.00
+ Wool/Fibre Sales Income	0	0.00	0.00	0.00	0.00	0.00	0.00
+ Change in Livestock Inventory	37,535						
+ Agistment Income	5,096						
- Animal Purchases	98,494						
<b>Direct Cost Summary</b>							
Labour	14,100	0.05	4.43	0.09	0.12	13.61	14.44
Supplements & Fodder	31,882	0.12	10.03	0.05	0.10	7.95	12.16
Animal Health	2,385	0.01	0.75	0.03	0.05	4.79	5.89
Other	0	0.00	0.00	0.00	0.00	0.20	0.28
Crop Transfers & Feed	0	0.00	0.00	0.04	0.02	5.63	2.18
Agistment	0	0.00	0.00	0.05	0.04	7.49	4.84
<b>TOTAL PRODUCTION COSTS - PC</b>	48,367	0.18	15.21	0.27	0.34	39.67	39.79
Freight and Selling	52,412	0.20	16.48	0.12	0.16	17.09	19.08
Contract labour	0	0.00	0.00	0.00	0.00	0.00	0.01
Other	0	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOTAL POST PRODUCTION COSTS</b>	52,412	0.20	16.48	0.12	0.16	17.09	19.09
<b>TOTAL DIRECT COSTS - DC</b>	100,779	0.38	31.69	0.39	0.50	56.75	58.89
<b>OPPORTUNITY COST - OC</b>	123,068	0.47	38.70	0.35	0.42	51.52	49.95
<b>DEPRECIATION - DP</b>	23,958	0.09	7.53	0.05	0.08	7.85	9.90
<b>Gross Margins</b>							
Production GM: GP - DC	228,027	0.86	71.71	1.23	1.10	179.60	130.78
Economic GM: GP - (DC + OC + DP)	81,001	0.31	25.47	0.83	0.60	120.23	70.93
<b>COST OF PRODUCTION</b>							
Feed, Pasture, Agistment, Crops (feed)	31,882	0.12	10.03	0.14	0.16	21.06	19.18
+ Other Direct Costs	68,897	0.26	21.67	0.25	0.33	35.69	39.70
+ Overheads	198,364	0.75	62.38	0.53	0.67	76.68	79.30
= Total Expenses (excl fin., tax, dev.)	299,143	1.13	94.07	0.92	1.16	133.43	138.18
= <b>Break Even Costs (excl fin., tax, dev.)</b>	299,143	1.13	94.07	0.92	1.16	133.43	138.18
Total Expenses (excl fin., tax, dev., feed)	267,261	1.01	84.04	0.77	1.00	112.37	119.00
<b>PROFIT DRIVERS (Meat)</b>	<i>You</i>			<i>Top 20%</i>	<i>Average</i>		
Meat Value (\$/LSU)	121			272	254		
Meat Productivity (kg/LSU)	83			145	119		
Meat Production rate (kg/ha)	11			37	36		
Weaned Weight (kg)/breeder joined	85			159	245		
Average Sale Price (\$/head)	508			655	662		
Branding Rate (%)	42			75	68		
Reproductive Index (%)	37			58	55		
Mating Ratio (%)	2.2			2.0	3.0		
Death Rate (%)	2.2			1.0	1.0		
Liabilities (\$/LSU)	69			863	676		

## Overhead Diagnostic

<b>Overhead Ratios</b>				<b>Your Ratio</b>	<b>Top 20%</b>	<b>Avg</b>	<b>BM</b>		
Overhead Ratio (%)				58.12	29.1	52.1	30.1		
Plant Income Ratio (%)				86.10	36.70	71.30	36.63		
<b>Overhead Categories</b>				<b>Your \$</b>	<b>Your \$/ha</b>	<b>%GP</b>	<b>Top 20% %GP</b>	<b>Avg %GP</b>	<b>BM %GP</b>
<b>Cash Overheads (excluding property development)...</b>									
Buildings & Plant	29,550	1.26	8.38	6.10	9.81	6.74			
Labour	10,014	0.43	2.84	3.62	7.02	4.66			
Administration	33,159	1.41	9.41	5.72	6.65	5.57			
Land	11,031	0.47	3.13	0.74	1.94	0.94			
Land Maintenance	1,152	0.05	0.33	0.37	0.82	0.58			
<b>Total Cash Overheads (excl: prop. dev., land leases)</b>	<b>84,906</b>	<b>3.61</b>	<b>24.09</b>	<b>16.55</b>	<b>26.24</b>	<b>18.49</b>			
Land Leasing Rent	6,520	0.28	1.85	0.32	1.69	0.31			
<b>Total Cash Overheads (excl. property dev.)</b>	<b>91,426</b>	<b>3.89</b>	<b>25.94</b>	<b>16.87</b>	<b>27.94</b>	<b>18.80</b>			
Depreciation	23,958	1.02	6.80	3.42	5.28	3.21			
Unpaid Labour	89,500	3.81	25.39	4.10	5.56	3.91			
<b>Total Overheads (excl. property dev.)</b>	<b>204,884</b>	<b>8.72</b>	<b>58.12</b>	<b>24.39</b>	<b>38.77</b>	<b>25.91</b>			
Property Development	0	0.00	0.00	0.19	0.95	0.46			
<b>Note: Property dev. appears in Capital Expenditure at bottom of Flow of Funds page</b>									

<b>Overhead Items</b>	<b>Your \$</b>	<b>Your \$/ha</b>	<b>%GP</b>
Administration: Accomodation and travel	7,905	0.34	2.24
Administration: Insurance	4,438	0.19	1.26
Administration: Telephone and fax	4,350	0.19	1.23
Administration: Consultants	4,200	0.18	1.19
Administration: Electricity and gas	4,064	0.17	1.15
Administration: Accountant & professional fee	3,100	0.13	0.88
Administration: Freight - general	1,800	0.08	0.51
Administration: General	1,076	0.05	0.31
Administration: bank charges	990	0.04	0.28
Administration: Printing, postage & stationery	518	0.02	0.15
Administration: Legal fees	364	0.02	0.10
Administration: Licences and permits	327	0.01	0.09
Administration: Journals/subscriptions and donations	27	0.00	0.01
Buildings & Plant: Fuel & Oil	15,937	0.68	4.52
Buildings & Plant: Motor Vehicle Expenses	8,155	0.35	2.31
Buildings & Plant: R & M - Buildings and structures	2,986	0.13	0.85
Buildings & Plant: R & M - Plant & Equip	1,256	0.05	0.36
Buildings & Plant: R & M - water	808	0.03	0.23
Buildings & Plant: R & M - Other	408	0.02	0.12
Labour: Training	8,255	0.35	2.34
Labour: Other labour expenses	1,500	0.06	0.43
Labour: Workers compensation	259	0.01	0.07
Land: Rates & Rent	11,031	0.47	3.13
Land Maintenance: Weed/Regrowth control and bladepl	1,152	0.05	0.33
Unpaid Labour: General	89,500	3.81	25.39

## 9.2 Appendix 2 – Number of properties analysed by year and region for Northern Australia

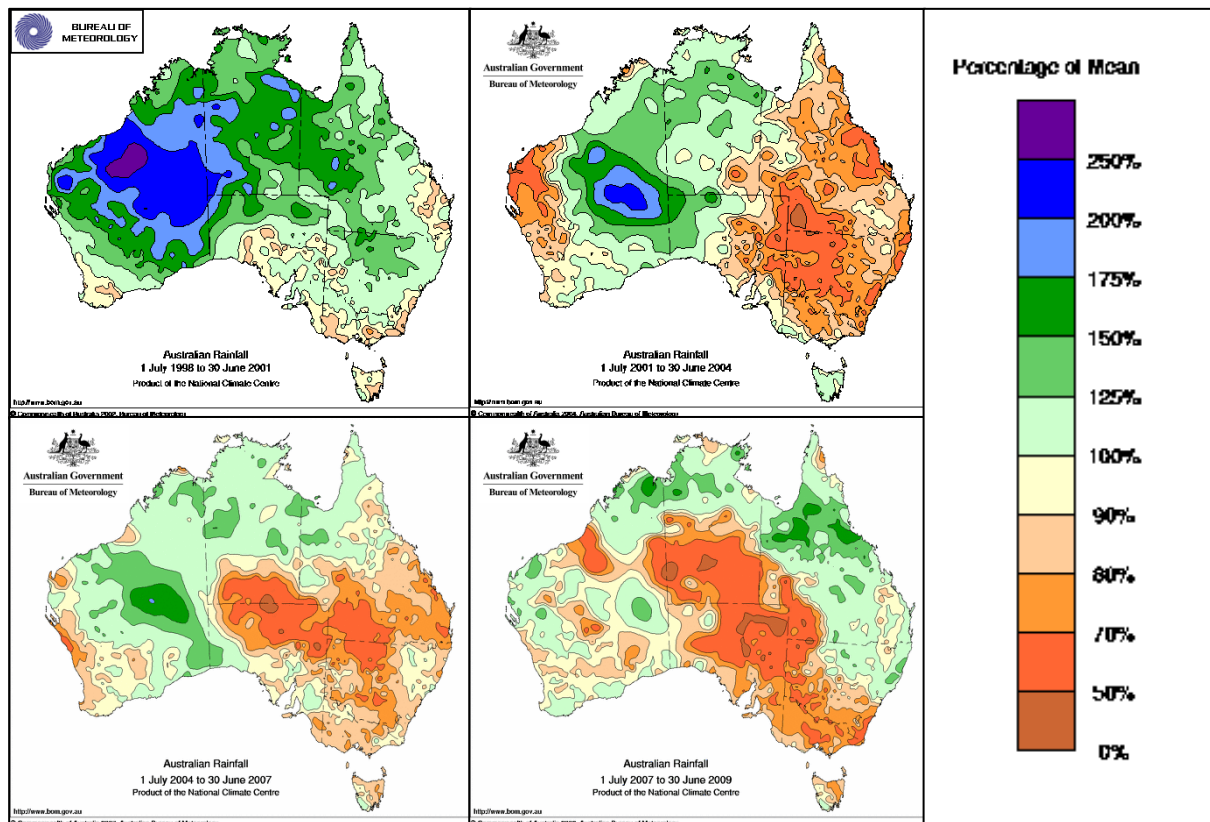
Number of businesses per region by year.

Region	Financial Year Ending										
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
All QLD*	84	82	85	85	104	73	57	88	83	89	
Brigalow	42	43	41	43	50	33	24	50	46	51	
Northern	16	16	22	19	16	12	9	21	14	11	
Ironbark	19	17	17	18	19	17	11	17	19	22	
Mitchell	4	7	10	12	15	12	7	4	7	7	
Central		6	6	6	6	6	6	6	6	6	5
Pilbara					3	3	3	3	3	3	
Katherine									5	5	8

\* Not all businesses analysed in Profit Probe™ choose to be allocated to a landtype therefore the total number of businesses can be greater than the sum of all regions. Also, some businesses due to multiple landtypes on their property are analysed against two regions where appropriate.



### 9.3 Appendix 3 – Annual rainfall percentages of mean



Clockwise from top left: 1998-01, 2001-04, 2007-09, and 2004-07. Source: Bureau of Meteorology

### 9.4 Appendix 4 – Labour efficiencies by region for 10 year analysis period

<u>LSU Managed / FTE</u>			<u>Farm Area / FTE</u>			<u>Gross Product / FTE</u>		
Region	All Data	Top 20%	Region	All Data	Top 20%	Region	All Data	Top 20%
Northern	1,877	2,327	Northern	12,636	14,055	Northern	\$229,592	\$315,397
Mitchell	1,608	1,853	Mitchell	13,902	18,282	Mitchell	\$258,008	\$475,336
Brigalow	845	1,262	Brigalow	3,324	4,490	Brigalow	\$194,211	\$318,800
Ironbark	877	1,241	Ironbark	3,722	5,201	Ironbark	\$160,457	\$249,202

Source: RCS Profit Probe™