

Project : M 958

Valuing Australian Lamb
— Analysis of the lamb industry's benchmark
\$2 billion by 2000

Prepared by Lange Analysis P/L

For

Meat Research Corporation

&

the Lamb Strategy Team

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About this report

As part of the Interim R & D program to support the Lamb Industry Strategic Plan, the Meat Research Corporation commissioned research to calculate the best estimate of the industry value of lamb.

This research was undertaken by Lange Analysis P/L.

Objective of the research:

To produce a benchmark on the value of the Australian lamb industry to track the progress of the industry towards \$2 billion by the year 2000.

An Excel spreadsheet is part of this report. The spreadsheet calculates the value of the lamb industry given the industry raw data. It was developed to enable industry members to monitor the progress of the lamb industry towards \$2 billion by 2000.

This report consists of a definition of key terms used in the calculation, an outline of the method used in the value calculation and the result of that calculation. It concludes with some issues "brought to light" as a result of this research project .

Definition of key terms

- Lamb:** Meat cuts (including offal) from a male or castrate male or female ovine with zero permanent incisors and no secondary sex characteristics.
- Co-products:** Any non meat product such as skins.
- Carcase weight equiv.(cwe):** A unit of measure consisting of the boneless weight of a primal and its equivalent weight of bones when untrimmed.
- Retail weight (rw):** The final weight of the cut which is sold to the consumer — often this cut will be boneless, however, in the case of lamb, a significant quantity is sold bone-in.
- Value added cuts of lamb:** Those cuts which have undergone significant trimming or are mixed with other ingredients. Within the Neilsen research survey, there are over 300 lamb cuts which make up the average price for value added lamb referred to in the value calculation.

Introduction

The benchmark for the Lamb Industry Strategic Plan (LISP) is \$2 billion by 2000. However, we need to be able to identify the value of the lamb industry now.

This project determines a method of calculating that value using industry statistics. The value estimate relates to the 1995 calendar year

Criteria for the value estimate

In determining this value estimate, a number of criteria were established. The value estimate needed to be calculated from industry statistics that:

- were published or readily available;
- sustainable so that stakeholders in the industry could readily duplicate the value estimate;
- was easily understood;
- relevant to the decision making of stakeholders; and ,
- could be disaggregated to a state level and to lower levels of production systems

What does the estimate measure?

The value estimate measures the transactions of the product to the point where the product is sold by an industry stakeholder to one with no or little vested interest in the industry.

After this point, any additional “value adding” to the product is not able to be captured by the industry.

Given this cut off, the value was calculated at the consumer level in the Australian market and at FOB level for the Australian exports market of lamb.

What about the Industry's Value Chain project?

The approach used to determine the value of the industry is consistent with the Value Chain research commissioned by MRC and conducted AACM.

Unfortunately, this Value Chain doesn't isolate lamb from sheepmeat in its calculation of the value of the industry. It does however:

- segment the industry based on the distribution of all products along the marketing chain;
- take a whole approach to valuing the market by including related industries such as other meat processing and tanning and in doing so broadens the definition of who is a stakeholder in the industry; and,
- standardize the units of measure to allow a comparison along the marketing chain ie a "apples vs apples comparison"

Method used in the value calculation

The industry value was derived using the simple formula:

$$Value = Volume \times Price$$

The value estimate itself, is a sum of the following market segments:

- retail market in Australia
- foodservice market in Australia
- export markets for lamb (including offal)
- export markets for live lamb
- a selected co-product — lamb skins

The retail market in Australia

$$Retail\ Value = retail\ volume \times retail\ price$$

The **retail value** of lamb in the Australian markets is an estimated retail volume sold by butchers and supermarkets multiplied by the average retail price of lamb sold by butchers.

The retail volume is derived from the wholesale volume collected by the Nielsen survey. This survey collects wholesale volume, value and price statistics for lamb from butchers and supermarkets and also collects retail volume, value and price data from butchers (Retail information from supermarkets is not collected).

The wholesale volume and price statistics are reported by AMLC in the publication “Meat Marketing Statistics” and could be used for the value calculation.

However, this wholesale volume overestimates the quantity of volume sold to the consumer and wholesale price underestimates the final price received from the consumer. To use this data to determine the value of the retail market, would assume:

- all the product that is purchased is sold to the consumer when in reality there is additional trimming of bone and fat; or

- the product only realises an increase in unit price which is proportionally equivalent to the yield loss of weight from trimming and value added preparation.

Instead the components used to calculate the retail value are actual retail volumes and values which captures the changes in volume and value

The **retail volume** converts the wholesale volume of both butchers and supermarkets to a final retail sales weight. This retail sales weight is estimated from the Neilsen retail survey of butchers. Although, the volume data in this survey under-represents the market, by using the mix of product sold by butchers, we can determine the percentage of bone-in product of the total product sold by butchers.

Applying this percentage to the wholesale volume, gives the share of product which is sold at retail with bones. What is not sold bone-in, is sold boneless, hence, the remaining wholesale volume is multiplied by 0.5 (given an industry average yield of 50%) to give the weight of boneless product sold at retail

The **retail price** is the average retail price for lamb given by the Neilsen retail survey of butchers as published in the AMLC's "Meat Marketing Trends" was multiplied to the retail volume figure to determine the retail value.

The Neilsen data is readily available to industry and is a good source from which to estimate retail value. In using the data we assume:

- supermarkets and butchers act similarly in the product mix sold at retail
- competitive forces make the average retail price received by butchers are similar to average retail prices received by supermarkets

The foodservice market in Australia

$$\text{Foodservice Value} = \text{foodservice volume} \times \text{foodservice price}$$

To determine the **foodservice value** for lamb, a proxy for the foodservice price was multiplied by the volume of lamb sold through the foodservice channel.

The **foodservice volume** is taken from the bi-yearly BIS Shrapnel survey of the Australian Foodservice market (4th edit) last conducted in 1994. Although, this statistic is somewhat dated, it is the only estimate for the foodservice market. This foodservice estimate can be updated soon with 1996 data from the BIS Shrapnel survey currently being conducted.

There is no unit **foodservice price** paid for lamb sold through the foodservice channel from existing industry data sources. Therefore, the average retail price of value added lamb became a proxy for the price of lamb sold through the foodservice channel

The value of the Australian market:

The total value of the Australian market based on the is a sum of the survey data from Neilsen and BIS Shrapnel.

$$\text{Total Australian value} = \text{Retail value} + \text{Foodservice value}$$

This formula should also include sales of processed product. However, there are no industry statistic of the

which isolate lamb from the other ingredients of processed products.

By excluding processed products, the value of the Australian markets may be conservative.

The approach adopted in this report relies on the ability of the two surveys to extrapolate the survey data to predict the total market. In using this approach, it gives the industry an ability to:

- segment the total market into retail and foodservice markets; and,
- estimate with greater accuracy per capita consumption of lamb

Concern may arise as to the use of survey data to estimate the total market despite the reasons for using that method such as the ability to estimate “real” consumption by state and others as outlined above.

If this is the case, the value of the Australian market could be calculated using domestic utilisation for volume in retail weight terms multiplied by the average retail price from the Neilsen survey.

Using this method, retail volume is calculated as follows:

$$\text{Domestic utilisation} = (\text{Total production} - \text{Exports} + \text{Imports} + \text{Beg. stocks} - \text{End stocks})$$

The components on the right of the equation are statistics published by ABS in carcase weight equivalent terms. This unit of measure is converted to boneless weight assuming a yield of 50 percent as follows:

$$\text{Domestic utilisation (retail weight)} = (\text{Domestic utilisation}) \times 0.5$$

This method, using the domestic utilisation formula, has the advantages of:

- using market data which is well recognised by the industry; and
- is not reliant on survey data to estimate the total market

However, the disadvantages of this approach means the value estimate is:

- a total estimate of the Australian market without segmentation for retail and foodservice markets;
- can not determine the proportion of lamb sold as bone-in at the retail level. This resulting calculation underestimates the volume of the market and hence underestimates the value of the Australian market; and,
- includes lamb used for non-human consumption purposes such as pet food.

Given the loss of flexibility with the second method, this report alerts readers to its existence but recommends the first approach to estimate the value of the Australian market.

The export markets for lamb and live lamb

The **value of lamb on the export market** was calculated using the average per unit value of lamb based on ABS data multiplied by the export volume of lamb and co-products based on AMLC data.

The **value of live lamb exports** were derived from AMLC data for live sheep under 12 months of age.

Other assumptions behind the value calculation

- Only edible offal was included with the value of lamb sold at retail and that sold on the export markets. Non-

edible offal such as runners used for sausage casting do not differentiate lamb from hogget or mutton.

- The value of offal sold through foodservice was not available from industry data and so could not be estimated.
- There are a number of co-products produced by the lamb industry including that sold for pharmaceutical purposes, leather products and pet food. However, relatively few of these co-products are reported by industry statistics. The major co-product for which data existed, and so included in the calculation, was the value of lamb skins.

Valuing The Australian Lamb Industry: \$2 Billion by 2000

The value of the Australian lamb industry

Below is the summary table showing the value of the lamb industry as calculated by this project. On 27 August, a preliminary calculation was presented to the Lamb Strategy Team.

industry includes stakeholders such as tanners. As result, edible offal and the selected co-products of skins were added to the value calculation on the lamb industry.

At this presentation, the LST recognised the value industry produced more products than just meat. In addition, the lamb

This increased the value of the industry from A\$1335.0 million to A\$1478 million. The industry needs to lift its earnings by A\$522 million to achieve \$2 billion by the year 2000.

Summary table of the estimated value of the Australian lamb industry

Market/Channel	Unit	Current position 1995 CY (A\$ millions)	Target by 2000 (A\$ millions)
Australian retail market for lamb (incl offal)	Retail value	\$ 1,033.3	\$ 1,200.0
Australian foodservice market	Retail equiv. value	\$ 81.3	\$ 200.0
Australian lamb exports (incl offal)	FOB value	\$ 179.1	\$ 350.0
Australian live lamb exports	FOB value	\$ 46.8	\$ 50.0
Selected co-product - lamb skins	wholesale value	\$ 137.5	\$ 200.0
Total value (incl. co-products)		\$ 1,478.0	\$ 2,000.0

Concluding comments

Variable	Unit	NSW	Vic	Qld	SA	WA	Tas	Australia
Domestic utilisation	tonnes cwe	58,200	92,518	5,064	20,670	11,943	7,640	198,756
Estimated sales volume	tonnes cwe	105,262	50,234	32,524	13,867	19,900	8,042	229,829
Surplus/deficit indicating possible interstate flows	tonnes cwe	47,062	-42,283	27,459	-6,803	7,957	401	31,073
“Surplus” demand for lamb	tonnes cwe							31,073

Although the final value of the lamb industry is based on aggregated statistics, this project identified a number of issues that have implications for the way current market information is collected or calculated.

Interstate flows and lamb substitution

The survey approach to determine the total volume and value of the Australian markets (recommended in this report) can be used to estimate interstate flow of lamb from state production to state of consumption and the level of substitution of hogget and mutton for lamb.

This approach produced the results shown in the table (below). A more detailed calculation of this table can be found in Appendix I.

The surplus/deficit estimate in the table may require some sensitivity testing to determine how responsive the results are to changes in estimated sales volume.

Given the size of the statistics, one would expect only a small error margin. Some sources of any error may be:

- sampling error from the survey data; or,

- the exclusion of processed lamb.

Allowing for some error, this analysis appears significant requiring further research. For example, the ABS statistics of lamb slaughter and production in Queensland may need to be further investigated to identify the extent, if any, of mutton substitution for lamb.

Market Information and its structural rigour:

This project “tackled head-on” the perpetual issue of trying to match volume and price. This issue is important in order to identify the size of the market in both volume and value terms.

The final value is a compromise between what available prices and best estimates on volumes.

The industry urgently needs a database pulls together the vast amount of market information, clearly sources and references that market information, identifies its unit of measure of the data and places it in a hierarchical structure for analysis.

Such a system, the Australian Meat Market Planning System, is being tested by MRC under the direction of John Webster and Greg Wall. While this specific system may or may not be adopted, the principles of the system has a lot to offer the lamb industry and the meat industry as a whole.

Dedicated producers:

The LISP refers to the need for ‘dedicated’ lamb producers who are committed to consistently meet market specifications and requirements on regular basis.

In trying to value the industry at each level I the marketing chain, the averaging of all returns to producers does not allow one to distinguish between those producers. This means any one time one can not attribute the trends I the industry at the farm level to any one or other ‘type’ of producer.

If this group of ‘dedicated’ producers is deemed as important for the industry to achieve goals of growth and

development, it needs to be defined in terms which are measurable by industry statistics.

Why? By defining dedicated producers in measurable terms, the average returns, the productivity and the size of the total 'regular production can be benchmarked the industry average. These measurements would also assist in determining appropriate levels of industry funding for research and marketing activities.

Initial work on this project identified dedicated producers by manipulating the ABARE Farm Survey results (refer Appendix I). While this approach needs refining, the aim should be to produce indicators as to the success of the "flagship" producers to encourage others to join them.

Appendix I: Draft calculations and related work

Attached are a number of tables that relate to preliminary work associated with this project. As a result they contain more detailed calculations and additional analysis which is peripheral to this project but may be used as background information for future work.