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Prime lamb situation analysis

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Important considerations and interpretation of situation analyses

What is a 'situation analysis'?

A situation analysis can take on a number of forms and utilise various methods of analysis to provide a snapshot of the current 'state of play' within a region, sector or industry. The aim of these analyses is to generate a greater understanding of the economic performance and issues impacting producers at the enterprise level. Importantly, these reports aim to complement other sources of data available on industry performance, including those from the Australian Bureau of Agricultural Resource Economics (ABARE) and the Australian Bureau of Statistics (ABS).

What is comparative analysis?

A commonly used method to underpin a situation analysis is known as a 'comparative analysis'. By definition, comparative analysis is simply comparing two or more systems to identify and explain points of difference and/or similarities, along with associated trends over time). The final output of a comparative analysis is an explanation of the drivers that directly and indirectly affect performance. These drivers are either causative (i.e. directly impact on performance) or associative (i.e. related parameters that won't or don't directly impact performance).

There are limitations to comparative analysis

Comparative analysis compares systems with a variety of physical and social attributes (e.g. geographical location, skills, human and natural resource base, enterprise mix and attitude towards risk). The robustness of the results is highly proportional to the levels of uniformity in these parameters, as well as the overall sample size. The methods, calculations and units used for conducting a comparative or situation analysis, including measures of profitability and productivity, are highly variable between analysts and therefore care should be taken when interpreting and/or comparing results.

How should a situation analysis be interpreted?

When reading this report, it is important to remember that:

- Situation analyses are conducted using a sample dataset (only) of the total population to which the analyst has access to and this dataset is not necessarily reflective of the total population averages.

- As the sample has been taken from a specific dataset, the resulting analysis may be skewed or biased, and thus may not accurately reflect the overall picture for a given region or the broader industry.

- An analysis uses historical data across a defined period of time and thus provides possible trends or indicators of local, regional or national performance at that point in time, within a particular market and under seasonal conditions.

- The “top” category does not necessarily include the same producers over consecutive years, namely due to seasonal and market variations impacting year-on-year.

- The population sample on which the analysis is made may change from year-to-year, either deliberately in order to lessen statistical error or inadvertently in cases where the submission of data is voluntary.

- Wherever possible, a combination of available data sources should be used to make a more complete assessment of industry performance.

How is this information useful to producers?

Comparative analyses aim to highlight differences between the performance parameters of the “top” versus “average” producers. This information can be used to identify key issues and potential opportunities to improve one or more aspects of performance. In assessing these opportunities, it is important to prioritise and/or pursue them in accordance with the resources available (land, labour, skill and capital) and individual business and personal goals and limitations.

Executive summary

- The extent of the variation in profits within each enterprise (both because of the variation in performance of different producers and because of the highs and lows in each commodity cycle) is far greater than the extent of the variation in profits between enterprises.
- It appears that lamb enterprises are struggling to compete with cropping and wool in less than 650mm rainfall zones. This is an area for further investigation to understand why and whether competitiveness can be improved in those areas.
- There appears to be more specialisation across benchmarked flocks than there was in 2008 with the percentage of self-replacing prime lamb flocks and dual purpose lamb production systems alongside specialist wool flocks increasing. There are fewer traditional 1st X ewe operations or dual purpose breeds than there were in this sample five years ago. This is across all rainfall zones. This should be interpreted in context of the benchmarking database being a skewed sample of the industry.
- The difference between top 20% profitability in lamb and average profitability is less defined by differences in production per hectare than it was in 2008. This may be due to the fact that more producers are near their optimum production levels per hectare as a consequence of a strong focus on this over the last decade.
- The difference in profit between the top 20% and average appears to be increasingly associated with production per DSE and cost control. This reflects the efficiency of generating the optimum production per hectare has become more important than the target optimum per hectare itself.
- It is believed that the consequences of these findings from a research and extension viewpoint are:
    - Opportunities for systems research in lower rainfall regions to allow prime lamb to compete better with wool and cropping.
    - Opportunities for research into key cost saving technologies.
    - Opportunities for extension aimed at improving producers understanding of the impact that systems have on whole farm cost structures.
    - Opportunities for extension aimed at improving the lamb producer's ability to better tactically manage changes in seasons.

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1 Introduction and definitions

This paper discusses the historical and current profitability of lamb enterprises, and the profitability differences of farms that are currently operating a lamb enterprise.

The enterprises compared in this report, unless otherwise specifically stated, fall under the following definitions.

Prime Lamb Flocks

These enterprises are those for which both the maternal and terminal breeds are known to be specialist prime lamb breeds with little wool value comparative to their sheep meat value. These flocks will include flocks where the more traditional first cross ewe (Border Leicester x Merino) are joined to terminal sires (predominantly Poll Dorset and White Suffolk), and also self-replacing pure bred or composite prime lamb flocks (i.e. Coopworth flocks).

Dual Purpose Flocks

These enterprises are those where there is significant wool income from the enterprise as well as prime lamb. The majority of these flocks consist of surplus ewes from specialist wool flocks joined to either a maternal or terminal sire. There are only a few dual purpose breeds represented in this sample.

Wool Flocks

These enterprises are predominantly self-replacing merino sheep enterprises. Some of these flocks keep wethers out to three years of age. There is the occasional enterprise where wethers are purchased in.

Beef Herds

These enterprises are predominantly self-replacing beef breeding herds.

Dryland Cropping

The dryland cropping profits were calculated as 2/3rd of the average wheat profit and 1/3rd of the average canola profit for each year to reflect the typical rotation emphasis between the two major crops.

Net Profit

Net profit is defined as income adjusted for purchases of livestock and changes in livestock inventory less all expenses with the exceptions of capital equipment purchases, capital land developments, interest payments on loans and land lease costs. Depreciation on capital items is used in place of capital expenses.

An assumed owner wage is included in the expenses where owners are employed in the business. This owner wage is derived from the average of the Holmes Sackett salary benchmarking. For the latter years of this data it equates to $70,000 for the first full time owner labour unit and then $50,000 for every subsequent full time labour unit.

The data is reported in nominal terms. This means it is reported as the value at the time of data collection.

Lamb production is currently one of the most profitable livestock enterprises. Recent high profits have been helped by continued increases in price which have allowed producers to generate profits regardless of rising cost of production.

With recent healthy cash flows and a general feeling of optimism within the industry, producers should still have the confidence and means to invest in their business to further improve its productivity, as well as to make it more resilient for the next seasonal or price downturn both of which are largely outside the producers control.

The data presented within the report has been drawn predominantly from the Holmes Sackett benchmarking database which has been gathered over the past 15 years. This benchmarking service draws data from farms covering a geographic area extending from southern Queensland, NSW, Victoria, Tasmania and South Australia. There is also data contributed from the Principle Focus and Pro Advice benchmarking data bases.

The benchmarked data presented is not drawn from a random sample of farms. Owners of farm businesses who choose to benchmark their performance are not a random sample. This is confirmed when the average performance of Holmes Sackett benchmarked farms are compared to the average performance of farms analysed by ABARE. The Holmes Sackett sample has been shown to be more profitable than the ABARE average over the past five years (Table 1.1). So when reading this report it is important to always remember that the average performance referred to is not representative of the average for the industry as a whole.

Table 1.1: Return on Assets comparison – ABARE versus Holmes Sackett 2008 to 2012.

Grazing Farms – Return on Assets	**2007/08**	**2008/09**	**2009/10**	**2010/11**	**2011/12**
ABARE	0.6%	0.8%	0.4%	1.4%	2.3%
Holmes Sackett	0.8%	1.3%	2.2%	5.5%	3.8%
HS Difference	**0.2%**	**0.5%**	**1.8%**	**4.1%**	**1.5%**

2 Current situation 2012

2.1 Relative profitability

Sheep enterprises are currently enjoying superior, average profitability compared to beef and dryland cropping. Graph 1.01 shows that over the period of 15 years from 1998-2012, the fortunes of these industries have varied greatly, but in the last few years it has been sheep enterprises that have been the most profitable.

Prime lamb enterprises have averaged $29/Ha/100mm for the last two years. Dual purpose flocks have averaged $36/Ha/100mm and Wool flocks have average $32/Ha/100mm for the last two years.

Beef enterprise profitability is travelling as well as it ever has however it is not experiencing the levels of profits that sheep enterprises are. In the last two years the average beef herd profit has been $17/Ha/100mm of rainfall. That is approximately half the profits of the sheep enterprises.

Cropping is the most variable enterprise but has not enjoyed a really good year recently. In the last two years it has had the worst performance with an average of $13/Ha/100mm of rainfall.

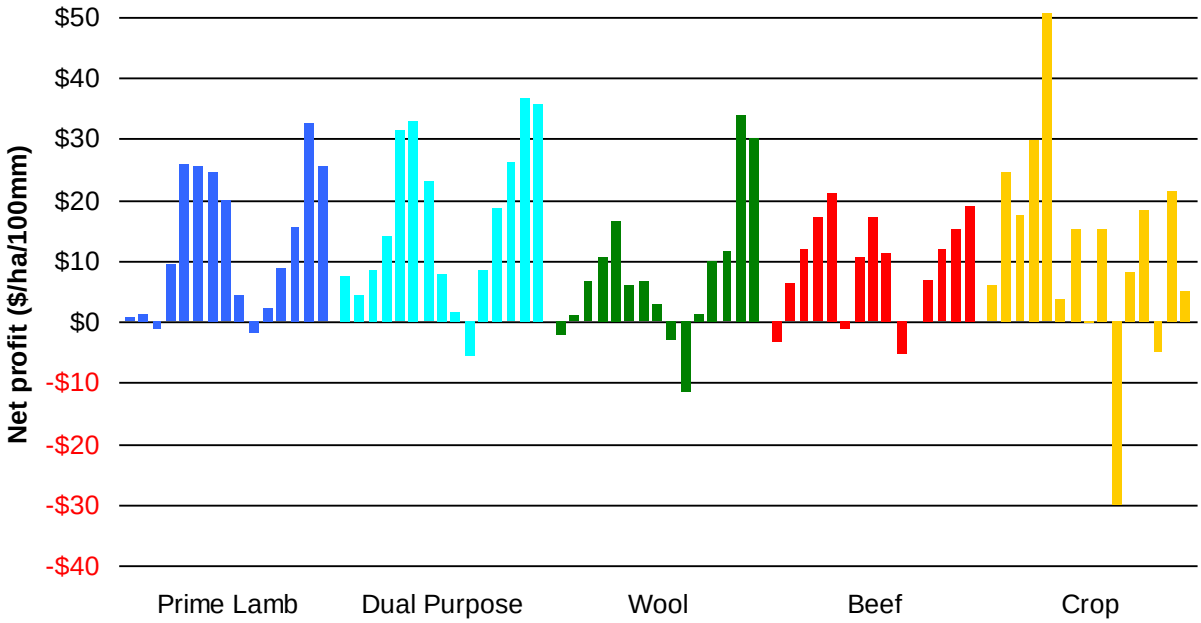
The data in Graph 1.01 is in nominal terms meaning that the figures have not been adjusted for inflation over this period.

Throughout this 15 year period the profitability of beef and sheep enterprises have generally fluctuated independently of each other. Wool and lamb production follow similar profit trends, but for the majority of the period with the exception of the last two years, lamb has had superior profitability compared to wool.

In the last two years this has changed with wool flock profits outstripping those of specialist prime lamb flocks and the dual purpose flock was more profitable than either prime lamb or wool.

Graph 1.01 provides a good perspective on where the specialist prime lamb and dual purpose enterprises have been situated in recent and historical terms. Recently these industries were enjoying nominal profits that are higher than ever before. These profits are far in excess of those generated by beef and dryland cropping which therefore has made them very competitive from a land use perspective.

Graph 1.01: Nominal net profit per hectare per 100mm of annual rainfall for wool flocks, beef herds, dual purpose and prime lamb flocks over the 15 years from 1998 to 2012.



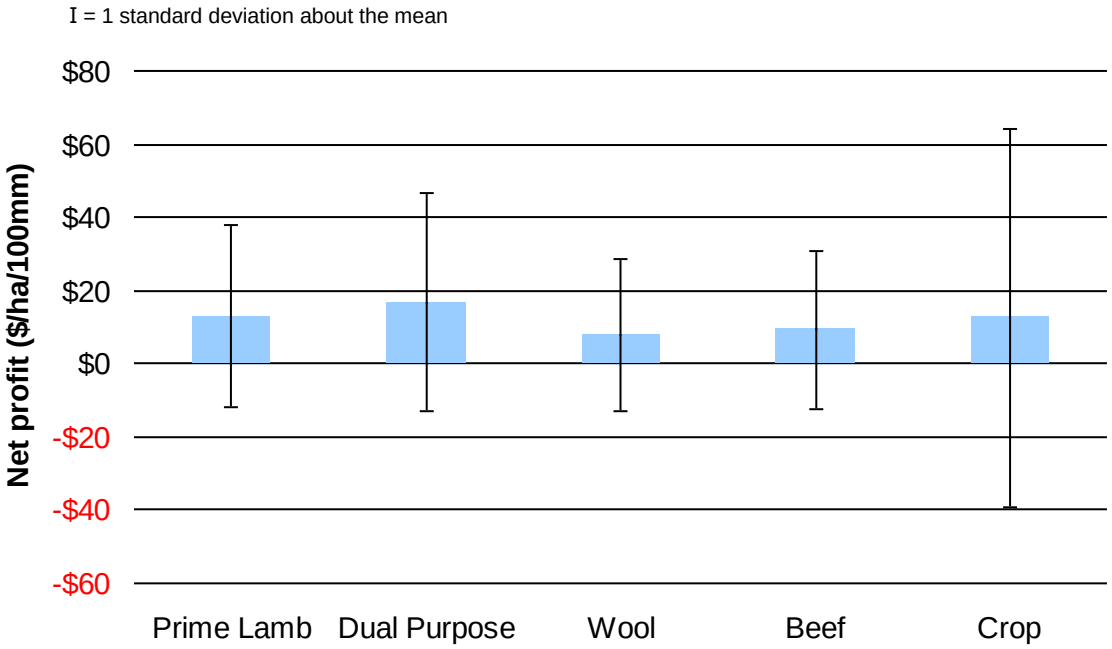
Source: Holmes Sackett Pty Ltd Benchmarking Database 1998 - 2012

A comparison of the average profitability between lamb enterprises, other livestock and crops in south east Australia over the same 15 year period (1998-2012) is shown in Graph 1.02. To allow direct comparison between cropping and livestock enterprises across zones performance is shown per hectare per 100mm of rainfall.

When interpreting these figures it needs to be considered that cropping on many farms is done on the most productive land classes, whilst the stock are relegated to less productive country on average. The extent of this bias is unknown but our estimate is that this may close, but not eliminate the gaps in profitability between enterprise options.

Over the last 15 years the dual purpose enterprise profits have had the highest average followed by dryland cropping and prime lamb followed by beef then wool. This is similar to what was reported in the 2008 situation analysis with the exception that dryland cropping has slipped from being the most profitable average to the second most profitable and wool has made up a lot of ground on beef (Graph 1.02).

Graph 1.02: Average net profit per hectare per 100mm of annual rainfall (nominal) for wool flocks, beef herds, dual purpose and prime lamb flocks, wheat and canola crops from 1998 to 2012.

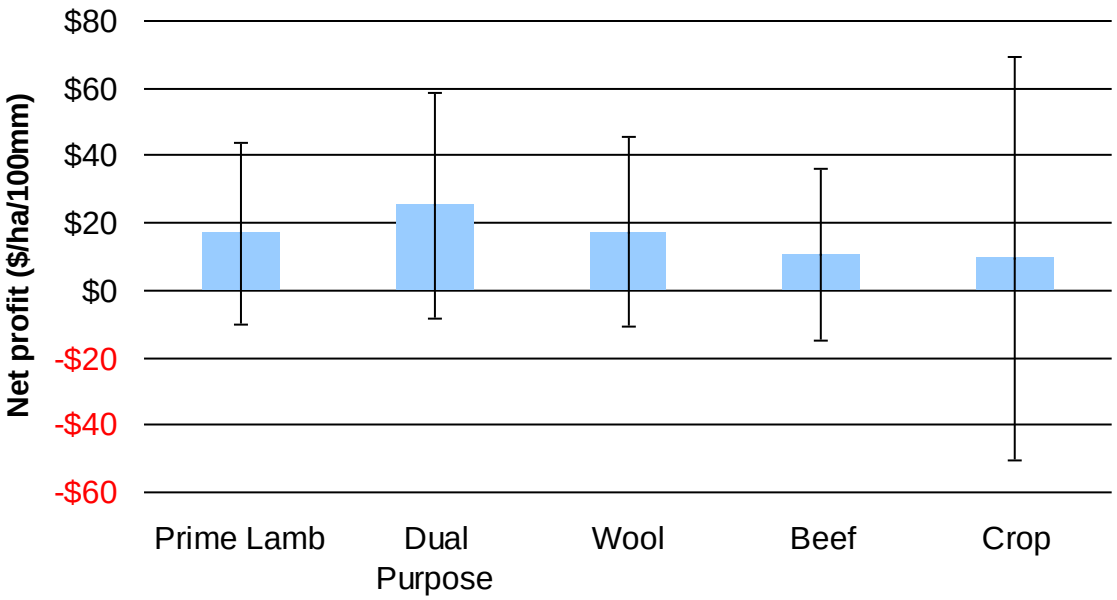


Source: Holmes Sackett Pty Ltd Benchmarking Database 1998 to 2012

**Combined profit from canola (30%) and wheat (70%) crops*

The shift in ranking has been as a result of the past few years being exceedingly profitable for sheep. Graph 1.03 shows the average profits of each enterprise over the past five years only. In order of profitability it has been dual purpose enterprise followed by wool, prime lamb, beef and dryland cropping.

Graph 1.03: Average net profit per hectare per 100mm of annual rainfall (nominal) for wool flocks, beef herds, dual purpose and prime lamb flocks, wheat and canola crops from 2008 to 2012



The change in ranking of enterprise profitability as a consequence of the last five years shows how susceptible each enterprise is to the cyclical nature of commodity prices and seasonal conditions. Merino sheep were the most lamented industry five years ago. The dual purpose enterprises represented in this sample are predominantly ewes from a wool flock that are not required to breed replacements for that flock. These ewes are then joined to a terminal sire to value add the progeny as meat sheep or to supply replacement ewes for prime lamb enterprises. The dual purpose system is therefore a way for the wool enterprises to value add using Merino ewes not required to be joined for self-replacement purposes.

Typically this will constitute approximately 35% of the ewes old enough to be joined in the flock. If you combine the two enterprises in that ratio then the merino sheep have risen to be the most profitable sheep breed over the last five years.

The benchmarking data over 15 years (Graph 1.02) shows that over a long period of time the decision on which enterprise cannot be made on relative profitability between enterprises. **The extent of the variation within each enterprise (both because of the variation in performance of different producers and because of the highs and lows in each commodity cycle) is far greater than the extent of the variation between enterprises.**

2.2 Variation in profits

Over a fifteen year time frame the dryland cropping has by far the largest variation in profits per hectare per 100mm of rainfall (Graph 1.02). This is represented by the y-error bars depicting one standard deviation of variation from the mean in the graph.

Ranking the remainder from highest to lowest the most variable after dryland cropping was Dual Purpose, Prime Lamb, wool and then beef.

The differences in variation between livestock enterprises are negligible compared to the variation between livestock enterprises and cropping. Whilst this data confirms that the variation in cropping profits is higher than livestock enterprises the average profits are not dissimilar.

Cropping businesses need to be able to cope with the variation through management of debt levels to ensure that they have access to working capital over a number of years if the seasons and prices conspire against them in the short term. Dryland cropping farms that maintain a strong enough balance sheet to handle the variation in profits will be just as profitable in the long term.

The same rules apply to all of the livestock enterprises. Prudent debt management, rather than avoiding debt is a key success factor in farm business management.

2.3 Profits by geographical zone

The profits in three different geographical zones have been analysed. These geographical zones have been defined as the low rainfall zone (<500mm long term average rainfall), medium rainfall (500-650mm long term average rainfall) and high rainfall zone (>650mm long term average rainfall).

Graph 1.04 shows the comparisons of each enterprise by geographical zone over the previous fifteen years.

In the low rainfall zone the best performing enterprise has been cropping followed by dual purpose enterprises, wool then beef. Prime lamb is omitted from this analysis as there is too little data in the first decade of this fifteen year analysis to draw a meaningful comparison.

In the medium rainfall zone the only enterprise that stands out as being substantially different is the dual purpose enterprise over the fifteen year period. This dual purpose enterprise consists mainly of merino ewes joined to terminal or maternal sires and they are most often run alongside a self-replacing merino flock. It therefore refers to a **dual purpose system** rather than a dual purpose breed.

This has been a very successful strategy for producers to improve the profitability of their wool flocks over that period of time as it has allowed the wool flock to;

1. take advantage of the higher sheep meat prices

2. source cheap replacement genetics from merino wool flocks
3. and more recently take advantage of the higher merino wool prices

There is very little data from dual purpose breeds in these data sets and so no meaningful conclusions about dual purpose sheep can be drawn from the data. **What the data does highlight is that the dual purpose system using specialist sheep meat genetics is a profitable way to take advantage of both the lamb and wool markets.**

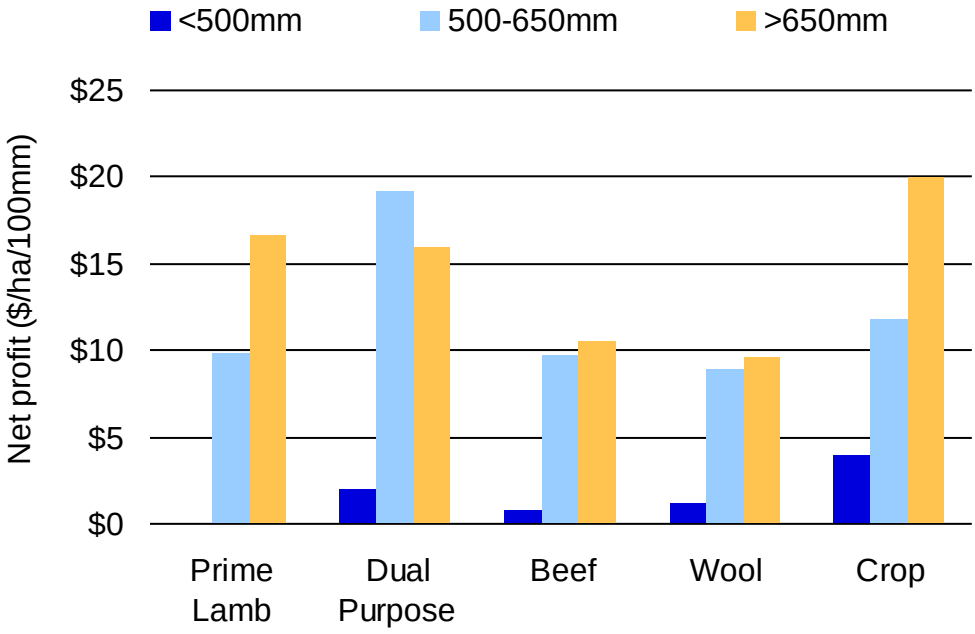
Aside from dual purpose there has been little difference in profit per hectare per 100mm of rainfall amongst the other enterprises.

In the high rainfall zone cropping has again been the most profitable enterprise followed by prime lamb and dual purpose and then wool and beef as the least profitable enterprise.

Cropping has performed particularly well in the high rainfall zone over this period in part because high rainfall cropping is a minor contributor to total grain production. In the severe and widespread drought years where grain prices rise in response to falling production the only area that has had enough rainfall to harvest a crop is the higher rainfall areas. As a consequence the extremely high prices more than offset the reductions in yield in the high rainfall zone.

Cropping remains a serious competitor to livestock for land use in the high rainfall zone.

Graph 1.04: Average net profit per hectare per 100mm of annual rainfall (nominal) for wool flocks, beef herds, dual purpose and prime lamb flocks, wheat and canola crops from 1998-2012.



Over the more recent five year period dual purpose enterprises, wool and cropping have performed significantly better than the prime lamb and beef enterprises in the low rainfall zone (Graph 1.05). This outcome reflects the apparent competitive disadvantage a shorter growing season offers meat production enterprises in lower rainfall areas.

In the medium rainfall zone dual purpose and wool have been the most profitable enterprises over the last five years. Prime lamb was the next most profitable enterprise followed closely by beef and cropping.

The five year average wool profits were set up by the very good wool prices (Table 1.5) that were received in the 2010/11 and 2011/12 years. The dual purpose enterprises were able to take advantage of the wool prices and the good lamb prices. Lamb prices on their own were not as good enough to match the wool prices that were received and therefore prime lamb enterprises were not as profitable as the dual purpose and wool enterprises in the medium rainfall zone. It should be noted that this did not inhibit the prime lamb flocks from performing as well in the high rainfall zone. It therefore appears that prime lamb businesses are struggling to remain as profitable in lower rainfall zones.

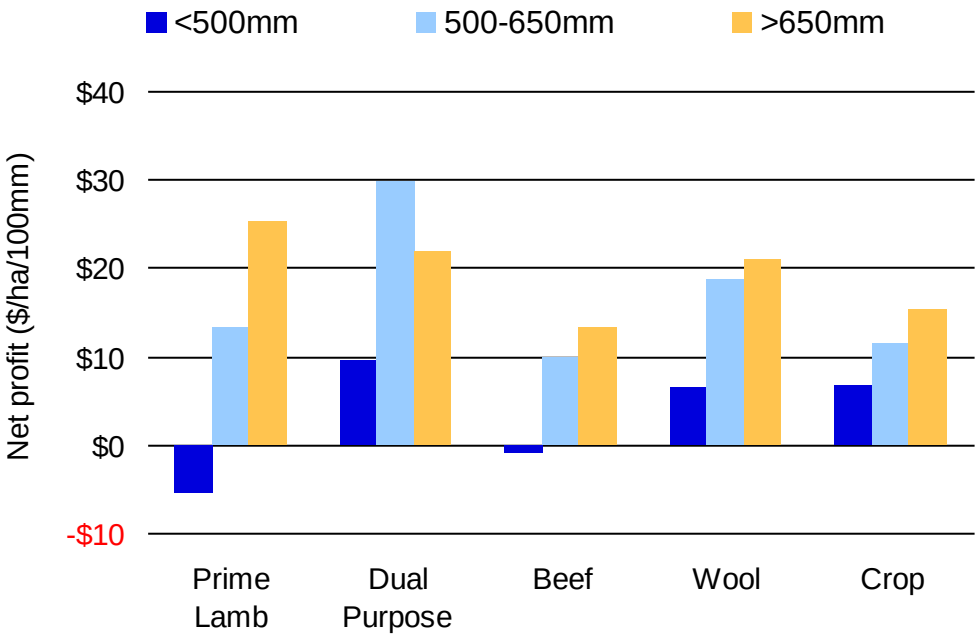
Beef and cropping were the two least profitable enterprises in the medium rainfall zone. The five year average for beef and cropping is the same as the fifteen year average for all enterprises with the exception of dual purpose flocks.

The key message is that there has been no price driven improvement in profitability for beef and cropping in the last five years. It is not that profitability has declined in these two enterprises.

In the high rainfall zone over the last five years the most profitable enterprise has been prime lamb followed by dual purpose and wool then cropping and beef. This portrays a similar story as the sheep cereal zone with the exception that prime lamb has maintained its competitive advantage in the high rainfall zone. This competitive advantage is apparent in the 15 year data and the five year data.

Dryland cropping in the high rainfall zone on the other hand has not had the luxury of the high cereal price years as a consequence of widespread drought over the last five year period. In fact in more recent years there has been a run of wetter than normal years and hence the competitive advantage of cropping in the high rainfall zone has been suppressed.

Graph 1.05: Average net profit per hectare per 100mm of annual rainfall (nominal) for wool flocks, beef herds, dual purpose and prime lamb flocks, wheat and canola crops from 2008-2012.



2.4 Differences in return on assets

Comparison of return on assets under management are not explicit from the Holmes Sackett benchmarking methodology because land use is not determined by fixed geographic boundaries and therefore comparative land values between land used for different enterprises is not available.

It is common on properties that have multiple enterprises that enterprises may use different land classes across the property i.e. cropping uses the most arable ground and wethers from a merino flock get the bush runs.

To arrive at an estimate of comparative profitability between enterprises if they were to get access to the same land the average land value for mixed farms with 600mm of rainfall was used. This rainfall was chosen because it is suitable for all enterprise purposes including crop.

As rainfall increases above 800mm and decreases below 450mm the land has historically been less attractive for cropping purposes because of its variability of rainfall or because of the climate and risk of water logging and frost. The exception is the southern areas where rainfall is less than 450mm because the seasonal reliability of the rainfall improves.

Increasingly cropping is encroaching on higher rainfall areas as management of the increased water and frost risks are improved. Little cropping is done at 800mm rainfall and above.

The average land value recorded for farms in this rainfall zone is $3800 per hectare. There is a wide range in land value at this level of rainfall from $5000 per hectare to $1500 per hectare which reflects different regions and different land classes. The actual value chosen does not really impact on the conclusions drawn from this analysis because it is the comparative profitability under the assumption that it is the same land being used that is of interest.

Land is not the only asset tied up in any enterprise and the relative values of other assets can be large. For the purpose of this analysis the other assets needed for the enterprise are livestock, plant and equipment and working capital.

The estimates of livestock values per hectare have been taken from the expected average annual stocking rate for that rainfall by a standard valuation per DSE for each average annual DSE run. Cattle and crossbred ewes have been traditionally higher cost than merino ewes.

Average annual DSE's run per hectare varies for each enterprise according to that which would be achieved with commonly run production systems.

Plant and equipment per hectare is taken from the average benchmarked values per hectare for crops and livestock.

Working capital is the average $/DSE in direct and overhead expenses for each livestock enterprise multiplied by the average annual stocking rate and from the average direct and overhead expenses per hectare for crops.

Table 1.2: Comparison the estimated different in return on assets under management between enterprises based on their 15 year average profits per hectare per 100mm of rainfall.

	Wool	Beef	Prime Lamb	Dual Purpose	Crop
Rainfall	600	600	600	600	600
Mid-Winter DSE/Ha	9.8	9.8	9.8	9.8	
Average Annual DSE/Ha	11.76	11.76	10.78	10.78	
Land Value ($/Ha)	$3,800	$3,800	$3,800	$3,800	$3,800
Livestock ($/Ha)	$588	$823	$755	$647	$0
Working Capital	$412	$259	$345	$377	$556
Plant and Equip	$100	$100	$100	$100	$235
Assets Under Management	$4,900	$4,982	$5,000	$4,924	$4,591
15yr Average Net Profit ($/Ha/100mm)	$18.78	$10.01	$13.20	$29.83	$11.54
Average Profit ($/Ha)	$113	$60	$79	$179	$69
Return on Assets Under Management	2.3%	1.2%	1.6%	3.7%	1.4%

This analysis shows that merino based enterprises (wool and dual purpose) have produced a higher return on assets under management than cropping, beef or prime lamb. This is the opposite finding to the situation analysis in 2008 where the cropping was found to have

performed better over the previous 11 years. The change is because profits from merino wool based enterprises have been extremely good in the past few years as a consequence of wool and sheep prices being very high by historical standards.

For the ranking to switch so quickly it suggests that the answer as to which will be the enterprise with the highest return on assets will always be dependent on when the question is asked relative to the position in the cycle for each commodity in question.

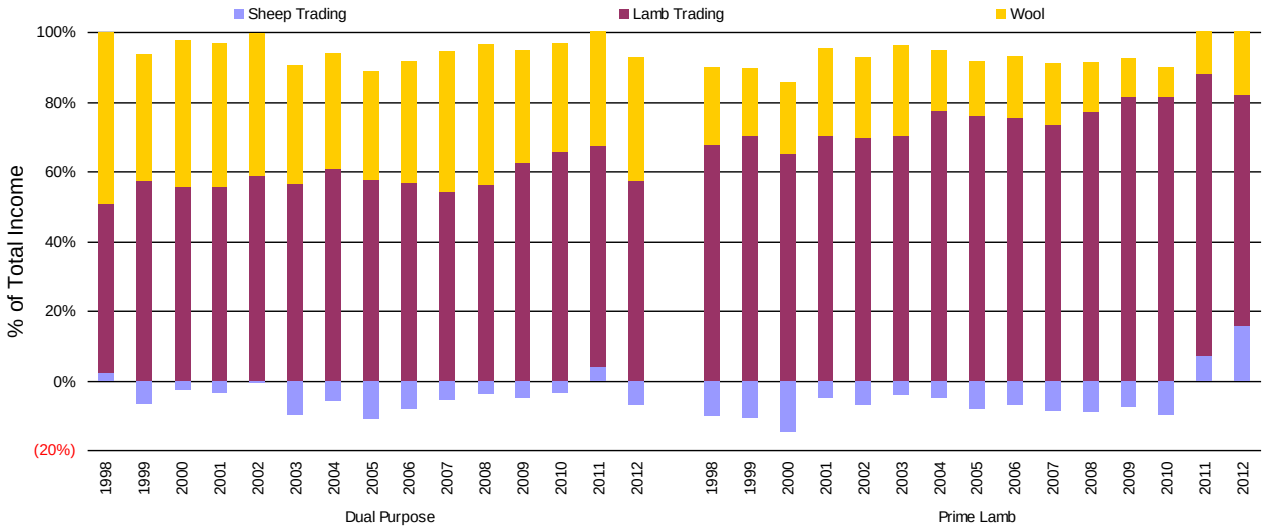
The analysis does not suggest the better than average profits in any enterprise cannot be competitive with average profits of any other enterprise.

2.5 Enterprise characteristics

Production systems for prime lamb are as varied as the range of climates in which lamb is produced. A substantial number of Merino ewes are used for prime lamb production, simply because they represent the greatest available resource, but dual purpose breeds such as the Corriedale or more recently introduced breeds such as Dohnes and SAMM's, and specialist meat sheep breeds such as Coopworth and the Border Leicester - Merino crosses have been used.

For the purpose of this report the different lamb production systems have been classified into two broad categories, being dual purpose and prime lamb. The reason for this distinction is the difference in the importance of wool trading income to each category. Graph 1.06 shows the percentage of income derived from sheep trading, lamb trading and wool from each system over the period from 1998 to 2012.

Graph 1.06: Sources of income from wool, meat and sheep trading for dual purpose and prime lamb flocks 1998 to 2012.



Source: Holmes Sackett Pty Ltd Benchmarking Database 1998 to 2008

Over the fifteen year period from 1998 to 2012, wool income made up an average of approximately 41% of dual purpose enterprises total income, while lamb income accounted for 64%. In prime lamb enterprises wool accounted for 21% of total income and lamb 86% (Graph 1.06).

In dual purpose flocks, on average over the fifteen year period combined wool and lamb contribute 105% of total income for the enterprise and the average sheep trading income produces a 5% loss (e.g. 41%+ 64% - 5% = 100%). For prime lamb enterprises, wool and lamb contribute 107% of total income and the average sheep trading a 7% loss. In other words replacement ewes are on average a net cost to both enterprises.

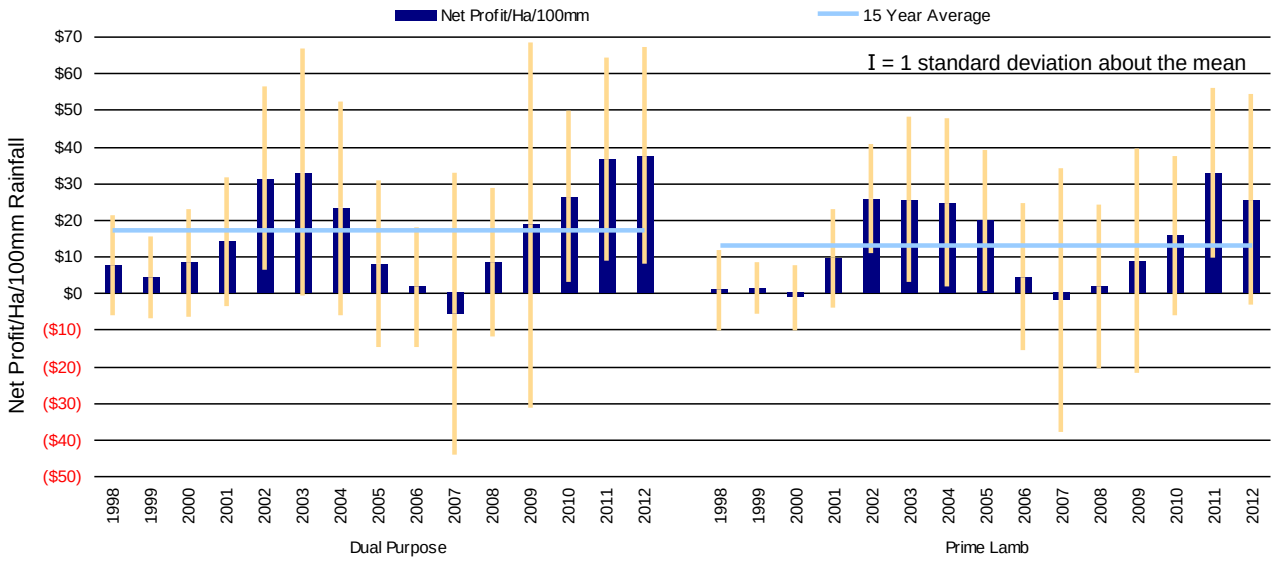
Self-replacing flocks have positive sheep trading income but lower lamb trading income due to retained replacements. In recent years self-replacing flocks are beginning to represent more and more of the benchmarked database in prime lamb and therefore there is a swing towards positive sheep trading income on average for prime lamb operations. In 2008 the percentage of flocks that were self-replacing was 36% as compared to 56% in 2012.

In addition to a trend towards self-replacing flocks within the database, in recent years there has been a very good market for ewes. In response to this clients have retained ewe lambs and sold them as hoggets to buyers looking for replacement ewes. This has decreased lamb trading income and increased sheep trading income.

On average over the last 15 years, and also in the latest year, dual purpose enterprises have outperformed the specialist meat sheep enterprises on a profit per hectare per 100 millimetre basis (Graph 1.07).

In 2012 all but three of the dual purpose enterprises were merino ewes joined either to a terminal or maternal sire and therefore the dual purpose enterprise is really a dual purpose system rather than a dual purpose breed. This system is predominantly wool producers taking advantage of high sheep meat prices with the surplus flock fertility they have in their wool flocks. The availability of ewes for dual purpose system lamb production is determined by the overall flock fertility level but predominantly varies between 20-40%.

Graph 1.07: Nominal net profit per hectare per 100mm of rainfall for dual purpose and prime lamb flocks 1998 to 2012.



Source: Holmes Sackett Pty Ltd Benchmarking Database 1998 to 2012

There is a wide variety of production systems employed in lamb production. These are influenced by target market, enterprise mix and the environment in which the enterprises are run. The two main factors to consider in any production system are the lambing time and the age and weight at which lambs are sold.

For instance a producer in the wheat sheep zone may choose to lamb in autumn and turn off 24kg export lambs in spring using a combination of stubbles, supplements, and grazing cereals. Another producer may choose to lamb in late winter and sell 18kg domestic weight lambs to the local supermarket trade.

Within the top 20% of specialist prime lamb enterprises in 2012 the main lambing date varied between June and October, and carcase weights at sale varied between 14kg and 30kg. The environments these performers came from were southern tablelands of NSW, central tablelands of NSW, south west Victoria and Tasmania. Resources available varied from dryland pasture only to a mix of irrigation crops and dryland pastures.

A similar scenario occurs within the most profitable dual purpose enterprises in 2012 with lambing date varied between May and October and carcase weights at sale varying from 13kg to 24kg. The dual purpose flocks are spread over the same environments with the exception of pastoral NSW being added to the list.

The low end of the sale weights is predominantly an estimate of the carcase weight of lambs sold as stores to specialist finishers. Some markets for either milk fed lamb or low carcase weight lambs to the Middle East are used so low carcase weight lambs are not all store lambs.

It is not possible to distinguish variation in profitability according to production system and target market from the benchmarking data for either enterprise type. These decisions however remain of critical importance for the individual producer.

2.6 Variations in profitability within each enterprise

In most industries there is always more variation within an enterprise than there is between enterprises. Table 3 shows the key differences between the top 20% and the average prime lamb and dual purpose enterprises ranked by profit per DSE for 2012.

Table 1.3: Key differences between average and top 20% lamb producing enterprises

	Prime lamb		Dual purpose	
	Average	**Top 20%**	**Average**	**Top 20%**
Total income ($/DSE)	$43.32	$53.89	$58.89	$81.08
Enterprise expenses ($/DSE)	$11.59	$10.73	$15.21	$17.06
Overhead expenses ($/DSE)	$20.89	$18.30	$21.04	$20.37
Net profit ($/DSE)	**$10.84**	**$24.86**	**$22.64**	**$43.65**
Key performance indicators				
Kg of lamb (kg Dwt/Ha/100mm)	16.8	15.5	11.5	10.7
Kg of lamb (kg Dwt/DSE)	6.7	7.7	7.2	7.7
Kg of wool (kg clean/ha/100mm)	3.4	3.6	3.1	4.0
Kg of wool (kg clean/DSE)	1.4	1.6	2.2	3.0
Cost of production lamb ($/kg Dwt)	$3.76	$3.22	$3.67	$2.56
Cost of production wool ($/kg clean)	$4.47	$2.38	$6.78	$5.50
Price received lamb ($/kg Dwt)	$5.28	$5.70	$5.40	$5.70
Price received wool ($/kg clean)	$6.26	$5.57	$11.28	$12.85

Source: Holmes Sackett Pty Ltd Benchmarking Database 2012

The more profitable businesses within both the dual purpose and prime lamb groups have a superior combination of:

- Higher productivity (kg of lamb and wool per DSE)
- Lower cost of production (they produce each kilogram cheaper), and
- A higher price received for lamb

The lower cost of production is coming from the extra production per DSE whilst incurring similar or slightly lower expenses per DSE.

Production per DSE is the kilograms of lamb produced per unit of energy consumed by the flock, where 1 DSE equals the amount of energy required to maintain a wether (dry sheep). In the

Holmes Sackett benchmarking methodology, DSE ratings are based on estimates of the requirement of each stock class on a monthly basis depending on reproductive rates and animal size. The DSE ratings of stock are not adjusted monthly for actual weight gains which also affect relative energy requirements. Production per DSE is therefore a measure of the ability to convert a predicted level of energy intake into lamb production.

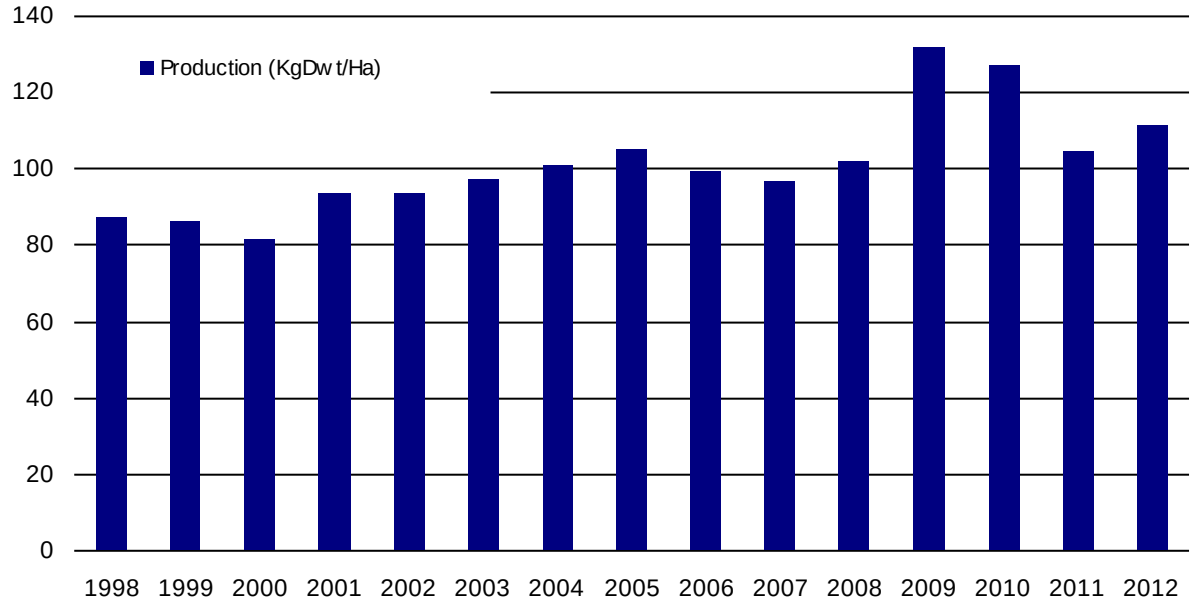
A notable change from 2008 is that the extra production per DSE is no longer translating into a noticeable increase in production per hectare per 100mm of rainfall for prime lamb flocks. There are a number of possibilities as to why this might be the case;

- The results are confounded by rainfall in 2012 with higher than average rainfall limiting the differences seen. A sizeable increase in rainfall without a substantial increase in stocking rate will see production per hectare per 100mm fall.
- The message of achieving higher production per hectare is well understood and that more producers are nearer their long term average economic limits on this key performance indicator.

The first point is definitely influencing the 2012 results. In a year of above average rainfall the ability for producers to respond with production per hectare becomes a limiting factor as per head performance and stocking rates are not adjusted accordingly. In itself this is an opportunity to improve long term profits.

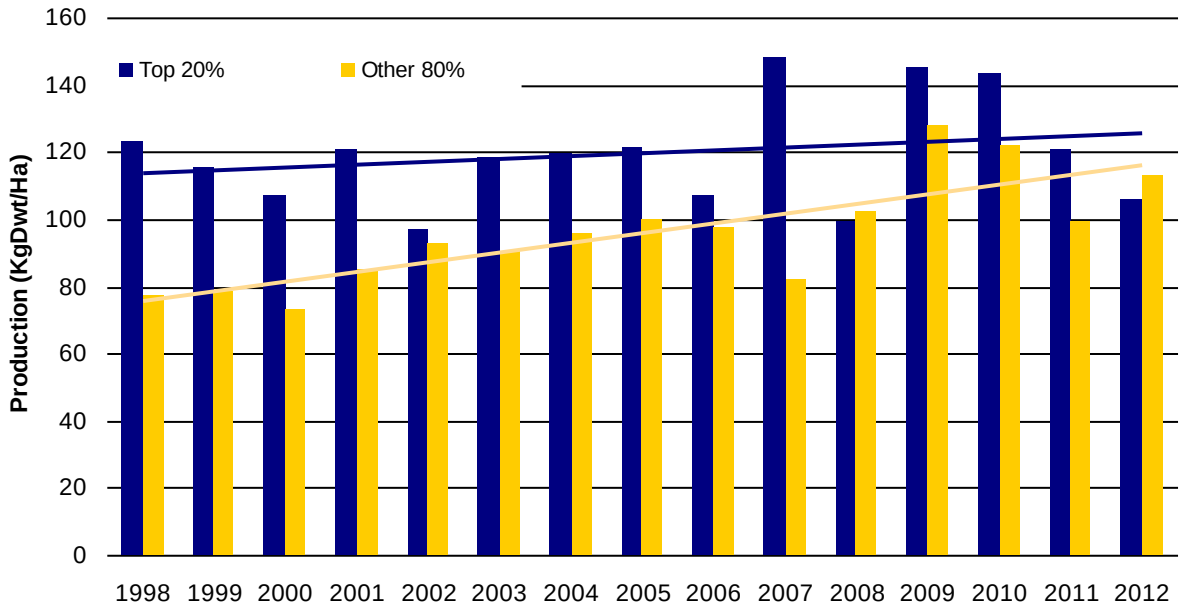
Whilst there is not clear evidence from the benchmarking of more producers being nearer their long term average economic limits for kilograms of lamb per hectare per 100mm of rainfall, there is a definite long term trend of increased production per hectare (Graph 1.08).

Graph 1.08: There has been a steady trend for increased prime lamb production per hectare over the last 15 years.



Of most interest in this data is that the increase in the average production per hectare is coming from the less profitable producers reaching production levels that the top 20% maintained for past 15 years (Graph 1.09). This raises two issues. The first is why the top 20% have been unable to increase production per hectare substantially over the fifteen year period benchmarked whilst improving profits. The second is why, when the levels of production from the less profitable producers have reached levels of the most profitable producers, the gap in profits is still as large as it ever was.

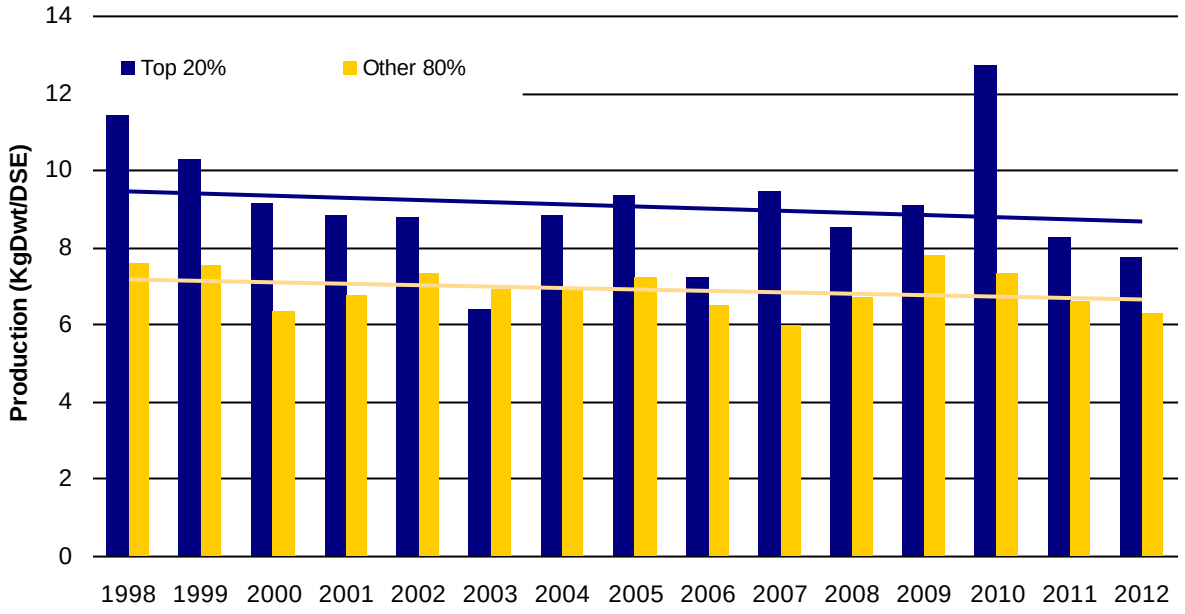
Graph 1.09: The less profitable prime lamb producers now have similar levels of production per hectare as the most profitable producers.



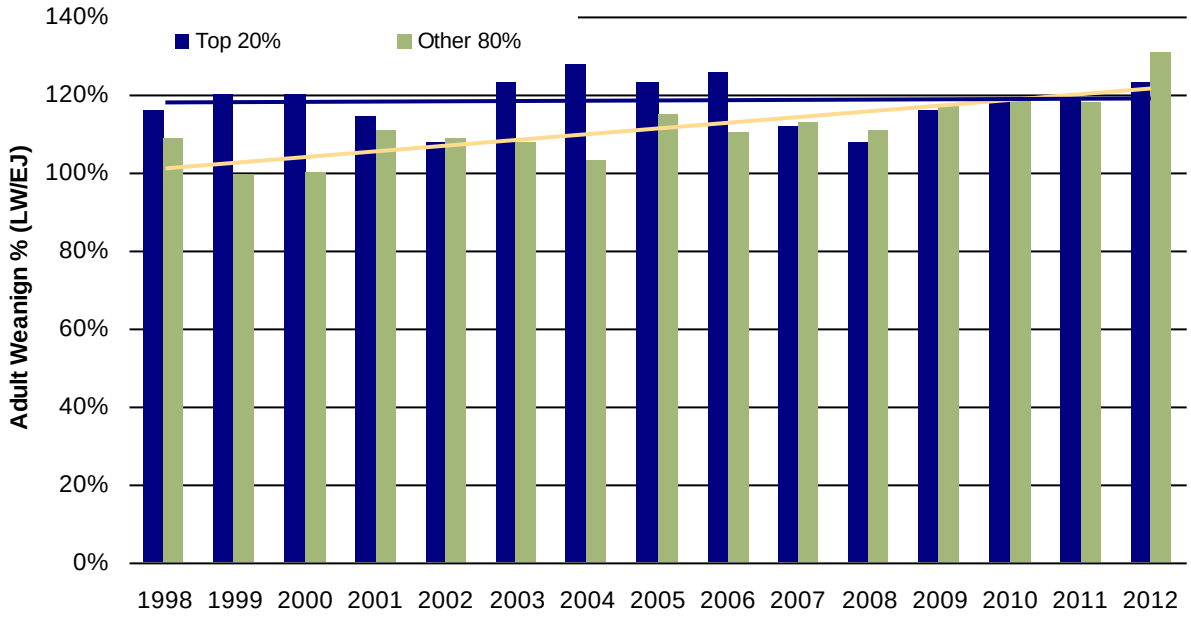
It is possible that the message on how to improve production per hectare has been well supported through various extension programs such as LTEM. What has not changed is the difference in production of lamb per DSE between the top 20% and the average for the previous 15 years (Graph 1.10).

Production per DSE is a function primarily of reproductive rate, growth rate to sale and sale weight. There has always been little difference in average sale weight between the top 20% and the remainder, and in recent years there has been little difference in reproductive rates between the top 20% and the average (Graph 1.11). This leaves the growth rate to sale as the most likely cause of differences in production per DSE.

Graph 1.10: The difference in production per DSE between the top 20% and the average have been maintained over the last fifteen years.



Graph 1.11: There is little difference in reproductive rates between the most profitable prime lamb producers and the average.



Choice of market, genetics, lambing and sale time, soil fertility, pastures, labour and all other inputs into the system are all a means to achieving a better combination of production, cost of production, and price than currently exists. The complexity of the interactions between these three things means that any one cannot be looked at in isolation.

As an example of the complexity, production per hectare is driven primarily by:

- The number of ewes run per hectare,
- The number of lambs produced per ewe run, and
- The weight of lambs when they are sold.

These add up to kilograms of lamb produced per hectare. There will always be compromises between these components depending on how the enterprise is structured. Lambing in autumn to target heavy weight export lambs at the end of spring will mean fewer ewes are carried per hectare than a late winter lambing system turning off lambs for the domestic trade at the end of spring.

The producer is then faced with the decision: should the aim be to produce a large number of smaller lambs or a smaller number of big lambs? This concept is depicted in Table 4. The net result of each movement will be at least partially dependent on enterprise mix, pasture resources and climate.

Table 1.4: The effects of production system on key profit drivers

	Autumn lambing for export market	Late winter lambing for domestic market	Late winter lambing for export market
Number of ewes	↓	↑	↓
Lambs per ewe	↓	↑	↑
Weight of lambs	↑	↓	↑

In theory the differences in price between target markets should account for differences in production per DSE and cost of production. In reality there is not enough producer awareness of how choice of target market affects cost of production. Price differences do not fully compensate for cost of production differences. Extension activities aimed at increasing producer awareness of these issues will help influence profits in the future.

Whilst some of the expenses in the benchmarking are termed ‘overhead’ expenses it is important for lamb producers to realise that they are not fixed. Expenses such as labour, motor vehicles, fertiliser, and administration costs are termed overhead because where multiple enterprises are run they need to be spread across those enterprises. Each expense however is a variable expense and producers need to understand how to adjust them to suit their potential production and income.

The most profitable producers have the expenses at an appropriate level by comparison to their potential income.

Producers also need to be aware that as production is increased, a point will be reached where every additional kilogram is costing more than it is worth (the concept of decreasing marginal returns).

In the majority of lamb enterprises there is still scope to improve production per hectare to lower costs per kilogram of lamb produced either through strategic or tactical decision making. The key issue for every producer is to be able to identify where those opportunities are and which ones have the best combination of cost and risk. This is discussed in more detail in section two.

2.7 Impact of current and future prices for lamb

Table 1.5 below shows where corresponding prices for the 2012 year were in relation to historical prices over the last ten years. Wool, lamb and mutton were near their all time highs for the decade as were steers. Cows, wheat and canola were nearer median levels for the decade.

The table also shows where the average cost of production was for the various commodities. It is clear that the gap between price and cost of production for wool was particularly good and this explains the exceptional profits that have been generated recently.

The gap between cost of production and price in lamb was healthy but not as wide. The gap between cost of production and price in beef is good in steers but much closer in cows. As cost of production in beef is measured over all kilograms produced (steers, cows and heifers) it is appropriate to take the average between the steer price and the cow price to get a price that relates more closely to the beef cost of production. When this is done the gap between beef cost of production and price is much closer.

Table 1.5: Price percentiles (2002 to 2012) and 2012 prices for common broadacre commodities

Percentile	17.5 Micron c/kg Clean	19 Micron c/kg Clean	21 Micron c/kg Clean	Lamb c/kg Dwt	Sheep meat c/kg Dwt	Steers c/kg Lwt	Cows c/kg Lwt	Wheat $/tonne	Canola $/tonne
100%	2275	1772	1526	690	504	223	178	490	800
90%	1606	1424	1286	514	412	207	156	335	609
80%	1384	1281	1103	482	316	198	152	283	568
70%	1306	1146	997	452	272	191	149	270	**543**
60%	1245	1085	963	413	217	187	145	247	510
50%	1183	1044	898	382	199	181	140	229	474
40%	1132	1005	854	357	186	176	137	201	424
30%	1070	963	809	344	172	171	134	192	406
20%	1027	936	758	331	161	166	131	174	369
10%	984	908	736	307	139	157	125	160	338
0%	852	774	652	181	18	123	95	129	270
2012 Price	**1609**	**1444**	**1319**	**468**	**348**	**204**	**147**	**208**	**530**
2012 CoP		**838**		**370**		**120**	**120**	**212**	**530**

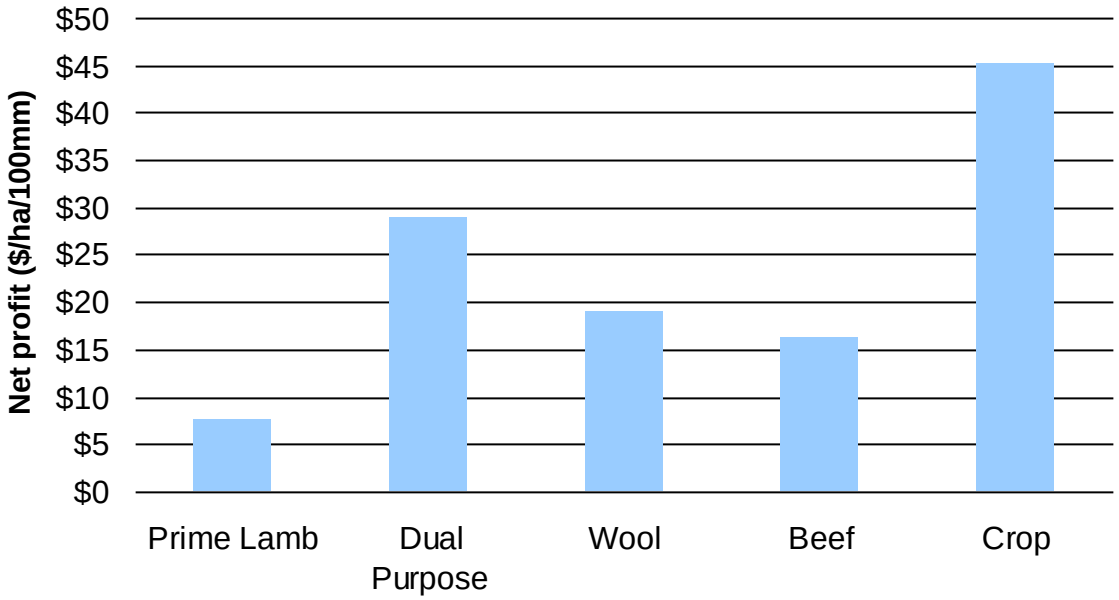
Nearest percentile to 2008 price

Source: Information Commodity Services

The other notable outcome of this comparison is that average wool and beef cost of production is a lot closer to the lowest price deciles over the last decade than lamb, wheat or canola. The implications of this are that these businesses appear as if they are in a more resilient price position for fluctuations in the current market than either lamb or the crops.

From the preliminary 2013 data set it appears that this has played out with wool profits exceeding lamb profits on the back of a drier season and a fall in prices (Graph 1.12).

Graph 1.12: Preliminary 2013 benchmarking data suggests prime lamb will be the least profitable enterprise in 2013 benchmark year.



2.8 What lamb price is acceptable?

Long term benchmarking shows that producers with average levels of profit historically retain 25% of their gross income as net profit before interest, lease and tax. As the average cost of production is currently around $3.70 per kilogram dressed weight inclusive of skins, the average price received inclusive of skins will need to be $4.60. Assuming a skin value of $12 on 20kg dressed weight the skin free price needs to be above $4.00 per kilogram to maintain average levels of profit at present.

2.9 Summary

The main points from this section are that the current long term average returns from lamb and dual purpose enterprises are quite good. The only thing that makes lamb look slightly less attractive is a recent comparison to wool. That comparison highlights every commodity gets its time in the sun.

Lamb production in lower rainfall environments is the only area where lamb looks to be underperforming by comparison to other enterprises.

Benchmarking provides a skewed sample of the industry and results of this analysis need to be interpreted in light of that fact. Within the benchmarking database, the gap between the top 20% levels of profit and the average appear to be increasingly dependent of the differences in costs structure rather than production levels per hectare.

Prime lamb production per hectare continues to increase year on year. Whether this is a direct result of extension targeting increases in per hectare production is not known. Regardless producers are clearly improving that key performance indicator over time.

The two barriers for further improvement appear to be that the most profitable producers seem to have hit a ceiling in prime lamb production. This may be because as they strive to increase production beyond this point the marginal costs exceed the marginal revenue. As a consequence the increased production results in reduced profit.

The other barrier is in helping producers increase their production per DSE. It appears that the most limiting factor for production per DSE is growth rate to sale.

At the more profitable end of the industry it appears that the opportunities to be even more profitable are going to come from the ability to be more feed and cost efficient. This needs to be based on the assumption that very few costs on farm are fixed and therefore all strategies need to be fully costed. Gross margin analysis will be inadequate to lead the most profitable producers forward.

3 Keys to profitable lamb production – beyond 2012

3.1 Directions to improve flock profits

The gap between the top 20% levels of profit and the average appear to be increasingly dependent on the differences kilograms of lamb per DSE and cost structure rather than production levels per hectare. This is an area for future extension activity to help producers understand how to:

1. Adjust the production system allowing more efficient production per unit of energy intake (production per DSE) whilst allowing costs to be controlled.
2. Adjust all variable expenses in the system to better match the potential production on their farm.

3.2 Productivity gains

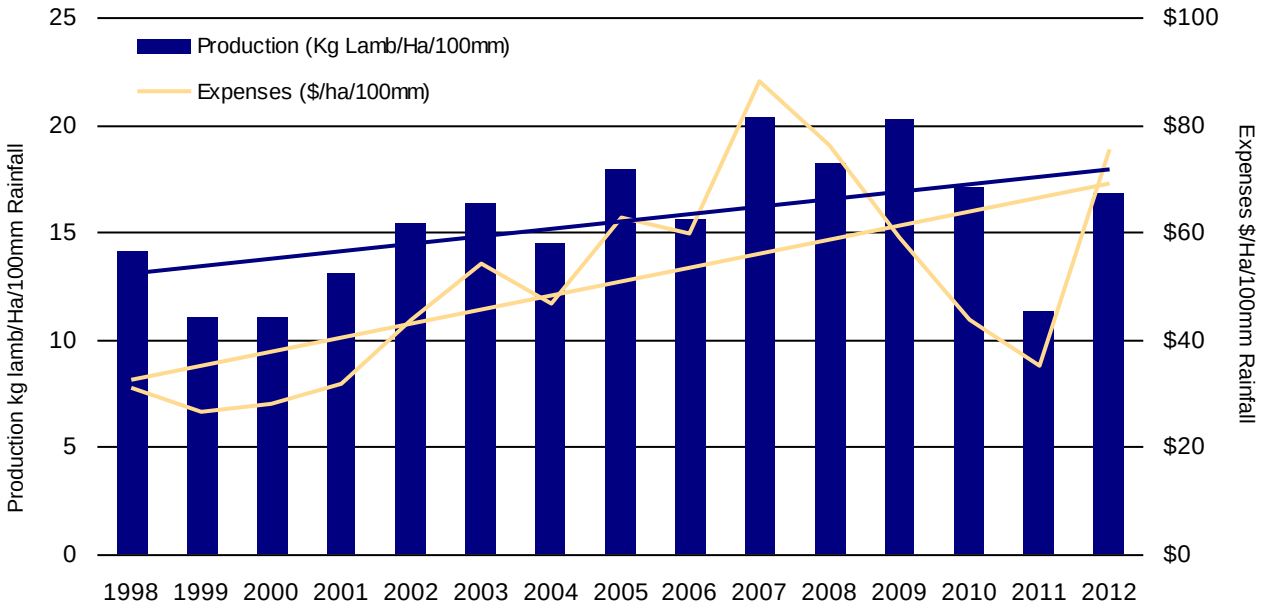
The production and cost of production of specialist prime lamb flocks over the past fifteen years (1998 to 2012) is shown in Graph 2.01.

Production is measured as kilograms of lamb per hectare per 100mm of rainfall received for the year. Despite year to year variation in this key performance indicator being driven by year to year variation in rainfall the trend indicates that production gains are being had independent of rainfall.

Variation due to rainfall is reflected in escalating or falling costs per hectare per 100mm of rainfall as well.

The variation in production and costs per 100mm of rainfall received also highlights the inability of producers to substantially adjust production to rainfall. There are opportunities for producers to improve this part of their business through tactical management of stocking rate and ewe and lamb nutrition. Technologies that allow for more timely and accurate pasture budgeting will be welcome in the industry.

Graph 2.01: Average productivity and expenses per hectare per 100 millimetres of rainfall for lamb flocks 1998 to 2012.



Source: Holmes Sackett Pty Ltd Benchmarking Database 1998-2012

Graph 2.02 shows the trend in cost of production for a group of lamb producers since 1998. In nominal (not adjusted for inflation) terms there is a significant trend upwards in cost of production. The average cost of production in this period has increased by 100%. The same analysis in beef showed a 50% increase over the same period which means beef producers have done a much better job of controlling cost of production.

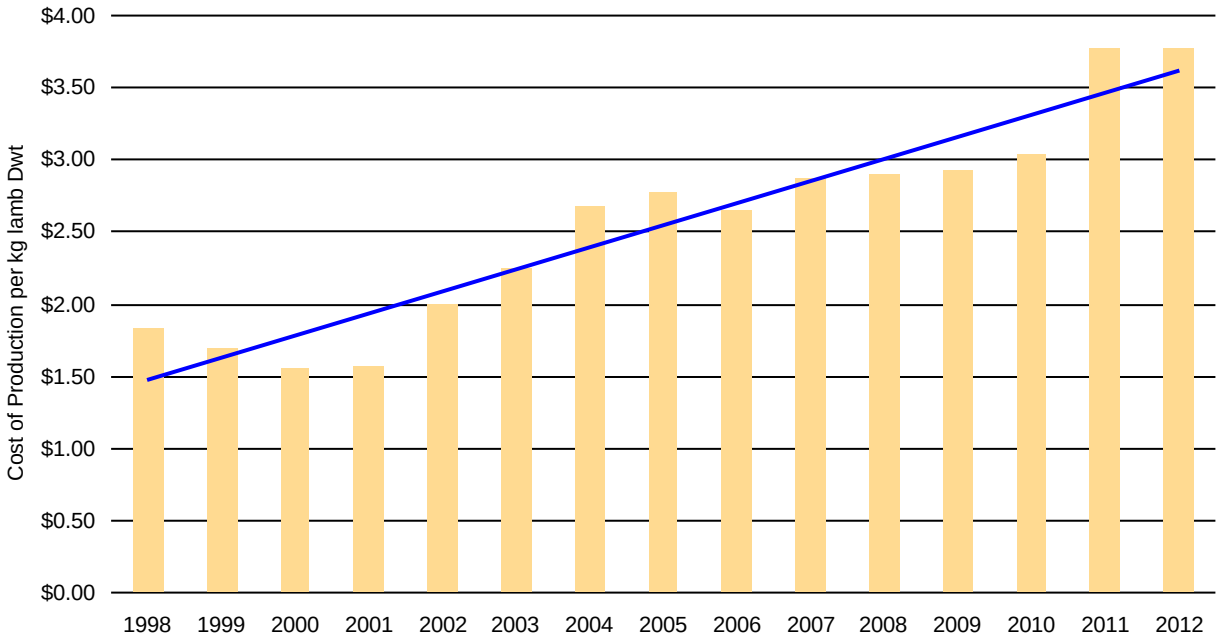
The reasons for the more rapid increase in cost of production in lamb as opposed to beef are not immediately evident from benchmarking data however it is possibly a consequence of the lamb industries heavy emphasis on chasing production gains alone.

As was shown in Graph 2.01, these enterprises have achieved increased production but this has been achieved with ever increasing cost. Decreasing marginal utility of existing technologies limits how far the individual producer can chase production and still benefit financially.

It appears that the most profitable producers find themselves (not unsurprisingly) in a position where gains in production without commensurate increases in costs are incremental now. These producers are waiting for new technologies and/or to work out how to better use old technologies to make significant gains.

The average producer, who is not seeing the financial benefit of the production gains they have made, needs to understand how to use the existing technologies available to them in a manner that delivers the same production but at a much lower cost.

Graph 2.02: Nominal lamb cost of production trend 1998 to 2008



Source: Holmes Sackett Pty Ltd Benchmarking Database 1998-2012

3.3 Changing cost of production

Cost of production is a ratio with total cost as the numerator and total kilograms produced as the denominator. For example, a flock that produces 100,000kg Dwt of lamb for a total cost of $200,000 has a cost of production of $2.00 per kilogram Dwt.

$$\frac{\$200{,}000 \text{ cost}}{100{,}000\text{kg lamb}} = \$2.00/\text{kg Dwt}$$

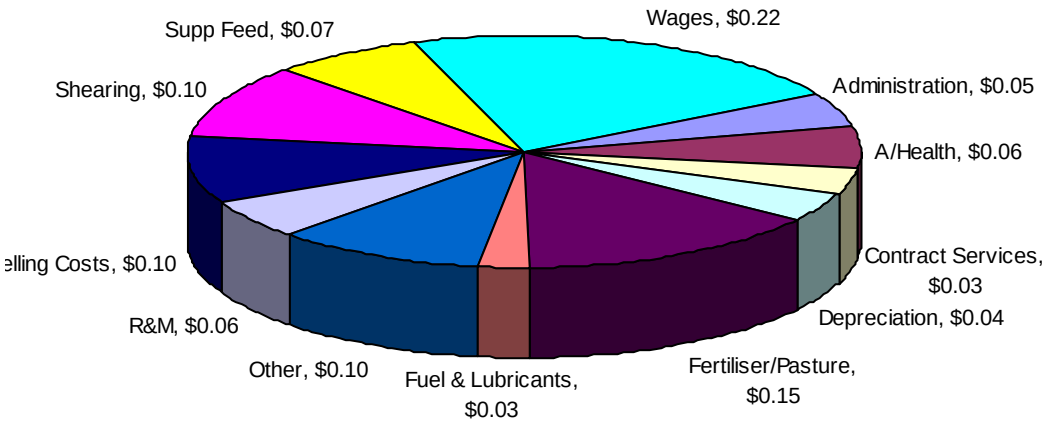
Therefore cost of production can be altered by increasing production providing any associated cost increases are of a smaller proportion. Alternatively cost of production can be reduced by reducing costs whilst maintaining production. Both of these options are discussed below. All cost

of production data are before financing costs (interest, lease, etc.) and do not make any allowance for the cost of capital in business (land, stock, plant).

3.4 Cost reductions

The factors that make up the cost of production are important when determining where to direct priorities to lower production costs. Graph 2.03 shows the average components of each dollar spend on producing a kilogram of lamb in 2012.

Graph 2.03: Components of lamb production costs per $1 spent



Source: Holmes Sackett Pty Ltd (2009-2012)

For many flocks the greatest potential for reducing production costs in the business will be via a reduction in the labour and labour related costs. These principally include wages, but also selling costs, shearing, fuel and lubricants and contract services. Costs which directly impact potential productivity such as fertiliser, and supplementary feeding are the next most important categories.

Any reduction in these costs needs to be achieved without an equivalent impact on production to be effective. Alternatively technologies need to be extended that allow more production to be gained from the same input cost in any of these categories.

The smaller differences in production per hectare between producers with average levels of profit and top 20% would suggest that there is room for carefully selected reductions in these cost items with perhaps some fall in production but not an equivalent fall in value terms.

3.5 Increase production

The sources of increased production can be divided into two categories, those that can be achieved by implementing existing technology and those that will rely on as yet unknown

technology. It appears that the most profitable producers are struggling to find existing technology that will increase their production whilst also increasing profit. This means new technology will be required.

3.6 What are the priorities?

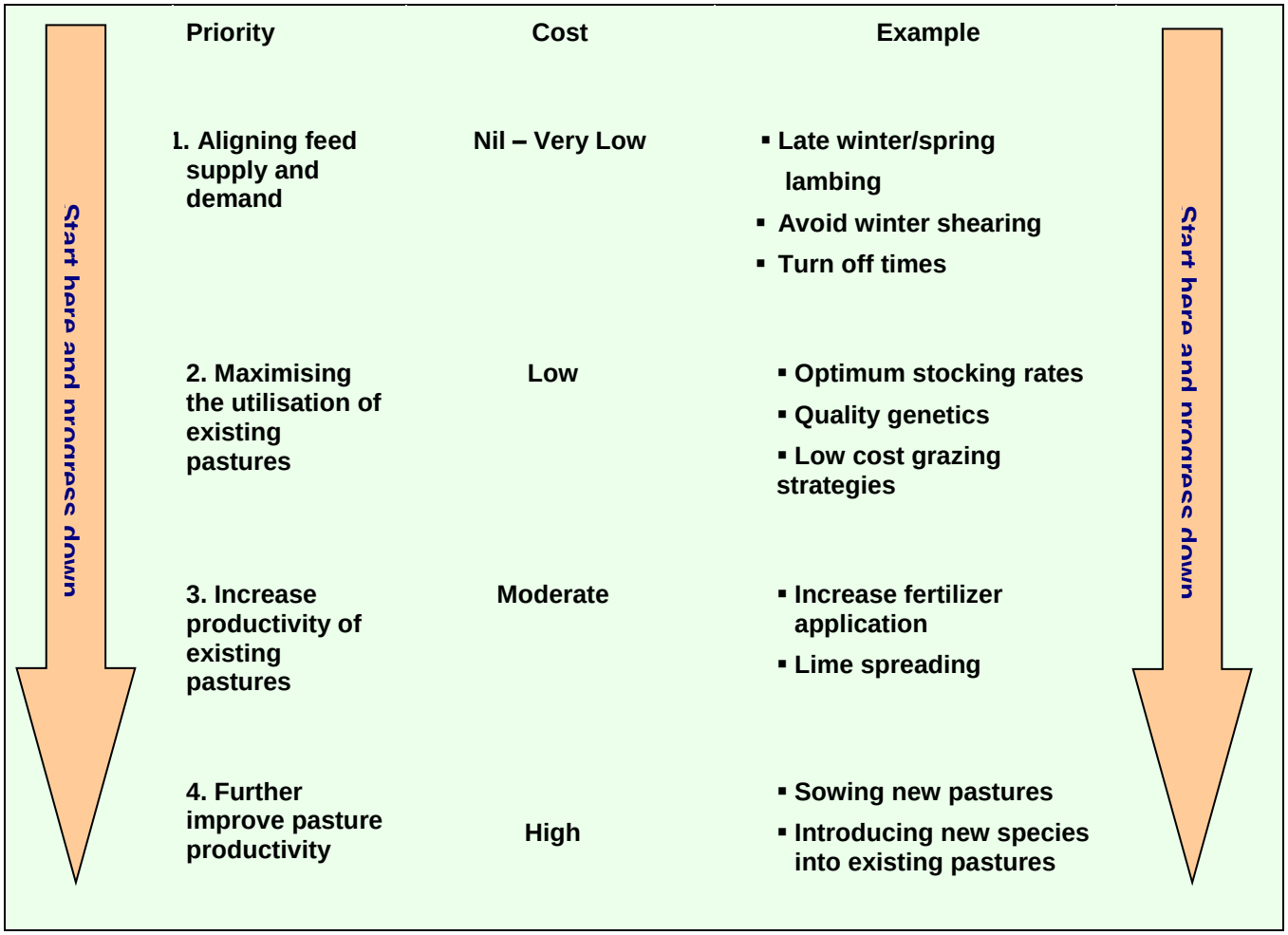
In any business there will always be some factors that result in relatively easy gains. These will include the implementation of low or nil cost strategies that improve productivity. Examples might include an adjustment of lambing time to improve average growth rates to sale, or an adjustment of target condition scores to allow a higher stocking rate.

When it comes to per hectare production, the focus is about growing and using pasture. The place to start is to ensure pastures currently grown are being efficiently utilised. It makes little or no sense to grow more if it is already being wasted. This message is distinct from the message that all pasture should be utilised. As with any key performance measure there will be an optimum level of utilisation achievable which strikes a balance between the waste incurred from not having enough stock to consume pasture in the spring and the additional supplementary feeding required in autumn and winter because pastures are unable to meet demands.

Once utilisation is improved the next step is to produce more pasture as cheaply as possible and to match the increase with increased stock numbers. Typically the most important technology in this step is fertiliser. Grazing techniques such as mobbing up which requires no investment in additional infrastructure can also be considered as a low cost strategy.

Once the productivity of existing pastures is improved, it is time to invest in the essential but longer payoff strategies such as lime application, grazing strategies involving infrastructure investment or sowing new pastures. These priorities are illustrated in Figure 2.1.

Figure 2.1: Suggested program for improved productivity

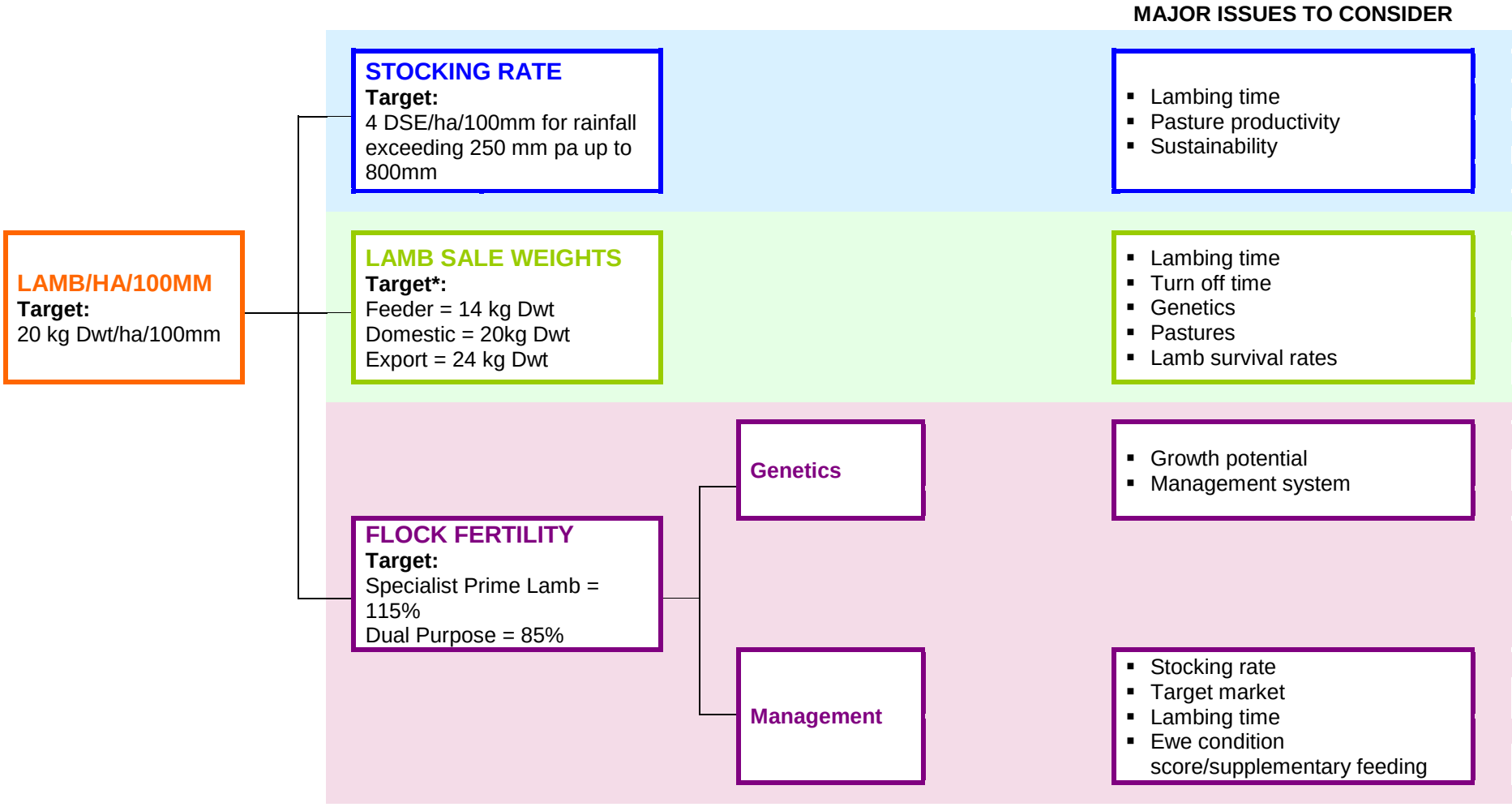


3.7 Per head or per hectare

One of the key changes that is required to focus on cost of production and hence profitability is to move from thinking about per head returns to per hectare returns. Per head measures that are commonly used include price per head, sale weight per head and lambing percentage. This is the single most common mistake in thinking in prime lamb flocks. If a lamb producer measures flock performance primarily by these measures they are missing the main story. It is not that these measures are irrelevant but rather they are a means to an end, not an end by themselves. Optimum per hectare performance comes at the cost of some per head performance.

Table 1.3 demonstrates that the more profitable lamb producers produce more kilograms of lamb per hectare for a lower cost per kilogram produced (not the maximum individual kilograms of lamb per hectare at any cost). The principals relating to how, are pictured in Figure 2.2.

Figure 2.2: Factors that influence per hectare production of lamb



***Note: These are suggested optimums. Producing heavier lambs in many cases may reduce overall profitability due to the high cost of additional kilograms**

Suggested target productivity for prime lamb production is 20 kg/ha/100mm. The three key influences of this productivity target are:

Stocking rate

The key time of year to measure stocking rate for most regions where prime lamb is produced is early to mid-winter (June/July).

Where there is a winter dominant rainfall the best rule of thumb is the French Shultz model which suggests an optimum stocking rate of 4 DSE/ha/100mm above 250mm. This model provides a guide for those regions in the range of 400mm and 800mm rainfall. For those regions that fall outside these rainfall conditions then look for local benchmarks.

It is stressed that these are generic targets and they need to be tailored to the individual farm. Some farms with poor quality soils and low quality land classes will be constrained by environmental issues well before they reach these stocking rate targets. It is important that these stocking rate targets are long term targets – it is no good meeting them one year at the expense of longer term productivity. It is also no good meeting them in a particularly dry year where they have become unrealistic.

Determining long term optimum stocking rates that meet profit and environmental objectives is one of the hardest decisions in livestock production but it is too important not to get it right.

Increasing stocking rates will have major interactions with lamb liveweight and flock fertility because individual animal performance will be suboptimal where per hectare performance is maximised. To help manage these negative impacts attention should be payed to lambing time, pasture production and supplementary feeding. Choice of lambing time will determine how closely ewe and lamb requirements are matched to pasture availability. At higher stocking rates you will also need pastures that are able to persist and provide adequate ground cover in autumn, which will be a function of species selection and soil fertility.

Lamb weight at sale

Lamb liveweight targets are dependant on the choice of market, i.e. feeder lambs, domestic market lambs or export lambs. Each market requires a different length of time to reach and therefore requires a lambing time further from the optimum from the point of view of matching pasture availability to ewe requirements or the pasture quality available for high growth rates in the lambs.

With this in mind the target should be the minimum requirement to meet the market specifications that is aimed for, 24kg for export lambs, 18kg for domestic lambs and 14kg for feeder lambs. Producing lambs heavier than these targets will often achieve a higher per head price but will come at a cost of lower per hectare production. Consideration should be

given to genetics, specifically in relation to the Australian Sheep Breeding Values (ASBV) of rams used in order to ensure that they arrive at target weights at the right fat score.

Flock fertility

Flock fertility is important but not at any cost. The two key opportunities for improvement are through genetics and management. Maternal Central Progeny Test (MCPT) results show that genetic selection for improvement in fertility can make the prime lamb production system more profitable. Given that superior genetics are virtually free with the exception of a small premium for the ewes or rams they are worth pursuing. As with any selection criteria, selection for fertility needs to be considered in the context of what gains are being sacrificed in other traits. There are tools available such as ASBV's that allow this to be efficiently undertaken.

Management can influence fertility through choice of joining time to best fit the compromise between the seasonal oestrus activity (increases into autumn) of the ewes and condition score at joining (often decreases into autumn). Usually the joining decision is based more on the target market for the lambs. Management decisions also relate to tactical supplementary feeding and stocking rate decisions in order to meet optimum condition scores in sheep.

Unlike genetics, management influences usually come at a significant cost and therefore the sums must be done carefully to ensure that the strategies and tactical changes are profitable from season to season. Too many flocks achieve higher lambing percentages at the cost of low per hectare production or irretrievable additional costs. It is important to avoid that trap.

3.8 Increasing enterprise scale

The traditional 'get big or get out' has long been one of the methods that farmers have used to improve efficiency. It offers a simplistic recommendation to what is a complex issue.

Firstly some farms do suffer from a lack of scale at the whole farm level. These will typically be those that have less than $4-6 M invested in the business. At todays land values of approximately $300/DSE, that represents about 14,000 to 20,000 DSE.

The issue is largely one of attitude because it relates to the ability to spread the income earning potential over the overhead labour cost of one full time operator. It is attitudinal because there are two options to fix this problem. The labour unit can be reduced to part time or scale can be increased.

The issue of scale is normally a problem at the whole farm level not specifically at the enterprise level because the required farm scale may be achieved with two enterprises, for example 6,000 DSE of sheep and 500 hectares of crop. For most farms scale is more about the whole business than it is about individual enterprise size.

If lack of scale is currently limiting productivity and resulting in an uncompetitive cost of production there are a number of options:

- The farm can be treated as a part time job and surplus labour can be sold to someone else.
- The business can be expanded by intensification; that is producing more from the current area.
- The farm can expand through leasing or acquisition.

On many farms the second option is quite possible by improving the pasture utilisation and productivity and then by running the most efficient lamb production system to harvest that pasture. The advantage of this approach is that it tends to be relatively low cost compared to going out and buying the farm next door, particularly at current land prices.

If the current farm is at its productive limit, which the majority are not, the next option for expansion is with additional land. This can be done by owning the land or by paying for the right to use someone else's land, for example, in a leasing arrangement. The advantage of leases are that they are require only sufficient working capital for running costs and stock purchase so they represent a means of expansion when capital is limited. Unfortunately during the last couple of years the price being paid for leases has increased substantially. That might be fine for high profit farms or during periods of high commodity prices but it does present some risk if commitments are made over a longer term lease.

3.9 Capital appreciation

A common mistake in the analysis of farm business viability is to ignore the return from capital appreciation. Over the last fifteen years capital gains have produced two thirds of the total farm business returns. It is capital gains that make seemingly unviable (producing operating losses) businesses actually very viable.

3.10 Labour

The ability to lower labour costs is a source of significant potential wealth from most farm businesses. Labour efficiency is not just about how much time is spent in the business, it is also about where time is spent.

The issues of labour efficiency and the associated costs are important because labour is a very large component of total farm costs. Direct labour costs typically make up 35% of the total expenses for the farm each year, and when indirect costs are added this can easily be 50%. To provide some idea of the importance of this issue, the labour efficiency for flocks of varying profitability is shown in Table 2.1. A lamb producer should be targeting labour efficiency of 8,000 DSE per full time unit inclusive of shearing and crutching labour.

Table 2.1: Labour efficiency and flock profitability

	Bottom 20%	Average	Top 20%
Dual purpose	5,600	6,300	6,600
Prime lamb	6,000	7,000	7,700

Source Holmes Sackett Pty Ltd Benchmarking Database2012
Note; includes shearing and contract labour

To help interpret the figures, it is reasonable to assume that one ewe is equivalent to 2 DSE so a reasonable target is 4,000 ewes per full time equivalent inclusive of shearing and crutching which typically make up nearly half of the labour requirements. If shearing and crutching are excluded then the task is 8000 ewes.

Because the ability to generate farm income is the number one profit driver, labour cost per hectare should not be reduced at the expense of the equivalent or more farm income. That will invariably be an unprofitable thing to do. The aim should be to either earn the same amount of income with less labour or earn a greater amount of income with the same labour.

3.11 Genetics

Numerous research and extension programs have highlighted the potential impact that the selection of better genetics can have on your prime lamb business. The use of Australian Sheep Breeding Values (ASBV) when making sire purchasing decisions can have substantial implications to flock profitability.

A ram purchased that is capable of producing progeny 2kg heavier than your current average liveweight of lambs sold, joined for four years at a ram to ewe ratio of 1.5% in a flock of ewes that average 115% lambing with five year average prices of $3.00 per kilogram dressed weight inclusive of skins will return the buyer an additional $600 worth of income after future cash flows are discounted back to today's dollars at a rate of 15% per annum. This means that the buyer can spend up to $600 more than the price paid for rams of their existing quality and before a loss is incurred.

This is not to say that the buyer should spend that much on the ram of superior quality as the less spent the better the return and this is one area of the business where very high returns can make up for much lower returns in other areas.

For self-replacing flocks or where first cross ewes are being purchased for prime lamb production, the rams used to breed the replacement ewes can also have a big impact on profitability. This was well researched in the Maternal Central Progeny Test where substantial variation in weight of lamb produced per ewe was found to exist depending on which sire was used.

In the final report of this project, compiled by the NSW and Victorian Department of Primary Industries, as well as the Australian Sheep Industry CRC, it is reported that the maternal sires can substantially influence all of the key profitability traits of their daughters including lambs weaned per ewe joined, growth rate, carcass conformation, meat yield and wool traits.

The relative weighting of traits will vary according to the enterprise that is being run. Dual purpose enterprises, having more wool income, need to put a lot more emphasis on the wool traits than a specialist prime lamb enterprise. Given the returns available from improved genetics it cannot be stressed enough how important finding the best genetics is for the prime lamb or dual purpose enterprise.

3.12 How resilient is my business to unfavourable seasonal conditions?

Comparison of benchmarking performance prior to and during the 2006-07 drought confirmed that it is not how the farm is operated in the seasons prior to the drought that determines the impact that it will have on the business, but rather the planning processes before and tactical decision making during the drought that are critical. Simply, those who were more profitable prior to the drought because of their increased productivity also tend to be more profitable in the drought years.

The aim in drought years should be to minimize the losses that are incurred by the system. The quandary faced by any producer in a drought year is that the earlier action is taken to minimize the losses, the lower the impact on the business. Conversely acting early is often difficult as the actual outcome of the season is not known at the critical time at which actions must be taken. A range of decision making tools that help producers quantify costs and losses of early action would be useful for making such a decision.

3.13 The path over the next five years

There are a large number of potential areas for improvement in productivity and it would be unlikely that the individual producer is at the limits of available knowledge and technology for all of them. These opportunities have been mentioned throughout this document but in summary include:

- A more prudent cost structure for the target market.
- Improved balance between pasture utilisation, stock condition and supplementary feeding.
- Improvements to fertility of soils and pastures
- Improved labour productivity

The process of reviewing these potential areas for improvements in profitability of the enterprise should be continual and should be based on identifying and implementing those

changes that are going to provide the best return for the least cost. Improvement is an evolutionary process and developing a systematic and methodical way of capturing the benefits is critical.