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Market Information Program

The value of good information

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THE REPORT

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The value of good information

Prepared for Meat and Livestock Australia

Centre for International Economics
Canberra & Sydney

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The Centre for International Economics is a private economic research agency that provides professional, independent and timely analysis of international and domestic events and policies.

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Glossary

AAA	Advancing Australian Agriculture
AAGIS	Australian Agricultural and Grazing industries Survey
AMLC	Australian Meat and Livestock Corporation
AOP	Annual Operating Plan
EC	Exceptional Circumstances
IF	MLA's Integrated Framework
LMO	Livestock Marketing Officers
MIP	Market Information Program
MIS	Market Intelligence Services
MLA	Meat and Livestock Australia
MLW	Meat and Livestock Weekly
NASS	USDA National Agricultural Statistics Service
NLRS	National Livestock Reporting Service
NACMA	National Agricultural Commodities Marketing Association
OTH	over-the-hooks
SFE	Sydney Futures Exchange
RDC	Rural Development Corporation
CIE	Centre for International Economics
WTP	willingness to pay
USDA	United States Department of Agriculture

Summary

- This evaluation is concerned with the Market Information Program (MIP) by the MLA for the red meat industry between 1998-99 and 2007-08.
- Total MLA program expenditure amounted to nearly $34 million over this period.
  - Total nominal expenditure of $4.3 million for 2007-08 for this program represented 2.8 per cent of total MLA expenditure.
- Investments made by MLA in market information span six broad clusters or sub-program areas. It is useful to classify these investments into the following categories:
  - information infrastructure — database access and maintenance, National Livestock Reporting Service (NLRS) and industry surveys;
  - value-adding — competitor analysis and market intelligence; and
  - risk management — creation of a cattle futures market.
- The scope and the number of products offered by this program is substantial in addressing the needs of users throughout the red meat value industry, and within MLA, and of peak council bodies and governments.
  - Some of the most popular services provided by the program include Meat and Livestock Weekly (MLW) and the Industry Projections.
- A feature of the program is the evolution of the number and scope of services produced in response to changes in markets as well as how these products are delivered.
  - This shows that the program has responded to its requirement to 'fill gaps' in market information for the red meat sector — especially in the incorporation of the NLRS, expansion of other-the-hooks (OTH) reporting and the recognition of the need to monitor developments in international markets.
  - There have also been changes to address the needs of users to have information provided promptly via email or from the MLA website.
- The context for the program is a global red meat market that has complex information requirements for both short and long term decision making.
  - But MLA is just one source of information in the market that includes private operators such as saleyards, processors and agents as well as government agencies in Australia and overseas.
- The outputs of the program are industry services with many attributes of public goods. That is:
  - they are non-rival — consumption by one does not reduce availability for others;

  - users are difficult to exclude (or charge) because information can be shared easily — this is the so-called free-rider problem; and
  - there are substantial overhead costs involved in investing in the required infrastructure such as data collection standards.
- As a result, decisions by individual businesses can lead to a level of service provision that is *less* than optimal (in terms of maximising the value of the red meat industry).
  - A common solution to the public good problem is provision by government or by an industry body.
- Valuation of benefits of information with public good properties continues to be a challenge in economic literature. It suggests two broad approaches: willingness to pay (WTP) and opportunity cost.
  - Both are complex and can be expensive to implement: possibly greater than the value of the program.
- Of the types of benefits from the MIP identified from the consultation process and the literature, those that were amenable to quantification included:
  - reduced costs and risks in the red meat industry and better opportunities and profitability from better information — resulting in greater price stability;
  - increased demand for Australian red meat as a result of information provided to key international users in the United States, Canada and Japan concerning the benefits from diversifying their sources of supply based on MLA information;
  - improvement in the effectiveness of MLA programs and peak industry bodies for the red meat industry; and
  - more favourable policy decisions made by the Australian Government — for example, in the consideration of Exceptional Circumstances (EC) payments.
- It is important to note that 100 per cent of the benefits of the MIP to the Market Access Program have already been allocated in the evaluation of the MLA Market Access program.
- The approach used to quantify the benefit to the red meat industry for one point in time — 2008-09 — was to consult with key stakeholders and conduct an online survey of MLA subscribers.
  - Individual businesses were asked to nominate a benefit of the program on a ‘dollar per business’ basis. To facilitate responses in the consultation, stakeholders were prompted with values that would cover program costs.
  - Stakeholders were not asked to separate the value of sub-programs. Each method resulted in biases — the extent of these biases is difficult to determine.

  - They were also asked about the products they used and how the service could be improved as part of MLA's planning process.
- In addition to the 'dollar per business' benefit of the program, other information was required.
  - The time path of the benefit stream — it was assumed that the incorporation of the NLRS was an important component in determining the program benefits.
  - A time series on the number of businesses were also required across the following chain segments — farm-level beef and sheepmeat, feedlots and processors/exporters.
- Program benefits from the consultation prices for 2008-09 were as follows:
  - $61 per beef and $135 per sheepmeat business.
  - An adjustment was made to the outcome for sheepmeat to better reflect the composition of the sample, the benefit was found to be $54 per business.
  - $580 per feedlot, and $3500 per processor/exporter.
- Corresponding benefits from the online survey are significant for the farm sector respondents who valued MIP information at over $3000 per business.
  - The total benefit of the MIP implied by the 748 respondents is $2.6 million. Even it is assumed that the remainder of industry receives no benefit, this represents 60 per cent of the MIP expenditure.
  - Other evidence suggested that values could lie between these points.
- Consistent with other studies, it was found to be very difficult to determine the value of the MIP without building-in significant biases:
  - The small sample from the consultation process of industry was also unrepresentative of the industry at large because it was focused on leaders.
  - While the on-line survey had more respondents, this sample is also likely to be unrepresentative because it accesses those who were already MLA subscribers.
- That recognised, direct benefits to the red meat industry was evaluated using:
  - To be conservative, values of benefit from the consultation process were assumed to be representative of all businesses across the industry.
  - As an alternative, 10 per cent of the values from the online survey were also used to indicate upper-bound benefits across businesses in the industry.
- Based on the indication of benefits estimated from the consultation, table 1 shows that direct benefits to the red meat industry total benefits from program are calculated to be over $5.6 million for 2007-08, and $70.9 million for the 1998-99 to 2007-08 period, in present value terms.

1 **Composition of identified benefits from the MIP**

Components	*Attribution*	*Total benefits*[a]	*MLA benefits*[a]
	%	$m	$m
Direct benefits to the red meat industry[b]	100	70.9	70.9
Increased red meat demand by global users	50	131.6	65.8
Increased exceptional circumstance support for industry	100	118.4	118.4
Total	79	320.8	255.0

[a] Present value over the period1998-99 to 2009-10 in 2007-08 dollars using a discount rate of 5 per cent. [b] Using benefits per business obtained from the consultation.
Source: CIE calculations.

  - As noted this is a conservative estimate. It also excludes any benefits to other segments of the industry including stockyards, agents, agribusiness and other users.
  - The annual value of the benefit is roughly 50 per cent greater than the annual expenditure on the program before considering other benefits.
- Using the alternative values of benefit from the MIP (10 per cent of the online survey results) the payoff to the program increase significantly.
  - Total direct benefits to the red meat industry total benefits from program increase to $35 million for 2007-08, and $397.6 million for the 1998-99 to 2007-08 period, in present value terms.
- Table 1 also summarises the other quantified benefits flowing from the MIP.
  - The benefit to Australian beef producers of increased red meat demand by global users was worth $131 million in present value terms over the timeframe of the evaluation or $39 million for 2004-05 — the largest impact year. Fifty per cent of the benefit was attributed back to the MIP.
  - Decisions made by the Australian Government that resulted in increased exceptional circumstance support for industry, that critically depended on MLA information, amounted to $32 million in 2007-08 and $118 million in present value terms.
- Table 2 presents the bottom line for this evaluation and indicates that the net benefit of the program could (conservatively) be $209.8 million with a benefit–cost ratio of 5.6 to 1. Alternatively, the upper bound of benefit could be as high as $536.6 million with a benefit–cost ratio of 12.9 to 1.

2 **Bottom line for the MIP**

Key outcomes	*Unit*	*Total program benefits identified*	
		Industry benefits from consultation	*10 per cent of industry benefits from online survey*
Total benefits[a]	$m	255.0	581.8
MLA program expenditures[a]	$m	45.2	45.2
Net benefits	$m	209.8	536.6
Benefit–cost ratio		5.6	12.9
Internal rate of return[b]	%	na	na

[a] Present value over the period1998-99 to 2009-10 in 2007-08 dollars using a discount rate of 5 per cent. [b] It is not possible to calculate because MIP benefits exceed costs in every year.
Source: CIE calculations.

1 Introduction

In 2005, the Centre for International Economics (CIE) was engaged to develop an evaluation framework for Meat and Livestock Australia (MLA). The framework was based on the Department of Finance and Administration framework for accountability to government. It is designed as a rigorous framework that maps program inputs to outputs, outcomes and impacts. The framework has the advantage that it is practical, consistent across programs, covers ex-post and ex-ante evaluations and incorporates triple bottom line assessments.

MLA is currently engaged in a wide ranging evaluation program using this framework, with a number of evaluations already complete. This report presents an evaluation of MLA investment in its program 3.3 (improving industry and market information).

In addition to its own reporting and accountability requirements, one of the drivers of this evaluation program is the recently developed Rural Development Corporation (RDC) Evaluation Framework. This framework was developed by ACIL Tasman for the Council of Rural Research and Development Chairs.

In 2008-09 MLA will invest on behalf of levy payers over $4 million in the collection and distribution of a range of information relevant to the red meat value industry. Since 2000, the range of information collected and the products distributed by MLA has increased significantly — responding to market developments and industry needs. As part of the evaluation of all its programs, and to improve the effectiveness of its services and products, MLA is seeking

feedback on the value levy payers and other stakeholders put on the Market Information Program (MIP).

The programs' objectives are:

- to ensure the provision of effective, targeted market information that adequately meets the needs of stakeholders;
- the provision of timely access to market information to all industry participants to overcome asymmetries in the level of market knowledge and promote price discovery and market transparency;
- the provision of a solid foundation of market information for effective and successful industry planning, market access negotiations and marketing and research programs and in formulating beneficial industry and government policies;
- gather and disseminate relevant intelligence to provide critical information on the long-term position of the Australian industry — essential for commercial planning and benchmarking; and
- develop risk management tools and encourage the commercial supply of such tools and widespread adoption by key industry players.

This report

This report evaluates three key propositions about the outputs of the MIP over the timeframe 1998-99 to 2007-08.

- Do key target audiences for market and industry information value the data and analysis provided and use it to help inform business decisions that result in economic benefit across the entire industry?
- Does the provision of timely access to market information to all industry participants overcome an gaps in market knowledge that would otherwise lead to lower levels of competition in the various markets for Australian livestock, resulting in less efficient or effective price discovery and greater volatility?
- Does the provision of market information have public good attributes because it contributes to the underlying infrastructure necessary to allow the market for livestock to operate efficiently?

It has been possible in this report to place a value on the benefits of the first of these propositions, but the other two broader industry benefits are not amenable to valuation.

Consultation and online survey

To assist with establishing the benefit of the program to the red meat industry, an extensive consultation program was undertaken across stakeholders along the value chain. This program was undertaken jointly by MLA and the CIE, through:

- face to face interviews for key players such as the large processors and peak bodies; and
- telephone interviews with many others including the beef and sheepmeat grazing industries across specialised and mixed enterprises.

In addition, an online survey of MLA subscribers across the value chain was conducted in August 2009 which asked parallel questions to the consultation including what MLA products were accessed and how much benefit they obtained from the service.

A summary of these surveys and some key findings are presented in appendix A and B.

2 MLA investment in the MIP

Sub-programs and outputs

Table 2.1 lists the sub-programs of the MIP. The first four sub-programs form the core of the MIP since inception of the MLA. During this time there were also changes within sub-programs with activities either being absorbed into other categories or with special interest activities of a one-off nature being conducted.

2.1 **Sub-programs and outputs of the MIP**

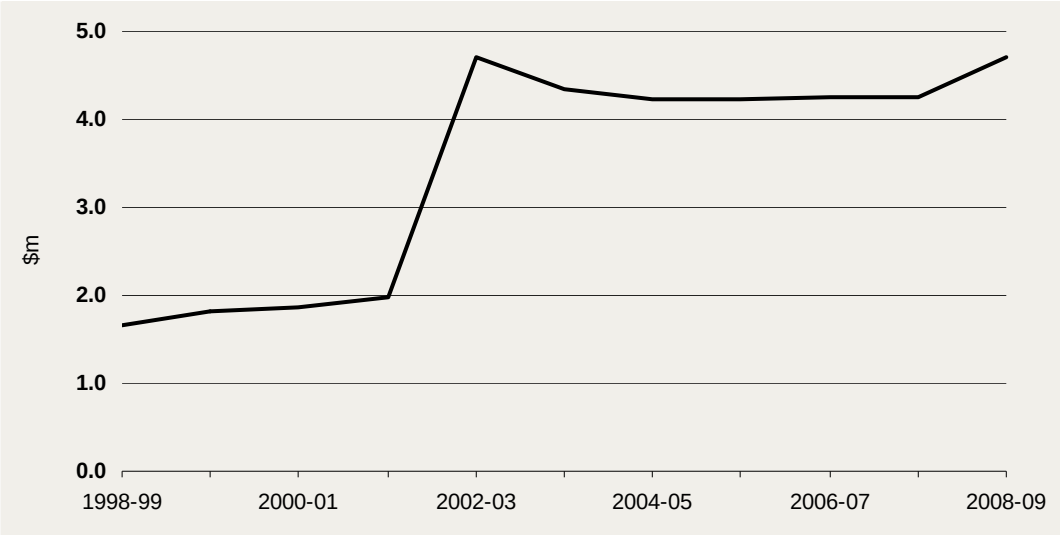
Sub-program	*Outputs*
Database maintenance and access	▪ MLA database maintenance and extension.
Competitor analysis	▪ Analysis of key market competitors such as the United States, South America, New Zealand and the European Union.
Industry surveys	▪ Surveys to establish the performance of livestock grazing, feedlot, co-product, foodservice and retail sectors.
Market intelligence services	▪ Information systems to meet the needs of business and industry using the MLA database.
National Livestock Reporting Service	▪ Livestock market reporting including livestock and co-product prices and slaughter numbers.
Cattle futures	▪ Support for cattle futures as part of a wider risk management approach.
Electronic commerce[a]	▪ Provide MLA services to business electronically.
Information resources[a]	▪ Support for the EdgeNetwork as part of MLA's on-farm activities.
Ad hoc studies on key economic issues	▪ Study reports, eg Lamb dentition, Drivers of cattle price changes, emissions trading.
Lamb market investigation studies[a]	▪ Consumer research into attributes required by consumers.

[a] Sub-programs that have been either absorbed into other categories or one-off studies.
Source: MLA.

Program expenditures

Chart 2.2 shows total expenditure by the MIP as reported by the MLA Accounting Systems and Annual Operating Plans (AOPs). From 1998-99 to 2002-03, there was a significant increase in expenditure on the MIP. After that time, expenditures in real terms flattened out.

2.2 Expenditure by the MIP



Note: Actual expenditures for 2007-08 and 2009-09 are taken from the MLA financial system and corresponding actual expenditure data as reported on AOPs for all previous years back to 1998. A continuous series of financial data for the program is not available due to a number of changes and upgrades of MLA's financial systems during the timeframe considered.
Data source: MLA Accounts and Annual Operating Plans, various years.

The most significant developments in MIP expenditure were the incorporation of the National Livestock Reporting Service (NLRS) and the cattle futures program, both in 2002-03 — lifting total expenditures by over $2.5 million.

Between 2002-03 and 2007-08, core sub-program expenditure has been maintained at a constant level in nominal terms, but has fallen by 19 per cent in real terms (adjusted for inflation, using the consumer price index).

Table 2.3 shows the relative importance of the core sub-programs in the total and how expenditure on each core sub-program has changed over time.

2.3 Expenditures by Market Information sub-programs

	Data maintenance and access	***Competitor Analysis***	***Industry surveys***	***Market intelligence***	***Cattle Futures***	***NLRS*** [a]	***Other*** [b]	***Total***
	$m	$m	$m	$m	$m	$m	$m	$m
1998-99	0.5	0.1	0.8	0.2	0.0	0.0	0.0	1.7
1999-00	0.5	0.1	0.7	0.3	0.0	0.0	0.2	1.8
2000-01	0.4	0.1	0.7	0.5	0.0	0.0	0.1	1.9
2001-02	0.4	0.1	0.7	0.7	0.0	0.0	0.1	2.0
2002-03	0.4	0.1	0.7	0.9	0.4	1.8	0.4	4.7
2003-04	0.4	0.1	0.7	0.7	0.4	1.7	0.3	4.4
2004-05	0.4	0.2	0.8	0.8	0.5	1.6	0.0	4.2
2005-06	0.4	0.2	0.8	0.8	0.4	1.6	0.0	4.2
2006-07	0.4	0.1	0.8	0.8	0.4	1.7	0.0	4.3
2007-08	0.5	0.1	0.8	0.9	0.3	1.7	0.0	4.3

a NLRS = National Livestock Reporting Service. **b** Includes one-off expenditures on Lamb Market Investigation Studies and existing programs, information resources and electronic commerce.
Source: MLA Accounts and Annual Operating Plans, various years.

It is important to note that values in table 2.3 are for expenditures. For this program expenditures were funded from three sources:

- producers (levy funds)
- government (matching funds on R&D component); and
- external sources.

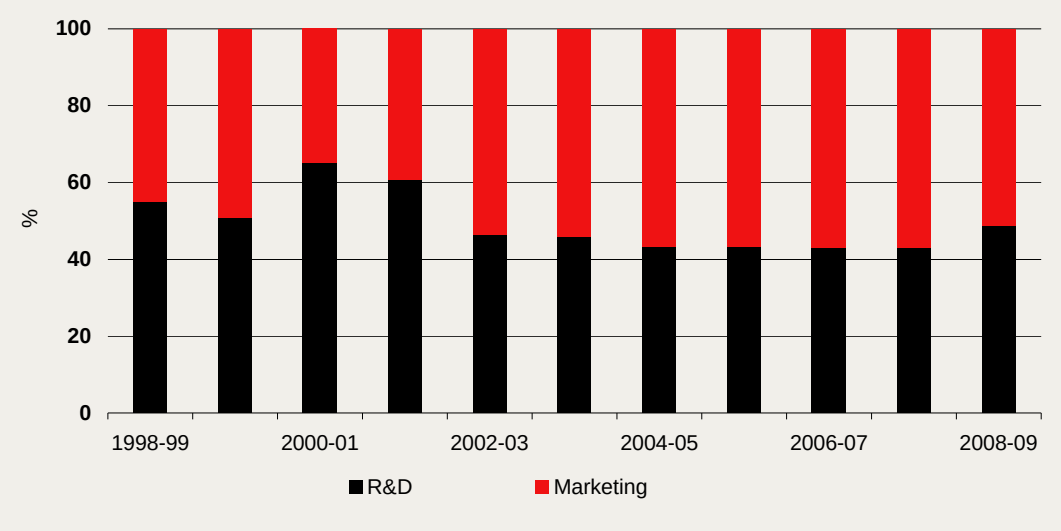
External funding sources, including funding from collaborating organisations and from subscriptions, contributed to the following sub-programs:

- Market Intelligence Services
- Cattle Futures
- NLRS.

R&D versus marketing

The split of the total investment between R&D and marketing is significant in terms of the use of producers' levies on both R&D and marketing and matching government funding on the R&D component of that expenditure. On average, between 1998-99 and 2007-08 marketing expenditure represented 53 per cent of total program expenditure (chart 2.4). Therefore, matching government funds contributed to 23 per cent of total program funding over the period.

2.4 **Composition of expenditure under the MIP**



Data source: MLA Accounts and Annual Operating Plans, various years.

3 Program sub-programs and outputs

This chapter describes the outputs of the MIP sub-programs and how these have evolved over time in response to the changing requirements of the industry. One of the key roles of the MIP is to identify and fill gaps in information coverage left by other private sector and government sources of information.

MIP sub-programs can be broadly categorised as being:

- information infrastructure — providing and maintaining databases for access by MLA and industry players, including the collection of primary statistics from saleyards and other markets and surveys of segments of the red meat industry;
- value-adding — including providing market intelligence, competitor analysis and forecasting services; and
- risk management — including the creation of a futures market for cattle.

Information infrastructure

Database maintenance and access

This sub-program provides the basic computing and other infrastructure to store, manipulate and distribute a range of data. It also holds and identifies the pertinent benchmark categories and classes of information that are to be collected and stored. Agreed categories and classes have often involved intense industry debate about the most relevant specifications and, further, the possible impact on the operation of industry markets of information gathering itself. In effect, this sub-program has become the 'custodian' of much industry benchmark market information, especially key 'indicators', and has responsibility for its continuing integrity and consistency.

The output of this sub-program is used by all other market information sub-programs — particularly by the Market Intelligence Services (MIS) sub-program — which access and use this base data.

This data is utilised by MIP staff through a special MLA data tool and the Global Trade Atlas (for detailed export data). It is made available to other areas of MLA and industry stakeholders (free of charge) through user-friendly data report tools on both the MLA intranet and MLA internet sites and through a direct phone or email answering service.

NLRS

Through its network of livestock market officers, the NLRS collects market data from the key auction and direct markets across Australia, in addition to slaughter statistics, wholesale, skin and hide prices. The range of outputs (products) is shown in table 3.1.

MLA's NLRS provides an *independent* source of livestock market data, collected directly from major prime and store markets. Livestock market officers attend up to 74 physical markets each week, producing detailed and summary reports for each market, which are available for download from the MLA website.

Table 3.1 also shows that MLA collects a range of data applicable to the domestic market outside of saleyards including slaughter number and over-the-hooks (OTH) price reports.

3.1 **NLRS outputs**

Product	***Description and coverage***
Weekly livestock indicators	▪ The latest price indicators for each state. ▪ All indicators are seven-day rolling averages derived from NLRS reported saleyards including: – the Eastern Young Cattle Indicator (EYCI), trade cattle, Japanese Ox, manufacturing cow, feeder steer; and – trade and export lamb, mutton and ewes.
Daily livestock indicators	▪ The latest price indicators (as above) for the eastern states.
Individual saleyard reports	▪ Prime sales — cattle or prime sales — sheep. ▪ Detailed reporting (including commentary on trends) of prices and yardings for individual stock categories sold at major sales.
OTH reports	▪ For individual states — cattle, sheep, goats and pigs. ▪ The latest OTH prices generated each Monday from information sourced directly from processors, agents and producers.
Slaughter reports	▪ Combined slaughter totals for cattle, sheep, lambs, pigs, goats and deer, generated each Monday from data collected from registered abattoirs in each eastern state.
Feeder cattle report	▪ The latest prices for sales directly to lot feeders, generated each Monday from information sourced from lot feeders, agents, alliance groups and producers.
State summaries	▪ General overview of price trends, indicators and major influences on all cattle and sheep markets in individual states over the past week.
Hides report	▪ General weekly overview of price trends for green brine cured and wet blue hides in the eastern states.
Skins report	▪ Weekly skin prices for lambs and sheep including Merino prices, rates for new season lambskins and crossbred skins of varying weight classes in the eastern states.
Sydney wholesale report	▪ The latest prices for carcass, broken and carton sales of beef, lamb and pork directly from Sydney wholesalers.

Source: MLA.

These data also include reports for feeder cattle and state summaries for saleyards for cattle and sheep. This coverage extends through to quantities and prices for the Sydney wholesale meat market.

Industry surveys

Table 3.2 lists the outputs of the Industry Survey sub-program. The outputs of this program provide important information on the farm-level industry.

3.2 **Program outputs of the Industry Survey sub-program**

Outputs	*Description*
ABARE farm surveys — beef and lamb	▪ A survey of the performance of Australian beef and sheep farms including financial and physical indicators such as turnoff and sales to slaughter and the live trade.
ALFA/MLA Cattle Feedlot Survey	▪ Quarterly survey of Australian feedlot industry including number of head on feed, turnoff and intended destination of those cattle.
MLA lamb survey	▪ Analysis of results of the annual MLA lamb producer survey, including the number of producers, ewes mated, lambs marked and lambs to be turned off for the coming season, by Merino, first cross and second cross categories.
Foodservice tracking survey	▪ This survey tracks the viability and profitability of food service operations and increases in red meat usage and expenditure.
Retail price survey	▪ Indicative retail prices of the important cuts and products, such as mince, for Australian capital cities.
Co-products survey	▪ Prices of key co-products including skins and hides, meat and bone meals.
Export price to Japan survey	▪ Weekly in-house survey of a number of key beef exporters to Japan to collect export prices across a range of cuts.

Source: MLA.

Market Statistics Database

The MLA Market Statistics Database on the MLA website contains a wide range of Australian and overseas industry statistics. Historical data can be downloaded for selected regions and on topics such as herd and flock size, feedlot data, meat export volumes and value, export prices, co-products prices, consumption, livestock prices, slaughter and meat production.

Value-adding services

Market Intelligence Services

The objective of MIS is to analyse and forecast market developments and improve information systems to better meet the needs of industry and business. In essence, this sub-program adds value to the collection and maintenance of data through the preparation of timely, relevant and easy-to-read reports. Outputs of this sub-program are set out in table 3.3.

3.3 **Program outputs of the MIS**

Outputs	*Description*
Daily market news service	▪ Daily local and global red meat and livestock news stories on the MLA web site.
Meat and Livestock Weekly	▪ News, analysis and trends for domestic and key export markets, including information on buyer and competitor activity and trends.
Industry Overview	▪ Analysis of changes to livestock prices in Australia and the key domestic and international market drivers.
Lotfeeding brief, supply brief, co-products brief and Livelink	Separate reports on the lotfeeding industry, Australian supply, co-products industry and the live export trade.
Market Briefs[a]	▪ In-depth reports on developments in specific markets, including: – Japan – Korea – North America (beef and lamb) – other markets and competitors – domestic market.
Global trimmings report (commenced in 2009)	▪ A monthly report on the developments in the global market for beef trimmings and the key drivers of this market.
Australian Cattle and Sheep Industry Projections	▪ Prospectus for the cattle and sheep industries over the next five years. Provides forecasts for supply and demand in both domestic and export markets, and examines likely threats and opportunities facing the industry.
Statistical Review	▪ Key livestock and meat statistics for Australia and other major red meat producing and trading countries.

a The Market Brief series, Lotfeeding, Supply and Co-products briefs were replaced with a Red Meat Market Report series from 2008-09.
Source: MLA.

Sub-program outputs can apply across industry and are also targeted at specific audiences along the red meat industry. A good example of this value-adding is the Industry Projections, which provide an outlook for the Australian red meat industry for five years by looking at changes in key market drivers. An important part of the process of preparing these projections is the conduct of workshops to

discuss the inputs and likely outcomes of the projection process with key industry stakeholders.

Table 3.4 sets out the extent of current overseas market coverage by the MIS and the key products in which this information is reported.

3.4 **Overseas market coverage**

Coverage	***Products***	***Frequency***
Japan and Korea	Meat and Livestock Weekly	Weekly
United States, Canada and Mexico	Latest market news	Daily
Europe and Russia	Market briefs	Monthly
Middle East	MLA Korea and Japan Daily News	Daily
New Zealand	Statistical Review	Annual
South America	LiveLink	
South East Asia and China		

Source: MLA.

Price and supply risk management

The MLA and the Sydney Futures Exchange (SFE) launched cattle futures contracts in 2002. This quickly evolved into a broader livestock price and supply risk management program.

Cattle Futures potentially can provide all beef industry players with an additional financial tool to assist with the management of exposure to cattle price volatility.

Cattle Futures supplement the range of contracting arrangements and agreements already in place in the physical market. Buyers and sellers alike have the capacity to secure prices and/or supply in advance using a variety of tools, thereby limiting their exposure to fluctuating prices and supply concerns.

Key price risk management tools include:

- the MLA/SFE Cattle Futures contract
- the Australian Forward Cattle Trading Standard
- over-the-counter bank products.

After MLA decided not to extend sponsorship of the MLA/SFE Cattle Futures Contract beyond eight years (ending August 2010), SFE announced a delisting of the Contract from January 2010, or earlier if all open positions are cleared. This

followed an extended period of very low and declining trading volumes, and consultation with key potential users.

However, the risk management program continues, with an emphasis on:

- developing a forward thinking mindset within the Australian cattle industry;
- facilitate the provision of a range of risk management products to suit the differing risk management needs along the cattle supply chain; and
- supporting the development and uptake of advisory services and market information as cornerstones for an effective price risk management framework.

Evolution of Market Information sub-programs

In the early 1980s, MLA's predecessor, the Australian Meat and Livestock Corporation (AMLC), started a market information service consisting of an annual projections report, a weekly market report, and a monthly in depth market report and export and livestock statistics.

The perspective of this evaluation is the period since the formation of MLA in July 1998. Under its Memorandum of Understanding, MLA assumed responsibility for database management services from AMLC and also a range of value-adding activities as part of the MIS portfolio. The MLA service commenced with a budget of just $1.73 million, and a publication circulation of around 500. The service concentrated on database services, farm surveys and analysis, but did not have the NLRS, off-farm surveys, separate competitor program or risk management program.

Chart 2.2 showed that 2002-03 was when the most significant change occurred for the MIP — this was when the MLA took responsibility for the NLRS (as outlined in box 3.5).

The outputs of the MIP have evolved over time in response to the changing needs of the industry — including the taking responsibility for the funding and the day-to-day management and operations of the NLRS —and are summarised in table 3.6.

3.5 MLA took responsibility for the NLRS

From 1 July 2002, MLA assumed responsibility for NLRS. This is when the New South Wales and Victorian state governments withdrew funding for the NLRS. Up until this point, each state funded the local activities of the NLRS through a mix of state-based funding mechanisms. For example, in NSW the NLRS was run under the banner of the Meat Industry Authority and later transferred to SafeFood New South Wales before funding was withdrawn. In Queensland, data was collected by the Queensland Livestock and Meat Authority.

Gregor (2001) concluded that the NLRS should continue at a national level and that

> such as service provided value to the industry as a whole by lessening transaction costs that accrue to individual organisations and by increasing market efficiency

This report also concluded that the NRLS could be viable as a commercial operation but this was undesirable as it may jeopardise perceptions of independence and lack of bias which are important attributes of such as service.

With a switch to national funding and coordination by MLA on behalf of cattle and sheepmeat peak councils and processors, a standardised reporting framework was developed across all states for the NLRS, which improved the overall value of the service.

3.6 Timeline for the MIP

Year and product	*Rationale*
1998-99	
ABARE survey and reports	▪ MLA took over managing and funding the project (from the Meat Research Corporation). Very large and detailed industry reports were produced.
Meat the Market (MtM)	▪ The previous publications (Meat Exporters News and National Livestock Report) were criticised as being repetitious of one another and the client base of both publications overlapped substantially. MtM was a single publication, covering an expanded set of exporter and producer news and statistics.
1999-2000	
ABS slaughter and production data	▪ ABS was collecting the data on a monthly basis but, due to funding cuts, was going to cut back the survey to quarterly. After consultation with industry MLA agreed to fund the additional eight collections (in between the quarters) to allow a year round flow of supply data.
Co-products Survey	▪ Increased the frequency of the survey from quarterly to monthly, included more analysis and increased the sample size and dissemination of the results.
Database	▪ Developed a time series database of historical livestock and meat market information.
Foodservice survey	▪ Prior to 2000, MLA subscribed to BIS foodservice report on a biannual basis (MLA attached a supplementary survey to the main questionnaire). In response to demands from other MLA departments, BIS was contracted to complete a foodservice survey every six months.
Industry Overview and Market Briefs	▪ The previous publication, Australian Meat and Livestock Review, included a monthly review of the markets and covered articles on key export markets. ▪ By the time the publication was distributed, it was well out of date. To improve the timeliness and market coverage, separate publications were created: – Industry Overview (monthly, covering main trends in the industry) – Market Brief series (distributed 2–4 times per year per market)
Market Intelligence Service	▪ Competitor analysis expanded to include the threat of incursion of South America into Asia.
2000-01	
Mid year update for Industry Projections	▪ In response to more rapidly changing meat and livestock markets and calls from stakeholders, MLA began to publish projections twice a year, instead of once a year. Developments made during the year made the projections obsolete before the year ended. In response to demand, MLA was called upon to give mid-year updates to internal/external parties. It made sense to publish a mid-year update for wide distribution.
Cattle Projections Forum	▪ Presentation of draft cattle industry projections to industry prior to releasing the projections through the media. Presentations were also given on other topical subjects. – provided industry players (key stakeholders) with networking opportunities
Retail butcher survey	▪ Fortnightly butcher survey commenced (first in NSW then expanded to Victoria, Queensland, Western Australia and South Australia) to track sales in the domestic market.
Futures	▪ A preliminary agreement was secured from the Sydney Futures Exchange (SFE) to re-list the Cattle Futures Contract.

Database and access	▪ The new MLA website enabled all regular MIS publications to be ordered online from MLA.

3.6 **Timeline for the MIP** Continued

Year and product	*Rationale*
2002-03	
NLRS joined MLA in July	▪ The Victorian State government announced it was withdrawing funding for the Victorian livestock reporting service. Other states also signalled that they were about to withdraw funding. A review of livestock market reporting was conducted by Professor Gregor and in response to this review and calls from Peak Councils, responsibility for livestock market reporting was transferred to MLA. ▪ A new index of eastern young cattle prices was developed in 2001 — the EYCI. NLRS' integration with MLA guaranteed integrity of the EYCI (developed for the futures market). ▪ A new database was constructed to hold NLRS data. ▪ NLRS OTH cattle reports were revamped to include more price detail for export steers and cows by weight and dentition to provide more relevance to contemporary market specifications. ▪ A User Advisory Committee was established in order to 'bed in' NLRS into MLA and ensure it remained relevant.
Futures	▪ The cattle futures market was launched on the SFE.
Surveys	▪ An online farm survey data tool was launched giving producers and others access to data collected by the ABARE Annual Agricultural and Grazing Industries Survey.
MIS	▪ A new market information package was developed encompassing sales direct to live exporters. ▪ The frequency of the fortnightly retail beef and lamb price survey was increased to weekly.
Cattle Projections Workshop	▪ Projections Workshops commenced in order to secure industry input into the projections and allow participants to get a better feel for the state of the market and what might change the market.
2003-04	
Meat and Livestock Weekly	▪ Due to the integration of NLRS with MLA, the weekly publications of both NLRS (Livestock Roundup) and MLA (Meat the Market) were condensed into a new publication — Meat and Livestock Weekly. The new publication included: – Increased coverage of livestock markets. – Increased coverage of export markets.
MLA Analysis Tool	▪ An SQL database was constructed to hold MLA market information as a prelude to making this information more available on the internet. The new database increased the usability and functionality of the data.
Feeder cattle report	▪ A feeder cattle report was introduced, providing prices for short, medium and long fed cattle.
ABARE survey and reports	▪ An online database for beef, lamb and sheep was created to make the ABARE data more accessible internally and on the web (replaced the detailed data tables in the reports). – The reports were able to be condensed into smaller/timely reports that could be distributed more widely to industry.
Red meat expenditure and demand estimates	▪ The estimation of Australian consumer expenditure on red meat and meat demand indices enabled better monitoring of demand and an

	additional indicator of the effectiveness of MLA marketing programs.
Goat OTH report	▪ In response to a request from GICA, a goat OTH report was introduced.
OTH cattle report	▪ Changes were made to the OTH cattle report. The grown steer category (260–300kg cwt was added).

3.6 **Timeline for the MIP** Continued

Year and product	***Rationale***
2004-05	
PTIC category (PT)	▪ Introduced the 'Pregnancy Testing In Calf' (PT) on NLRS physical market reports due to high demand for foetal blood.
Feeder cattle report	▪ Expanded coverage to include the breed category and weight ranges to make more relevant to industry.
DCRS database	▪ New NLRS database to increase efficiency, assist in identifying data entry errors and calculate the % of the market covered by the livestock reporter (LMO).
2005-06	
Retail butcher survey	▪ Survey outsourced and the sample size and product list increased.
Revised NLRS lamb indicators	▪ Expanded categories from trade, supermarket and export lambs to light, trade, restocked, Merino and heavy lamb to cover more segments of the market.
Hides report	▪ Increased the number of categories to make more reflective of the market.
OTH lamb report	▪ Categories upgraded to match with physical market categories.
Feeder cattle reports	▪ In response to lot feeder requirements, a review was undertaken of the weekly direct feeder cattle report in light of changing market specifications, such as breed and dentition, to provide a more relevant benchmark of short and long fed direct cattle prices. After industry consultation, a new report was launched in October.
NLRS publications	▪ Improved MLA branding of NLRS reports and publications achieved on a weekly basis.
Database and maintenance	▪ Comprehensive database audit commenced resulting in an improvement and extension of the database. ▪ Additional areas for further automation of data entry identified and implementation commenced supported by staff training in maintenance and extension.
Cattle Futures	▪ The three year review of the MLA/SFE Cattle Futures contract was finalised in August. Strategies were identified to increase industry uptake of the contract. – An expert futures consultant was employed to undertake business development.
Competitor analysis	▪ Information on Middle East competition upgraded and distributed in Market Briefs (MLA 2006). – Negotiations were held with Meat New Zealand to strengthen information exchange. – A major profiling of Brazil as a competitor commenced and incorporated into the Competitive Intelligence project.
2006-07	
NLRS database	▪ The new NLRS database, Data Capture and Reporting Service (DCRS), which had been in construction since late 2003, was made

	fully operational in June 2007. – DCRS integrates all the data collection, report generation and report dissemination for NLRS. Database was made available to market reporters in the field to allow them to analyse the data themselves.
NLRS	▪ ISO certification received for the Quality Management system.
Butcher/wholesaler survey	▪ A new Millward Brown butcher/wholesaler survey started from July.

3.6 Timeline for the MIP

Year and product	*Rationale*
2006-07 (continued)	
Web access to Analysis Tool	▪ MLA database information was made available on the internet.
OTH cattle report	▪ The OTH cattle report was revised with the addition of the MSA yearling category (for NSW).
Cattle Futures	▪ Agreement was reached with the SFE to continue the MLA/SFE Cattle Futures contract for a further three years.
Competitor analysis	▪ A major profiling study of Brazil as a competitor was commenced; incorporated into the Competitive Intelligence project.
Pastoral cattle prefix (PC)	▪ Introduced pastoral cattle prefix (PC) in market reports. This is particularly relevant in Western Australia and South Australia to separate cattle from pastoral areas. Before the prefix, there was a large price range in WA market reports (as it accounted for pastoral and inside cattle).
2007-08	
NLRS	▪ Introduced new technology to minimise risk of data loss and improve data capture by field staff.
Forward contracts	▪ MLA and the National Agricultural Commodities Marketing Association (NACMA) launched the NACMA cattle trade rules, which is a new set of industry standard rules for forward cattle trading. – These standard rules are aimed at creating transparency and consistency within the cattle contracting process and simplifying the process of dispute resolution, allowing for greater protection against defaulting parties on the purchase and/or sale of cattle.
Foodservice survey	▪ The Foodservice Survey was expanded to include more outlet types. The sample size was also increased. The report provides analysis on key market trends and the implications for meat sectors. Costs of funding the survey are split between Market Information and Domestic Marketing.
NLRS SMS of daily indicators	▪ SMS distribution of daily livestock market price indicators was introduced in consultation with the Australia Livestock and Property Agents Association. This service was designed to allow agents/producers to keep up to date with the livestock market out in the field (rather than rely on a computer).
2008-09	
NLRS	▪ The NLRS sub-program introduced new technology to minimise risk of data loss and improve data capture by field staff.
Formation of Lamb Forecasting Advisory Committee	▪ A broad-based industry Lamb Forecasting Advisory Committee was formed to workshop lamb forecasts three times a year, and provide advice on data and information needs.
New lamb survey	▪ Following a review of cost and accuracy, the Annual lamb survey conducted by Axiom was replaced with an in-house email survey to

	MLA sheep members.
Competitors analysis	▪ Monitoring and analysis of developments in Brazil and elsewhere in South America were upgraded. – Monitoring and analysis of China production, trade and prices was improved, as was the monitoring of competitive pricing of product in major and emerging markets.
Lamb dentition study	▪ A major study was undertaken (using Holmes Sacket) of proposals to alter the age specification for lambs, as measured by dentition.

3.6 **Timeline for the MIP**

Year and product	***Rationale***
2008-09 (continued)	
Drivers of cattle price study	▪ CIE was commissioned to analyse the key drivers of the fall in cattle prices between 2005 and 2008 as an input into projections and industry program planning.
Expanded export data service	▪ Shift from Tradedata to the Global Trade Atlas, and from Corvu to SAP database enabled an expanded analysis and provision of detailed trade data from Australia and on all other major global exporters. ▪ New quarterly Australian export cuts analysis and market reports provided Australian exporters and MLA marketers with early notice of evolving trade trends and opportunities.
OTH cattle report	▪ The OTH cattle report was revised to further breakdown the yearling categories from two to three weight ranges to better reflect the market.
Wholesale beef report	▪ The wholesale beef report was changed by increasing the number of categories quoted to include MSA and grassfed portioned products and providing a breakdown of carcase weights.
Wholesale lamb report	▪ The number of categories was increased in the wholesale lamb report.
Red Meat Market Reports	▪ The Market Brief publication series was stopped and replaced with Red Meat Market Reports. – In order to reduce printing costs these are only electronic and are free of charge. – To further save costs, the frequency of producing these reports are only ad hoc (around one expected per year, per market) to reduce time required in preparing the reports.
Review of cattle futures	▪ Following a workshop of key industry players and risk management service providers and in-house study of alternatives to the existing Cattle Futures Contract, MLA decided not to extend its sponsorship of the SFE/MLA Cattle Futures Contract beyond August 2010. Subsequently, SFE decided in August 2009 to delist the Contract from January 2010.

a Highlighted text taken from AOPs and Annual Reports.
Source: MLA AOPs, Annual Report and Personal Communication with MLA staff.

Table 3.6 shows how products, particularly value-added services, evolved over time in response to changing client needs, market developments, structural changes within the industry and technological advancements. This evolution included not only the introduction of a raft of new products but also the expansion in the scope and frequency of some publications — resulting in improvements in quality.

Some of the most important changes included:

- increased scope and coverage of OTH prices in response to the growing importance of direct marketing, especially for cattle in southern Queensland and northern NSW and for lambs in Victoria;
- recognition of the growing significance of the feedlot sector by expansion of the feedlot survey and the better tracking of feeder prices;
- increased analysis of key overseas markets including the threat and opportunities from changes in market access and disease status of key competitors including the United States and South American countries, particularly Brazil;
- vast expansion in data collection, manipulation and access covering Australia and all major global importers and exporters, including off-farm surveys and detailed export cuts analysis;
- enhanced industry projections through greater industry involvement and expanded data;
- the provision of information electronically through instant access via email and the MLA internet site; and
- increased interaction with industry in the formulation of the Industry Projections.

4 Users and benefits of market information

Having identified the outputs of the MIP and how these have changed over time, the next step is to better understand how those outputs are used by industry and other users, and how the program contributes to the industry and the wider community. To do this, it is useful to categorise how information flows between segments of the red meat industry and how it is used. This includes:

- sources of information
- who collects and reports information
- how information is distributed
- users and uses of information.

Sources of market information

Table 4.1 sets out the key market sources of information for the red meat industry, which market players or observers (including MLA) have access to this information and who reports them.

Table 4.1 shows that industry operators and markets are the primary source of information for the industry — whether the markets are domestic saleyards, direct selling to processors or domestic and export markets for red meat.

However, key sources of information are primarily those who 'make' or participate in the production or in the market, such as:

- saleyard operators and agents
- livestock producers
- processors and shipping companies
- meat traders and users, such as in retail and food service.

Relevant information can also flow from outside of red meat markets. For example, policy decisions by made by government, both domestic and overseas, are an important ingredient in the overall picture provided by MIP. Other key markets that impact on the industry are those that determine relative exchange rates — a significant set of variables that impact on the short and long-term competitiveness of the Australian industry.

4.1 **Sources of market information for the red meat industry**

Sources	*Collectors /reporters*	*Information collected*
Domestic markets		
Saleyards	▪ Saleyard operators and agents ▪ Company buyers and sellers ▪ Processors ▪ Government ▪ NLRS	▪ Saleyard prices and yardings ▪ Market context and developments
Processors	▪ NLRS/MLA ▪ Government	▪ Slaughter statistics ▪ OTH prices ▪ Co-product prices
Wholesale and retail	▪ NLRS/MLA and processors	▪ Wholesale and retail prices
Transaction volumes	▪ Government — DAFF, ABS	▪ Levy information ▪ Export and slaughter information
Farms and feedlots	▪ MLA ▪ MLA/ALFA ▪ Government – ABS–ABARE–MLA	▪ Farm and feedlot surveys ▪ Agricultural Statistics
International markets		
Export data	▪ Exporters ▪ Shipping companies ▪ Government — ABS and DAFF	▪ Export prices ▪ Shipping and container statistics ▪ Customs' values and volumes
Import markets	▪ Company buyers and sellers — exporters and sellers ▪ In-country livestock and meat agencies ▪ MLA market observers	▪ Indictor prices and volumes along the chain. ▪ Market context and developments
Government policy	▪ Domestic or foreign government agencies	▪ Key government or industry decisions that impact on market access or regulation

Source: CIE.

How information is distributed

Table 4.2 sets out the channels by which information reaches users. It is important to note that MLA is not the exclusive source of market information collected and distributed on a regular and systematic basis (primary sources of information, table 4.1). Regular market participants — especially those in large

vertically integrated businesses and agents or saleyard operators — also collect market information, some of which they supply to MLA. MLA also has independent observers and recorders in key markets (such as the NLRS and overseas office staff).

4.2 Distribution channels for market information

Distribution channels	*Media*	*Information and frequency*
Primary sources[a]		
Within company or chain alliance	▪ Electronic (email) ▪ Reports by phone	▪ Head office receives first for distribution ▪ Relevant market data and projection ▪ Regular (daily or weekly)
Agents and saleyards	▪ Paper and electronic	▪ Market and other information ▪ More irregular
NLRS and MLA	▪ Mail ▪ Phone ▪ Fax (limited now) ▪ Electronic — website and email distribution ▪ Presentations at forums	▪ All NLRS/MLA products ▪ Range of frequencies depending on product
Australian Cattlefacts	▪ Internet-based.	▪ Number of sources including members with MLA content
Government (for example, ABARE and DAFF)	▪ Electronic (email) ▪ Paper and electronic reports ▪ Presentations, eg. ABARE National and Regional Outlook Conferences	▪ ABARE surveys reports ▪ Export statistics ▪ ABS slaughter, production and herd/flock data ▪ Local and overseas Government policies
Secondary sources		
Television	▪ ABC Landline	▪ National markets and trends ▪ Weekly
Newspapers	▪ State Rural Weekly's	▪ Saleyard and OTH prices ▪ Weekly market developments
Radio	▪ ABC State market reports and interest stories	▪ Regional market reports ▪ Market developments ▪ Daily
Commercial information specialists, for example, Profarmer, Agconcepts	▪ Internet-based ▪ Email newsletters ▪ Range of market and outlook information	▪ Number of sources including MLA content

a Primary sources collect market information on a regular and systematic basis.

Source: CIE.

Table 4.2 also identifies 'secondary' providers of information to final users. These providers are the media, who primarily access and distribute MLA information to a target audience largely comprised of small-scale businesses that use the information on a more casual basis.

Cattlefacts is an interesting source of information, as it covers the spectrum of information-related activities including the self-reporting of cattle prices and market developments by members through to the posting of information by MLA and by providers in other countries such as the United States Department of Agriculture (USDA).

Users of market information

The conventional way to think about the Australian red meat value industry is in terms of its components, namely:

- on-farm (breeding, fattening and backgrounding and mixed operations) and feedlot operations;
- processing and exporting; and
- domestic wholesaling and retailing.

The Australian red meat industry, especially beef, is characterised by a wide range of businesses of different operational scales.

- There are also a large number of small businesses — the most recent ABS farm data suggests that the population of farms and feedlots producing cattle and sheep is up to 80 000 businesses, using a low value of output cut-off. If all farms with cattle or sheep were included (with no minimum threshold) the number would probably be over 100 000.
- There are a small number of very large integrated companies. In 2007, the top 10 processors accounted for 68 per cent of Australian red meat production — most of these companies are either fully or partially integrated along the chain through outright ownership or long-term contracts and strategic alliances.
  - These companies may also account for up to 20 per cent of on-farm production of beef across breeding and lotfeeding activities.

For large or integrated businesses, one benefit of scale is the capacity to collect, and use internally, information across all of the markets that are operated in. At the other end of the scale, smaller businesses have significantly fewer resources to participate in or monitor market developments.

Therefore, in terms of market and other information, it is more useful to think about the scale of the enterprise rather than the location of the business in the value chain.

In addition to small to large enterprises within the red meat industry, other users include:

- MLA itself in the delivery of its other programs;
- MLA and peak council bodies, national and state, in the development of industry policy;
- governments (state and Australian); and
- agribusinesses providing services to those along the production chain.

Users and uses of market and industry information are shown in table 4.3.

4.3 Users and uses of market and industry information

Users	*How the information is used/rationale*
Small businesses	▪ May participate in a small number of markets only several times a year. ▪ Use recent saleyard/OTH prices to guide decisions on time and location of sales. ▪ MLA a significant input to information base. – Also uses market information from agents or local saleyard.
Medium (integrated) businesses	▪ Participate in a limited number of markets on a regular basis. – Reflects greater specialisation than larger businesses. – Limited reach of network of buyers and agents. ▪ Use recent saleyard/OTH prices to guide decisions on time and location of sales. ▪ Also use analyses, particularly projections, as an input into production and investment decisions ▪ Use MLA information to fill gaps on markets in which they are not directly involved. – Uses MLA as ingredient for longer term decisions.
Large integrated businesses	▪ Participate in range of markets on a daily or weekly basis. They: – 'make' the markets in many cases; – have their own buyers and sellers to provide immediate feedback to head office of prices — especially about lines of direct interest; and – are in direct negotiation with buyers in key export markets and are acutely aware of price (and exchange rate) movements. ▪ Have sophisticated network of information collection and dissemination. ▪ Most often significant supplier of information to MLA. ▪ Use NLRS price and slaughter data to benchmark own market and production results. ▪ Use analyses, particularly projections, as an input into production and investment decisions. ▪ Use external information to fill gaps and input into strategic decisions.
Users of beef and sheepmeat	▪ For example, retailers (supermarket majors) and food service often involved in strategic alliances. – Used for pricing and supply information and chain transparency. ▪ Used in purchasing, service (for example, shelf space or menu)

	and marketing/promotion decisions.
Government	▪ Used for policy making in government: – exceptional circumstances, current policy issues, etc. – market access policy and negotiations – assessment of performance of RDC's – reviews of industry policy, for example, competition in retailing. ▪ Only information source readily available.
MLA and industry peak councils	▪ Planning and evaluation of programs. ▪ Increasing effectiveness of other programs and projects generally. ▪ Providing policy advice to members and to government. ▪ Only information source readily available.

Source: CIE.

Translating program outputs into uses

Table 4.4 summarises how MLA sub-programs translate into outputs or activities and how these outputs are inter-related. It is also important to note that the majority of outputs of the program are also used by MLA itself in its own operational and planning processes.

Table 4.4 shows that MIP sub-program outputs play a number of roles, such as:

- inputs to other MIP sub-programs, particularly the MIS;
- inputs to other MLA programs, such as activities with an on-farm and extension focus and also important for planning, tracking and evaluating MLA's promotion and marketing programs;
- being used directly by industry to support short-term and long-term decision making; and
- being used by governments to inform policy decisions including reviews that established the transparency of the red meat industry or determine payments to primary producers under the Exceptional Circumstances (EC) program.

There is little doubt that the outputs of this program are used in a range of other policy-related areas — most notably by the MLA Market Access Program. In the CIE (2000) analysis, 20 per cent of the benefits of the Market Access Program were attributed back to Market Information.

While this critical benefit must be included in any consideration of future MIP funding and priorities, it is not formally included in this benefit/cost evaluation of MIP as 100 per cent of the benefits of the Market Access Program have already been allocated in the evaluation of the MLA Market Access program.

In addition, the program has resulted in projects that provided important market information to key industry players — such as studies that demonstrated the

benefits to a major beef-using global company — diversifying its sources of supply to include Australian product.

4.4 Summary of uses of the MLA MIP

Outputs	*Intermediate uses of information*	*Primary ultimate use of information*
Database maintenance		
▪ Data Capture Recording Service ▪ National Livestock Report Service	▪ Collection and maintenance of a wide set of base data relevant to the Australian red meat industries. ▪ Key input into the market intelligence publications. ▪ Used by consultants in studies for industry and government.	▪ MLA project planning, tracking and evaluation. ▪ Industry and government decisions via consultancies. ▪ MLA budgeting.
Market intelligence services		
▪ Meat and Livestock Weekly and Market Briefs	▪ Information to levy payers (including lotfeeders), agents and processors ▪ Media reports	▪ Industry production, investment and marketing decisions.
▪ Presentations and briefings	▪ Stakeholder briefings – Field days — producer meetings – Major corporate users operating in international markets – Conference and workshop presentations	▪ Industry production, investment and marketing decisions. ▪ MLA membership. ▪ Image of Australian red meat industries, for example, with major importers.
▪ Industry projections	▪ Used by consultants in studies for industry and government. ▪ Media reports.	▪ Industry production, investment and marketing decisions. ▪ Industry and MLA strategy and project planning. ▪ Establishing priorities for market access negotiations ▪ Long term planning by producers, processors, lot feeders and agribusiness
Industry surveys		
▪ ALFA/MLA Quarterly Cattle Feedlot Survey	▪ Information to levy payers (including lot feeders), agents and processors	▪ Lotfeeders in production, investment and marketing decisions. ▪ ALFA/MLA in budgeting, program planning – Peak council lobbying government on policy.
▪ ABARE farm surveys — beef and lamb	▪ Used by policy makers in government (exceptional circumstances, current policy issues, etc.) ▪ Used in industry and	▪ Better government policy decisions, for example, exceptional circumstance. ▪ Industry production, investment and marketing

	government projections ▪ Input into planning and evaluating MLA on-farm programs	decisions. ▪ MLA on-farm programs.
▪ Co-products survey		▪ Used by renderers and co-product sellers and buyers in production, investment and marketing decisions.

4.4 **Summary of uses of the MLA MIP**

Outputs	***Intermediate uses of information***	***Primary ultimate use of information***
Improved information flows within supply chains		
▪ EDGE*network* — Tips and tools	▪	▪ Assisting producers with meeting market specifications and in other production, investment and marketing decisions.
Risk management		
▪ Cattle Futures ▪ Forward contract terms and conditions ▪ Risk management training and education		▪ Support the uptake of cattle futures contracts. ▪ Encourage the use of forward contracts ▪ Raise awareness and adoption of price and supply risk management.
Ad hoc studies on key economic issues		▪ Industry strategic, program and policy decisions.

Source: CIE.

5 Benefits of the program

The collection and distribution of information is a core activity for an industry body — especially in an agricultural industry with a fragmented producer base. This is because, without such an activity, no individual or business within the value chain would have sufficient incentive or resources to undertake the activity on their own. Thus, market information for the red meat industry displays many of the characteristics of what economists call a public good.

Information goods and services with public good attributes

The rationale for the MIP is similar to that for a range of other information gathering and dissemination activities taking place in other sectors of the economy. There is extensive literature behind the economic concept of public goods. In principle, pure public goods include goods and services have the following characteristics.

- They are non-rival — this means that the consumption of a good or service by an individual or business does not use up or reduce the availability of that good or service to other users.
- They are non-excludable — this means that no one can be effectively excluded from using the good:
  - this is the so-called 'free rider' problem that makes charging for the good or service very difficult — free riders know that they cannot be effectively excluded from the benefits regardless of whether they contribute to it; and
  - in many cases, it is difficult to identify many of the final users let alone charge them for the service.

So what is a 'private good'? Cattle and beef are examples of a private good where supply is limited and consumption by an individual or business reduces the supply available to others. When the demand for beef in any one market is greater than the supply available, prices will rise.

Public goods provide an example of what economists call market failure, in which the rational behaviour by individuals and businesses may not produce 'efficient' results. The concept of an 'efficient' result implies that economic activity and welfare in the red meat sector would be lower if key market information was not provided by an industry body. That is, industry income can be improved by filling information 'gaps' left by other providers in the private and government sectors.

Another characteristic of goods and services with public goods attributes is their production technology. Production or creation of the public good or service usually involves large investment and setup costs. In the case of information services, these setup costs not only encompass the physical infrastructure, such

as construction of the database, but also the establishment of data collection and maintenance standards.

- The presence of these overheads in production demonstrates increasingly stronger returns to scale (falling average costs with greater throughput). Because of the limited scope for charging users, it is difficult to attract the required investment from private individuals and businesses — this is usually solved through government intervention.
- Also, given that there are no clear signals from a defined market, another problem associated with public goods is that it is very difficult for government or an industry body to determine precisely what amount of investment and expenditure would be optimal (to maximise efficiency and resource allocation).

Production or creation of the public good or service often tends to occur by a single producer or entity, usually enabled by government. Often legislation provides exemption from laws that prevent practices that would be considered anticompetitive for private goods.

Solutions to public goods

Economic theory suggests two main alternative solutions to the public good problem. These include direct government intervention through legislation that either ensures that:

- the good or service is produced by government providing the good or service itself, commissioning a private firm to produce it or charging an industry body with the responsibility; or
- reduction of the free-riding problem through the imposition of a tax or charge to fund the production of the good or service.

This is part of the logic behind the Australian Government enabling the financing of RDCs through the imposition of compulsory levies.

Information as a public good

Information provision is often subject to systemic under-provision. Without some form of government or social intervention, the amount of information provided by private entities is likely to be inadequate. That said, through innovation, private providers or individuals acting collaboratively can establish methods of providing information profitably or at low cost. However, scope and coverage may not be optimal.

Economists attribute this under-provision to market failures, where socially optimal levels of a good or service are not produced or are over-consumed. Examples of market failure include public goods, natural monopolies and

information asymmetry (where not all market participants have equal access to information).

Although information is not a pure public good, it has many public good attributes. Information is non-rival, but is not non-exclusive. Use of information by one person does not diminish the amount of information available to others. But information can be excludable. Memberships, subscriptions and copyright are all means of controlling or restricting access to information — in other words introducing exclusivity. That said, managing and enforcing exclusivity can be resource intensive. Moreover, given its non-rival nature, once information leaks it is nearly impossible to retract.

Another key issue is that goods or services with public good attributes are difficult to price correctly. Efficient pricing of a good or service is usually based on the marginal cost of producing one additional unit for consumption. The marginal cost of producing and using information can be very low or zero. It also makes individuals less likely to contribute to its provision or use.

Other examples of information — with public good attributes

In the real world, there are very few examples of what can be considered 'pure' public goods. But across industries and different countries there is a wide spectrum of information providers from private suppliers to those provided by industry groups and government. There are a number of examples of activities that are on the public good spectrum in Australia:

- many of which encompass the collection and dissemination of information by government agencies — for example, the Australian Bureau of Statistics (ABS) and Australian Bureau of Agricultural and Resource Economics (ABARE) for economic and agricultural information:
  - this would also encompass similar activities by other RDCs and various state departments; and
- the provision of spatial information concerning a range of mapping, geological and satellite-based products provided by Geoscience Australia and a number of state-based government agencies.

There are strong parallels between the provision of these services with similar information-based activities in the United States — a major competitor for Australia in global meat markets. In terms of agricultural statistics and market data, the USDA is required by government legislation to collect and distribute a range of information (box 5.1). The USDA and the National Agricultural Statistics Service (NASS) is enabled by government legislation that sets out the activities that it is required to complete and provides guidelines for the charging policy for program outputs.

5.1 The USDA's National Agricultural Statistics Service

The USDA's NASS is required to conduct farm and industry level surveys and to prepare reports covering virtually every aspect of US agriculture. The objective is to provide a timely, accurate and useful statistics service to US agriculture by:

- reporting the facts about American agriculture — facts needed by people working in and depending upon US agriculture;
- providing objective and unbiased statistics on a pre-announced schedule that is fair and impartial to all market participants;
- conducting the Census of Agriculture every five years, providing the only source of consistent, comparable and detailed agricultural data for every county in America;
- serving the needs of data users and customers at a local level through a network of state field offices and a cooperative relationship with universities and State Departments of Agriculture; and
- safeguarding the privacy of farmers, ranchers, and other data providers, with a guarantee that confidentiality and data security continue to be the top priorities.

Source: http://www.nass.usda.gov/About_NASS/index.asp

The primary legislation, Title 7 of the United States Code, outlines the role of agriculture in US federal law which sets out:

- the functions of the USDA and the NASS;
- an Advisory Committee on Agricultural Statistics;
- the requirement to conduct an agricultural census to collect production and price data; and
- the cost of providing these outputs to users (the current charging policy is free distribution).

Therefore the United States has, through legislation, has assigned a range of base agricultural information to be a public good.

The United States Geological Service has similar objectives, roles and charging polices for geological and spatial data — as required by government legislation.

Benefits of providing public goods

The same logic that sits behind the rationale for the provision of public goods also suggests that identifying the 'benefit' from their provision will be difficult.

Challenges to valuing information

The public good nature of information introduces a number of challenges to its valuation. Economists rely on two concepts to estimate the value of a good or service with public good characteristics. The first is willingness to pay (WTP); the second is opportunity cost.

WTP to value information

WTP builds on economic theory that assumes 'individuals can maintain the same level of utility while trading off different bundles of goods, services, and money' (US EPA 2000). Consequently, the value an individual places on a good or service is revealed through their tradeoffs between money (or some other good) and their level of consumption.

Measures of WTP can be classified as either stated or revealed preferences. The former involves asking individuals directly about their preference. Contingent valuation and conjoint analysis are examples of stated preference techniques. The advantage of stated preference valuation is that it can be employed to value just about any real or hypothetical good or service. Stated preference techniques, however, have been criticised. They do not involve actual choice or actions — consequently, some studies show discrepancies between these (ex ante) WTP values and actual market choices. In addition, stated preference techniques are survey based, bringing with it all of the biases and challenges associated with any survey research (framing, social desirability, etc).

Revealed preference techniques involve analysing observed market data/behaviour to infer the value of a particular good or service. They assume that a good or service can be decomposed according to its attributes. WTP is estimated based on how individuals tradeoff between the attributes of consumed goods or services. The advantage of revealed preference techniques is that it is based on actual behaviour. It is a data-intensive exercise and often faces problems of inadequate information (in terms of availability and/or quality).

A cursory review of the economic literature suggests that WTP estimates for information are limited. WTP techniques (both stated and revealed) have been used to value disclosure, labels, etc. However, claiming that resulting estimates are solely about the information is difficult. The value of information cannot be disentangled from the value of the good or service to which it relates. In other words, the value of information reflects the role information plays in alleviating or reducing uncertainty *and* the value of the outcome associated with using information. Implicit in an individual's willingness to pay for information about a good or service is the individual's desire for the good or service itself (Lee and Hatcher 2001).

Opportunity cost as an indicator of the value of information

Information has some other peculiarities that distinguish it from other normal goods or services. With normal goods (or services), economists assume:

- individuals prefer more to less
- the amount of utility derived correlates positively with the quantity consumed.

The value of information is complicated because the amount of information used is not related to its value (Nilsen 2007). A little bit of information can have significant consequences, producing a large payoff and implying a high value for information. Alternatively, a lot of information may have little or no payoff, implying a small value for information. For example, behavioural economics and decision analysis literature suggests that more information can have a negative effect. Processing information can be costly in terms of time and money.

An alternative way of gleaning the value of information is to consider its role in choice under uncertainty. In other words, the value of information is based on how it is used and the consequent outcomes of its use. Table 5.2 presents four factors affecting the value of information. The value of information increases with the extent to which information reduces uncertainty and/or has a potentially high payoff (in terms of positive outcome). In other words, the greater comfort or certainty information provides about a decision or course of action, the higher its value.

5.2 **Factors influencing the value of information**

Positive correlation	***Negative correlation***
▪ How uncertain are the decision makers?	▪ How much will it cost to use the information to make decisions?
▪ What is at stake as an outcome of decisions?	▪ What is the price of the next best substitute for in the information?

Source: Macauley (2005).

The value decreases with increasing costs of accessing information and/or substitute for information. This second point relates to findings from behavioural economics. Using information can involve high transaction costs. Accessing, reviewing and processing information can involve a lot of time. Individuals will weigh up this time commitment against their use of time for other activities (which may provide a higher payoff or level of enjoyment). Additionally, understanding and using the information may require a broker or expert (for example, use of a solicitor to understand a contract). The associated expense of using an expert has to be assessed against the potential cost (or benefit) of not using the information.

5.3 Value of information

Where the…	*…that information has …*		
	no value	***less value***	***the most value***
…individual's subjective beliefs are…	▪ Extreme (p=0; p=1)	▪ Close to extreme	▪ Indifferent
…costs of making a 'wrong' decision are…	▪ Nil	▪ Low	▪ Large
…extent of actions given the information are…	▪ Nil	▪ Limited	▪ Numerous

Source: Macauley (2005).

Table 5.3 is based on a paper by Macauley (2005) that examines the value of information about the weather. It maps how the value of information may increase relative to three parameters. They are:

- the strength of an individual's subjective beliefs
- the range of actions available given the information
- the magnitude of cost of making a 'wrong' decision.

The value of information increases with the extent to which an individual can use it. The stronger an individual's prior or subjective beliefs, the less likely it is that additional or new information will influence decisions or his/her course of action. In such cases, the value of information will be nil to small. Information is likely to be more valuable if it can provide an individual with a greater range of options. For example, information about how an illness can be treated becomes more valuable where it expands the range of options.

Approach to quantifying the benefits

Types of benefits identified

Following the review of literature and consultation with industry, the outcomes and impacts of the MIP on industry and the community can be categorised by the following sources of benefits:

- setting of standards and benchmarks for the consistent collection and reporting of statistics across markets and Australian states; and
- provision of market and other information that would not have been otherwise collected and distributed without the involvement of the MLA.

Taking responsibility of the NLRS is an example of the benefits of bringing standards to the collection of market statistics. That is, the benefits of these standards are that:

- users can be more certain that they are comparing like-with-like across different markets; and
- there is consistency over time, allowing construction of more-meaningful trends.

In addition, the consultation revealed the importance of the MLA playing the role of supplier of independent and unbiased information especially in reporting the livestock markets. This was an important conclusion made by Gregor (2001).

In terms of the MIP's role in filling the information 'gap' left by other players in the industry, the key benefits that were identified during the consultation process were:

- *reduced costs* (lower transaction costs) in the red meat industry and better market opportunities and profitability from greater certainty or improved capacity to meet market needs —resulting in better prices or higher sales:
  - the benefits of information in terms of *better price discovery* and *greater price stability* and *reduction in risk* borne particularly by producers through reduction in boom–bust cycles;
  - box 5.4 outlines the US experience where potentially there are large payoffs from the supply of market information with these benefits;
- increased demand for Australian red meat as a result of information provided to key international users:
- improvement in the effectiveness of other MLA programs and other policy decisions made by the red meat industry made through peak bodies; and
- more favourable policy decisions and outcomes by government at all levels that benefit the Australian red meat industry.

The challenge for this evaluation is to quantify some of these benefits. Across the benefits identified above, direct benefits to the red meat value industry have the greatest potential for quantification. Indeed, current funding arrangements for MLA would suggest that the majority of benefits should accrue to farm-level activities.

Some components of these listed benefits are amenable to quantification, while many are not. Those components where dollar values can be assigned or inferred are now discussed.

Benefits to the red meat industry

An important component of the total benefit to industry has been identified above as the aggregate across separate impacts of lowering costs and providing better market opportunities and greater market stability (lower risk). This aggregated benefit could be represented by a:

- value in terms of cents per kilogram saleyard equivalent or percentage of the saleyard price; or
- dollar value to each business operating in the industry.

The benefit in terms of cents per kilogram saleyard equivalent is similar to the approach used in a previous ex ante evaluation of the MLA program portfolio conducted by CIE(2000). In that study, the services delivered by the program were assessed to increase saleyard returns by:

5.4 **Value of USDA market information**

While economic theory is rich with the benefits of the (public) provision of market information, there are relatively few empirical studies for the reasons already identified.

One such study conducted for the US cattle and hog industries demonstrated that the release of a range of USDA reports corresponded to a reduction in variation in prices for those commodities. The weight of economic theory suggests that reduction in price variations in markets provides substantial benefits for producers. However, for these commodities, the impacts of these reductions were not translated back to payoffs in income at farm level.

In a separate study on the US dairy sector, substantial increases in value of output and farm incomes were demonstrated as a result of a 1 per cent reduction in risk. If the USDA Dairy Market News resulted in this outcome, then benefits exceeded the cost of the program by 184 times.

Source: Appendix B.

- 1 per cent for cattle producers supplying 1 per cent of Australia's cattle turn off;
- one-fifth of 1 per cent for cattle producers supplying 5 per cent of Australia's cattle turn off; and
- one-fiftieth of 1 per cent for sheepmeat producers.

There are a number of weaknesses in this approach:

- it took the view that the majority of benefits accrued to the on-farm sector by looking at benefits in terms of saleyard price equivalents but ignored value adding activities and benefits to users which could be important; and
- stakeholders consulted for this evaluation found it difficult to translate how they used MLA information into a saleyard equivalent value.

The information obtained from the consultation process used for this study on the use of MIP outputs, as outlined in chapter 4, showed that it is more appropriate to analyse the benefit of the MIP on a business-by-business basis rather than on the basis of individual farms, feedlots and processing plants. This recognises that the same business could own and operate farms or plants at a number of different locations. It therefore makes more sense to assess how a business values information on this basis because having acquired that information; it will be then shared between operations at each location. Box 5.5 explains how the Australian Bureau of Statistics (ABS) distinguishes between these alternative views of business structures.

One of the possible constraints to this 'business-by-business' approach is that a business that may not be aware of MLA provided information, or may not value that information, but may still benefit from other participants in the industry using that information. This is because all businesses are linked through the price determination of the market with decisions by industry leaders, especially, impacting on others.

5.5 **Enterprises and establishments**

The difference between individual farms, feedlots and processors and integrated businesses highlights the difference between the concepts of an enterprise and establishment used by the ABS.

- The enterprise group is a unit covering all the operations in Australia of one or more legal entities under common ownership and/or control.
  - The red meat industry is moving to a more consolidated and vertically integrated structure by integrating company operations over breeding operations, lotfeeding and processing through to sales offices in key export markets.
  - These businesses centralise management and make both short and long term decisions by accessing information once and then sharing it between their operations.
- The establishment is the smallest type of accounting unit operating, in most industries, from one or more locations.
  - An example would be a small family farm, independent agent or standalone processor. The information 'gaps' for these small businesses may be significant, but their capacity to process and analyse a wide range of information is also usually limited.

Source: Australian Bureau of Statistics and the CIE.

Benefit from purchasing decisions

An important benefit to Australian producers from the MIP came from the MIP's role in the decision by global users to source additional product from Australia. MLA was involved in providing information to these users on the benefits of diversifying its sources of supply to include Australian exporters over the period 2003 to 2007. These users had businesses in the United States, Canada and Japan.

Benefits from favourable government decisions

The Australian Government through Department of Agriculture, Fisheries and Forestry (DAFF) and ABARE have a significant involvement in the red meat sector — mainly at farm level. The major input from the MIP into the government is the Australian Agricultural and Grazing Industries Survey (AAGIS). This survey plus other MLA information is used in a number of ways:

- as an input into the Exceptional Circumstances (EC) decisions and the Agriculture Advancing Australia (AAA) program which concluded in June 2008

— including preparation of applications and for assessment of the EC and AAA by government;

  - Examine issues such as economies of size and scale in broadacre agriculture, and in analysing the responsiveness of producers to price changes.

- as an indicator of overall total factor productivity improvements in the sector to ensure programs or practices promote benchmarking and better management practices.

  - Determining the opportunity cost of native vegetation management restrictions, and research into the links between climate variability and farm incomes.

Only the contribution to EC decisions is amenable to any quantification. In addition to those listed above, the Australian Government has also been interested in the competitiveness and price determination of the red meat value industry. In these studies, a range of MLA information was directly utilised as evidence in advice provided to the government (box 5.6). Without this information, these studies would have been more costly and time-consuming to conduct.

5.6 Transparency of the red meat value industry

Recently there have been two major reviews conducted for the Australian Government by DAFF that examined prices and costs along the red meat value industry, among other agricultural products, with the view to establishing if the chains were sufficiently competitive or if players displayed any characteristics of market power.

Spencer(2004) looked at the structure of and developments in the value chains for a range ranges of food products including beef and lamb. The objective of this study was to better understand the determinants of prices paid to the producer by tracking products from farm level through processing to retail level. This included accounting for on-farm, transport, wholesale and retail segments and analysing drivers of profitability in each segment. To do this, the study also made an assessment of the transparency or visibility of the chain to the producer. The study accessed a range of MLA and NLRS data on meat consumption and trends in prices at farm, wholesale and retail levels.

In the case of red meat the study found that the complexities of carcass use in a wide variety of retail products and co-products made transparency difficult and, in addition, that wholesale markets were losing relevance due to the increased prevalence of direct selling.

In a similar study but with more focus, the Australian Consumer Competition Commission (2007) prepared a report that looked at prices paid to farmers for livestock and prices paid for consumers for red meat. This report drew upon statistics and information from a number of sources — including MLA — in examination of determinants of prices along the chain and historical relationships between saleyard and retail prices.

This study, as the case for Spencer (2004), concluded that caution should be used in comparison of saleyard and retail prices because short term disparities do not necessarily imply a weakness in competition because:

- there is long and complex supply chain;
- supply arrangements throughout the chain such as direct selling impacted on the relevance of the saleyard price as a gauge of an appropriate retail price; and
- there was a reasonable degree of competition at both ends of the supply chain.

6 Quantifying the benefits

Given the economic case behind the value of the MIP, this chapter quantifies some of the benefits of the program. Key messages from the consultation and the economic literature show, in practice, the difficulty in obtaining a value of the information provided by the MIP to industry. A significant input to the quantification of the benefits to industry were two interactions with industry and other stakeholders that asked questions concerning how they used and value MLA information through an:

- extensive consultation across the red meat value which is summarised in appendix A; and
- on-line survey of MLA — which is summarised in appendix B.

Constraints on establishing benefit to the red meat industry

An outcome of the consultation process was that in most cases stakeholders were either unwilling or found it difficult to enunciate the value of benefits provided by the MIP. There were a number of reasons for this related to the pervasive and complicated way businesses access and use information.

Stakeholders often confused 'benefit' or WTP of the program with 'paying' for the program through levies:

- this was especially the case where many stakeholders also contributed to the program 'in-kind' through the provision of information to MLA; and
- because of the way in which MLA information is used, attribution of any benefit in terms of better business decisions back to MLA is very difficult.

This is because MLA information is just one part of the mix of information used by business. Decision makers in businesses use information from a range of sources — both the business's own experience of operating in the market (from their own staff) and external (from MLA and other providers including agents). However, this outcome *is* consistent with the role of the program in filling information 'gaps':

- during the consultation, most businesses indicated that they did not access the full range of the MLA information available, but chose that which best filled their information 'gaps'; and
- often the nature of information is cumulative and not separable — that is, businesses learn as they go by combining experiences of direct participation in each market with the available statistics from a number of sources.

These reservations in indicating benefit are consistent with the literature and not unexpected. Many stakeholders could articulate that the MLA program conferred benefits but had difficulty in establishing a dollar benefit.

One metric used by some businesses interviewed were the costs of subscriptions to other (similar) information products such as reports by shipping companies. But in the main, those interviewed found valuation of the benefits very challenging.

In order to improve the quality of the outputs of the consultation, some guidance was provided to those interviewed about the possible extent of the benefits, by prompting them with a dollar value. This guidance was calibrated to the value of benefit required to pay for the program expenditures of around $4 million each year and assuming that most of this benefit would accrue to farm level businesses. Stakeholders were asked if they would be willing to state their benefits relative to the following values:

- $35 to $40 for farm level businesses
- $500 for feedlots
- $3500 for processors and exporters.

This approach is therefore problematic because of the scope for introduction of bias:

- in leading the respondent to the question (through prompting values); and
- appendix A shows that the consultation process had a significant representation of larger businesses and industry leaders.

This latter problem then leads to the problem of translation of responses from the (small) sample to the wider population (all businesses in the industry).

Responses varied widely between businesses depending on their level of integration with the industry. It also varied widely between segments of the industry and even between businesses within the same or similar segments — for example feedlots. Respondents had real difficulty in comprehending what the market information environment would be in the absence of the MLA program.

Those who expressed the view that the benefit obtained exceeded the 'break-even' value had difficulty in comprehending what market information services might be provided in the absence of the MLA program. Similarly, many respondents putting a low value on the program usually failed to fully identify the extent and timing of information attributable to the MLA program.

Stakeholders were also asked how benefits may have changed over time over the timeframe of the evaluation. The time path for the assumed benefit stream is relative to the latest year — 2008-09 — for which stakeholders were asked to

indicate a value that represented the benefit from the program. Nearly all of the stakeholders found this concept difficult because:

- they had not been involved in the industry over the timeframe of the program; or
- the way information is cumulative and the scope to switch between different sources of information makes attribution very difficult.

Calculation of the total benefits of the MIP is also dependent on the total number of businesses directly or indirectly using the information.

The number of businesses is therefore also another important part of the total benefit equation. This consideration brought another problem for this evaluation. While many of the statistics for the red meat industry are closely tracked, there is uncertainty about exactly how many businesses participate in the red meat value industry — especially in processing and exporting segments.

Translation of the sample to the population

Statistical techniques — such as surveying a stratified random sample of industry players — require a high level of knowledge of the characteristics of the population of businesses in the industry. While we do have reasonable information on the number of businesses in some segments of the industry, we have little idea how the groups within each segment value MLA information.

The sample for the consultation and the set of respondents to the online survey for MLA subscribers are relatively small. These samples are likely to give us an unrepresentative or inaccurate picture of the total population. It is safe to assume there are some significant biases in the sample.

- Those consulted are predominantly large businesses or industry leaders who are already aware of and support MLA services — and were willing to be consulted.
- Those subscribers who responded to the online survey are 'self-selected', they are already familiar with MLA services and are enthusiastic enough to respond.

Given the objective of quantification of these benefits and the presence of the (unknown) bias — the survey results provide, at best, an indication of benefits received by users of MLA information. To use these estimates, we then needed to make judgements about:

- how representative the sample is of the population; or alternatively
- how the sample may be biased.

Better knowledge of the composition of the businesses within the red meat industry, what information they access and how they use this information would

better enable MLA to target this segment. Extension programs would be tailored to increase the effectiveness and value of existing MLA services.

Direct benefits to the red meat industry

A formal benefit–cost analysis that measures the value of benefits to producers, feedlots and processors/exporters requires a range of data and assumptions. These are:

- indicative benefits to businesses in major segments of the industry — including how these benefits are composed;
- a time path of the flow of these benefits that is likely to correspond to the evolution of the outputs of the program; and
- a time series of the number of businesses involved in the red meat industry — producers, feedlots and processors/exporters.

The first step in determining the benefits was to determine average benefits that businesses gain from the program.

Consultation results

The primary information source was the consultation undertaken on behalf of MLA which was conducted in the first half of 2009 (see appendix A). Consequently, the values elicited from stakeholders interviewed represent average benefit per business for the 2008-09 financial year — even though the timeframe of this evaluation terminates in 2007-08.

Table 6.1 shows the average value and distribution of benefits across three groups of benefit recipients — those receiving low, medium and high benefits. In terms of each category, low includes businesses that reported no benefit on the program outputs. The high category includes those businesses that place a benefit on the program that is up to three times that of the average. The analysis excluded some participants in the industry, such as saleyard operators and agents, who were not directly addressed in the consultation process.

A feature of table 6.1 is the relativities between the segments identified, particularly the high proportion of sheepmeat producers reporting high benefits compared to cattle producers. The feedlots are significant supporters of the program, valuing benefits at over $500 per business. On average, processors were found to benefit to the value of $3500 per business. Differences between the segments of the industry are not surprising given the different ways in which information can be accessed and used.

6.1 Profile of benefits of MIP to red meat value industry for 2008-09

Industry segment and benefit range	*Benefits range*	*Assumed distribution of benefits*[a]
	$ per business	% of businesses
Cattle producers		
Low	0–39	36
Medium	40–79	55
High	80–400	9
All businesses[b]	**61**	100
Sheepmeat producers		
Low	0–39	38
Medium	40–79	12
High	80–400	50
All businesses[b]	**135**	100
Feedlots		
Low	0–199	60
Medium	200–499	20
High	500–4 000	20
All businesses[b]	**580**	100
Processors and exporters		
Low	0–3 499	31
Medium	3 500–3 999	50
High	4 000–8 000	19
All businesses[b]	**3 546**	100

a From sample of 61 firms surveyed during consultation. **b** Weighted by distribution from sample.
Source: Consultation with industry and CIE assumptions.

A characteristic of this consultative approach is it is likely to involve bias due to the comparatively small size of the sample. Therefore it is difficult to assess if bias arises from either:

- the average value of benefits obtained from consultation for each of the low, medium and high categories being incorrect; or
- the distribution of the sample from the consultation across the categories (translation from the sample to the population) is incorrect.

Also, as discussed in appendix A, some interviewed were concerned about the link between statements of benefit from the MIP and higher subscriptions costs for MLA Market Information in the future.

There is likely to be substantial bias which is the result of consulting with (primarily) specialist lamb producers - who may not be representative of the more numerous mixed sheepmeat enterprises.

Table 6.2 shows the impact of changing the assumed distribution of the benefits by increasing the proportion of those producers that receive low or no benefit

from 20 per cent to 60 per cent. The logic for this assumption is the incidence of 'mixed' enterprises in the sheepmeat industry. Holmes Sackett and Associates (2003) estimate that 55 per cent of the Australian sheep flock is run in the sheep-cereal zone and the remaining 45 per cent in specialist grazing areas.

Overall, this change reduces the average benefits from the program to sheepmeat producers from $135 per business to $54.

6.2 Sensitivity test on benefit to sheepmeat producers

Industry segment and benefit range	***Benefits range***	***Assumed distribution of benefits***[a]
	$ per business	% of businesses
Sheepmeat producers		
Low	0–39	60
Medium	40–79	30
High	80–400	10
All businesses	**54**	100

Source: Consultation with industry and CIE assumptions.

On-line survey results

The other source of information on these benefits was from the online survey (see appendix B). The key results on program benefit are shown in table 6.3.

While the sample for this survey is substantially larger than for the consultation (61 businesses) the bias is likely to be higher because:

- respondents are 'self-selectors' and are already aware of MLA products;
- respondents to the online survey felt freer to express their views because of anonymity;
- there was no opportunity to moderate the answers provided in an attempt to ask what was driving the assessment of benefits; and
- there was no effective way of getting respondents to face a market-like tradeoff where businesses have to make a choice on the basis of real expenditures.

Overall, the benefit claimed by online respondents was substantially higher than from the consultation:

- farm level producers recorded over $3000 of benefit; with
- respondents from feedlots ($6300) and processors ($4500) claimed very high values compared to those emerging from the consultation.

The total benefit to the relevant component of the MIP implied by the 748 respondents is $2.6 million. Even it is assumed that the remainder of industry receives no benefit, this represents 60 per cent of the MIP expenditure.

However, for the reasons identified above for the sample being biased, it is very

6.3 **Market Information benefit from online survey for 2008-09**

	Distribution of benefits					
	$0–$99	***$100–$999***	***$1000–$4999***	***Over $5000***	***Average benefits[a]***	***Number of respondents***
	Percentage of respondents				$ per business	No.
Sheep producers	15	24	42	19	3 235	84
Cattle producers	19	23	34	24	3 217	312
Mixed species producer	18	20	40	22	3 317	64
Lotfeeders	11	11	22	56	6 306	9
Processor mainly domestic market	24	19	25	32	4 310	37
Processor mainly export markets	14	19	32	35	4 850	22
Livestock agent	18	21	31	30	4 001	38
Agribusiness	18	27	20	35	3 982	44
International customer	28	40	20	12	1 985	25
Other residing outside Australia	8	31	31	30	4 269	13
Other	32	15	27	26	3 239	100
Total	20	22	33	25	3 449	748

a Weighted average across aggregated benefit categories.
Source: MLA Market Information Subscriber On-line Survey, July–August 2009.

difficult to translate the on-line values for this sample to the wider industry population.

Other supporting evidence

Empirical evidence of the value to businesses of any market information services is sparse in the literature. Studies from the United States (summarised in appendix C) concentrate on benefits to industry from a more macro level using a top-down approach.

Gregor(2001), in an options paper for the NLRS, reported another study where producers were willing to pay on average $79 each year in 1995 for similar services. After adjusting for inflation, this would be worth $110 per year in 2008-09 terms.

Another benchmark would be the cost of subscription to similar services such as Australian Cattlefacts. The current cost of this service involves a $380 joining fee and an annual cost of $270 which after discount falls to $102 (http://www.cattlefacts.
com.au/MembDis.asp, date accessed 10 November 2009). By annualizing the joining fee over 10 years, the equivalent cost would be between $140 and $307 each year. It is important to note that this value also may not representative of all producers with some being willing to pay less and some more than this amount.

Benefits from more certain prices

As identified in chapter 5, some of the expected benefits of the program are from lower risk and greater price certainty — which accrue to all businesses across the industry. The benefits identified in the section above implicitly accounts for the benefits from lower price risk.

To separately quantify the payoffs from reduced price risk is not possible in this evaluation — simply because the tools required are not available to complete the analysis. As identified in appendix B, the benefits of lower price risk has been modeled for the US dairy industry. The framework required to do this was an investment portfolio model incorporating uncertainty that identified competing activities — for the red meat industry the portfolio should not only include alternative farm level activities but also those in the rest of the chain and even investments that could be made outside of agriculture.

No such portfolio approach exists for the Australian red meat industry due to two factors:

- in both specialist and mixed enterprises — beef and sheepmeat production competes with a wide range of activities throughout Australia in complex systems including grains and wool production; and

- Australian markets are naturally volatile due to a range of external factors including changes in weather patterns, volatile exchange rates and a range of market developments overseas such as changes in disease status.

It would be a complex task to capture these aspects in a framework especially when the potential impacts of say, changing weather patterns, are so large.

Time path of benefits

The timeframe for this evaluation is the period 1998-99 to 2007-08 — since the inception of MLA. Over this time the coverage and the number of products (including value added services) has improved and adapted to changing industry requirements. This would naturally imply that how the red meat industry value these services would also change over time. However, the approaches used to quantify the benefits were only for one year — 2008-09. During the consultation, stakeholders could not enunciate any timepath for benefits.

Table 6.4 shows what has been assumed for this evaluation. One guide is the timepath of program expenditures in real terms— relative to those in 2007-08. As highlighted in chapter 2, the most significant change to the program was the incorporation of the NLRS — a function transferred from state-level authorities. Significant benefits are assumed to have resulted from the harmonisation of the collection of saleyard and other statistics across Australia.

In addition to looking backwards, judgements also need to be made to address the impacts of the program of the flow of benefits if the program were (notionally) ceased in 2007-08. We know that across a range of MLA activities that the profile of benefits would be significantly different if funding ceased:

- promotion generally has very short term impacts that falls to zero without follow-up expenditures; whereas
- on-farm R&D has a significantly longer lag profile persisting with program benefits persisting over ten years.

For this evaluation we have assumed that without continued funding beyond 2007-08— the benefits of the program will fall to zero within 2 years. While accumulated industry information on a historical basis is of value to the industry maintenance of up-to-date information is essential to the medium-to-long term planning of the industry.

6.4 **Assumed time path of benefit streams**

Year	*Annual expenditure as proportion of 2007-08* [a]	*Proportion of realised benefits*[b]
	%	%
1998-99	51.0	50.0
1999-00	55.0	60.0
2000-01	53.9	70.0
2001-02	55.3	80.0
2002-03	127.4	90.0
2003-04	114.4	100.0
2004-05	108.6	100.0
2005-06	105.8	100.0
2006-07	103.0	100.0
2007-08	100.0	100.0
2008-09		30.0
2009-10		10.0

a Relative to 2007-08 MIP expenditures in real terms. Evaluation timeframe covers the period 1998-99 to 2009-10 **b** Relative to payoffs in 2008-09 in real terms.
Source: CIE.

Number of businesses

The number of businesses involved in the red meat industry should be easy to observe — but there are some significant data gaps and inconsistencies, especially for the number of processors and exporters. Table 6.5 shows the values that have been used for this analysis.

Farm level numbers for beef and sheepmeat are sourced from the ABARE/MLA farm surveys. In 2006-07, there were over 79 000 farm level businesses producing beef and sheepmeat. Since 1998, the number businesses producing sheepmeat has fallen significantly.

The estimated population at farm-level may also provide some information that could assist with the translation of the sample for this evaluation to the population. Over the past five years, on average:

- 60 per cent of beef enterprises are recognised as specialists (earning more than 50 per cent of receipts from beef cattle)and
- 48 per cent of sheep enterprises are recognised as specialists (earning more than 50 per cent of receipts from the sale of sheep, lambs or wool).

But it is difficult to translate the ‘specialist’ classification into how different farm-level businesses use and value MLA information.

6.5 **Number of businesses involved in the red meat industry**

	Farm level			*Feedlots*	*Processors /exporters*
	Beef	*Lamb*[a]	*Sheep*		
	no.	no.		no.	no.
1998-99	36 559	16 299	41 961	607	300
1999-00	39 237	18 728	40 366	601	300
2000-01	40 635	18 351	39 126	669	300
2001-02	38 575	18 505	39 310	647	300
2002-03	41 481	15 507	38 376	592	300
2003-04	38 286	14 907	38 490	577	300
2004-05	31 819	17 663	35 816	635	300
2005-06	33 481	19 301	34 545	673	300
2006-07	27 643	16 483	29 455	711	300
2007-08	29 614	17 763	29 630	724	300

a Specialist producer.
Source: ABARE/MLA Farm Surveys AUSMEAT, and CIE calculations.

In terms of feedlots numbers, for the most recent year the Australian Lot Feeders Association (ALFA) reports around 500 operating businesses down from over 900 in 2000. Another more consistent source of a time series is the number of NFAS accredited feedlots that enables a producer to sell cattle that meet the AUS-MEAT minimum standards as Grain Fed or Grain Fed Young Beef — these cattle end up in domestic and export markets.

One guide on the number of red meat processors and exporters are estimates of those businesses which are accredited by either AUSMEAT or by the Australian Quarantine Inspection Service (AQIS). Communication with AQIS showed that there were 313 licensed 'meat exporters' in 1998, which would include red and other meats. For 2007-08, AQIS reports that there were 356 licensed meat exporters. Conservatively, it has been assumed that there was an average of 300 processors/exporters over the timeframe of this evaluation.

These numbers highlights the relative small size of the samples for the consultation and the on-line survey relative to the potential population of businesses.

Results of program benefits from the industry

The first step is to choose values that reflect the benefit of the MIP across the red meat industry from the evidence collated earlier in this chapter. This values from the consultation and the on-line survey is summarised in table 6.6 below.

The value of benefits per business from the MIP were used from the consultation as the basis for this evaluation. The rationale for this choice was:

- these values are *conservative* relative to the other evidence available and so reasonably represent a lower bound of the true values;

6.6 **Value per business of MIP 2008-09**

	Farm – beef	*Farm – sheepmeat*	*Feedlots*	*Processors/ exporters*
	$ per business	$ per business	$ per business	$ per business
Consultation[a]	*61*	*54*	*580*	*3 546*
On-line survey	3 235	3 217	6 303	4 850

[a] Used in this evaluation.
Source: Table 6.1, 6.2 and CIE calculations.

- the problem of biasness from the consultation (after correction of the distribution for sheepmeat producers) may not be as significant for the online-survey.
  - The values from the on-line survey will be incorporated into the analysis by way of a sensitivity analysis later in this chapter.

Table 6.7 sets out the time path of the projected benefits from major segments of the red meat industry from the MIP. The values shown in the table are a combination of:

- the program benefits per business for 2008-09 in real terms (table 6.6)
- the assumed timepath of those benefits (table 6.3).

6.7 **Value per business of the MIP from the consultation**[a]

	Farm – beef	*Farm – sheepmeat*	*Feedlots*	*Processors/ exporters*
	$ per business	$ per business	$ per business	$ per business
1998-99	22	20	212	1 397
1999-00	28	25	267	1 760
2000-01	34	30	325	2 144
2001-02	42	37	396	2 614
2002-03	50	44	472	3 117
2003-04	52	45	487	3 211
2004-05	53	46	500	3 301
2005-06	54	47	512	3 377
2006-07	56	49	526	3 468
2007-08	*58*	*50*	*544*	*3 589*
2008-09	20	17	185	1 219
2009-10	6	5	58	382

[a] For the program over the period 1998-99 to 2009-10 using benefits obtained from the consultation.
Source: Table 6.1, 6.3 and CIE calculations.

For example, table 6.6 reports an average benefit of $61 for each farm level beef producer for 2008-09. In 2007-08, with 100 per cent of these benefits (as shown in table 6.4), table 6.7 reports this value to be $58 per business — the same as 2008-09 in real terms.

As a result of way in which the questions on benefit were asked about the value of the MLA MIP, 100 per cent of the benefit identified is attributable back to MLA.

6.8 **Total benefit of the MIP to red meat industry for consultation benefits**

	Farm – beef	*Farm – sheepmeat*	*Feedlots*	*Processors/ exporters*	*Total*
	$m	$m	$m	$m	$m
Present value[a]	23.8	30.8	4.0	12.3	70.9
1998-99	0.8	1.1	0.1	0.4	2.5
1999-00	1.1	1.5	0.2	0.5	3.3
2000-01	1.4	1.7	0.2	0.6	4.0
2001-02	1.6	2.1	0.3	0.8	4.8
2002-03	2.1	2.4	0.3	0.9	5.7
2003-04	2.0	2.4	0.3	1.0	5.6
2004-05	1.7	2.5	0.3	1.0	5.5
2005-06	1.9	2.5	0.3	1.0	5.8
2006-07	1.6	2.2	0.4	1.0	5.2
2007-08	1.7	2.4	0.4	1.1	5.6
2008-09	0.9	1.2	0.2	0.6	2.9
2009-10	0.5	0.6	0.1	0.3	1.5

[a] Present value over the period1998-99 to 2009-10 in 2007-08 dollars using a discount rate of 5 per cent.
Source: CIE calculations.

Table 6.8 shows the time path of program benefits in nominal terms and in present value terms. Overall, for 2007-08, total benefits from program are calculated to be over $5.6 million. For 1998-98, the first year of this evaluation, industry benefits are projected to be $2.5 million in nominal terms or roughly half that for 2007-08. Note that this total excludes any benefits to other segments of the industry including government, stockyards, agents, agribusiness and users.

The 2007-08 benefit of $5.6 million compares to MLA program expenditures of around $4.3 million — therefore, direct benefits to the industry are (conservatively) calculated to be thirty per cent higher than the program expenditures before accounting for other benefits flowing from the MIP.

In net present value terms, the benefits of the program are shared:

- 82 per cent to farm level including feedlots
- 18 per cent for processors and exporters.

This spread of benefits is consistent with observed industry structure and outcomes from the consultation. Most of the benefit should fall to the farm sector because of the fragmented producer base as opposed to the consolidated and integrated nature of the processing sector.

Sensitivity analysis

The analysis could also be based on the benefits identified from the online survey. As already noted these values are substantially higher than from the consultation.

To provide an indication of this higher level of benefit, while remaining conservative, a sensitivity analysis was conducted using farm level benefits that are *10 per cent* of those from the online survey. Table 6.9 shows the results from this test.

6.9 **Total benefit of the MIP for 10 per cent of online survey benefits[a]**

	Farm – beef	*Farm – sheepmeat*	*Feedlots*	*Processors/ exporters*	*Total*
	$m	$m	$m	$m	$m
Present value[a]	132.1	208.1	42.2	15.2	397.6
2007-08	11.6	18.2	3.7	1.3	34.8

a Present value over the period1998-99 to 2009-10 in 2007-08 dollars using a discount rate of 5 per cent.
Source: CIE calculations.

For the on-line survey, benefits to beef and sheepmeat producers are in the order of $300 per business or five times those elicited from the consultation. There is little surprise that these larger benefit values at farm level results in substantially larger total benefits that far exceed program costs.

Increased red meat demand by global users

To quantify some of the benefits of the MIP delivered to users of Australian red meat, table 6.10 sets out the additional quantities purchased from major global users of beef from Australian suppliers over the timeframe for the evaluation as a result of MLA market information being used to secure these account. Additional purchases peaked at 45 kt product weight in 2004.

6.10 **Purchase of Australian beef by major global users.**

Calendar year		*Additional purchases of beef*
	kt pw	kt cwe
2003	31.0	46.5
2004	45.0	67.5
2005	33.0	49.5
2006	15.0	22.5
2007	16.0	24.0

Source: Personal communication with users, 13 June 2007.

During the consultation process these users indicated that of all the information that they considered when making the decision to purchase Australian (and New Zealand) beef that more than 50 per cent can be attributed back to MLA.

To quantify the impact of the purchasing decision — the MLA's integrated framework (IF) was used to translate these additional purchases of beef back to payoffs at farm level. Table 6.11 shows that these additional purchases contributed 10 to 12 per cent of Australia's exports during 2004 and 2005.

6.11 **Significance of additional purchases to Australian beef exports**

	Additional purchases		*Exports to the US and Canada*
	kt cwe	Kt cwe	%
2003	46.5	622	7.5
2004	67.5	571	11.8
2005	49.5	461	10.7
2006	22.5	457	4.9
2007	24.0	460	5.2

Source: Personal communication 13 June 2007, CIE calculations.

The results shown in table 6.12 indicate that the payoffs by the purchase decision informed by MLA information provided significant benefit, particularly to farm-level beef producers in the southern and northern industries. In 2004-05 the year of maximum impact, farm incomes were $43 million higher than otherwise the case. The northern industry captured around two-thirds of the gain due to its greater exposure to the North American market.

6.12 **Payoffs from Increased red meat demand by global users**

Year	*Southern beef*	*Northern beef*	*Feedlots*	*Total*	*2007-08 terms*
				$m	$m
Present value[a]					131.6
1998-99	0.0	0.0	0.0	0.0	0.0
1999-00	0.0	0.0	0.0	0.0	0.0
2000-01	0.0	0.0	0.0	0.0	0.0
2001-02	0.0	0.0	0.0	0.0	0.0
2002-03	0.0	0.0	0.0	0.0	0.0
2003-04	4.9	14.0	-1.7	17.2	15.4
2004-05	13.5	30.1	-0.9	42.7	39.0
2005-06	12.5	22.7	-0.8	34.5	32.3
2006-07	5.7	9.6	-0.3	15.1	14.6
2007-08	6.1	11.0	-0.4	16.7	16.7
2008-09	0.0	0.0	0.0	0.0	0.0

a Present value over the period 1998-99 to 2009-10 in 2007-08 dollars using a discount rate of 5 per cent.
Source: GMI model and CIE assumptions.

Over the timeframe of the evaluation, the present value of these benefits amount to $131 million in 2007-08 terms. Again these benefits are substantially larger than the cost of the MIP.

Increased exceptional circumstance support for industry

As part of the funding agreement between MLA and ABARE for the project *Measuring the performance of beef and sheep meat producing farms (2009-2010,* an indicative benefit-cost ratio for the AAGIS has been calculated. The calculation in the agreement comprises the following benefits from the AAGIS:

- through more efficient use of R&D resources to inform industry; based on an assumed 2 per cent contribution to measured total factor productivity growth; and
- as an input into EC decision making, including the preparation of applications and assessment of application by government.

For this evaluation, table 6.13 reproduces the benefits from EC decision making only. These are taken from the funding agreement showing the scope of benefits to beef and sheepmeat farms from more favourable decisions on EC payments, as the result of MLA funded AAGIS. The table shows that total payments for interest subsidies and direct relief have been substantial over the past five years across all industries in agriculture. To translate these payments to benefits to the red meat industry some assumptions are required.

6.13 **Benefits of increased exceptional circumstance support for industry[a]**

	Interest rate subsidy		*Relief payments*		
	Total payments[b]	***Benefit to applicants***	***Total payments[b]***	***Benefit to applicants***	***Total benefits***
	$m	$m	$m	$m	$m
1998-99	17	1	0	0	0.5
1999-00	13	0	0	0	0.4
2000-01	9	0	0	0	0.3
2001-02	9	0	0	0	0.3
2002-03	60	2	49	2	3.6
2003-04	103	3	149	6	8.7
2004-05	120	4	119	4	8.1
2005-06	163	5	160	6	10.9
2006-07	549	17	250	9	26.0
2007-08	600	18	377	14	32.2
2008-09	300	9	200	7	16.6

a In the preparation and assessment of applications for EC. **b** Total payments across all agriculture sectors and regions.
Source: Productivity Commission (2009) and CIE calculations.

For interest rate subsidy payments it has been assumed that for the timeframe of the evaluation that:

- 61 per cent of the total payments were to (red) meat producers (Productivity Commission, 2009); and
- 5 per cent of applications critically depended on the provision of AAGIS data.

In the case of relief payments it has been assumed that for the timeframe of the evaluation that:

- 74 per cent of the total payments were to red meat producers (Productivity Commission, 2009); and

- 5 per cent of applications critically depended on AAGIS data.

In 2007-08, a year on which total EC payments of $977 million were made across agriculture, the favourable assessment as a result of MLA funded information would have been worth over $30 million to the red meat industry. In present value terms in 2007-8 dollars over the evaluation timeframe, the total benefit is worth $118 million.

This analysis is relatively narrow and excludes other benefits that may flow to the industry from government to industry that is facilitated by MLA information.

Summary of benefit–cost analysis

Table 6.14 shows the composition of the present value of the benefits from the MIP that have been quantified in this evaluation — which total $255 million. A significant proportion of the benefits (27.8 per cent) represent the (conservative) benefits to the red meat industry from the program for values obtained from the consultation:

- all three benefit categories that have been quantified are sufficiently large to pay for the programs' expenditure on their own; but
- the benefits from the EC payments are the largest single component accounting for 46 per cent of total benefits.

6.14 **Composition of identified benefits from the MIP**

Components	***Attribution***	***Total benefits[a]***	***MLA benefits[a]***
	%	$m	$m
Direct benefits to the red meat industry[b]	100	70.9	70.9
Increased red meat demand by global users	50	131.6	65.8
Increased exceptional circumstance support for industry	100	118.4	118.4
Total	79	320.8	255.0

a Present value over the period1998-99 to 2009-10 in 2007-08 dollars using a discount rate of 5 per cent. **b** Using benefits per business obtained from the consultation.
Source: CIE calculations.

Table 6.15 presents the bottom line for this evaluation indicates that the net benefit of the program could be at least $210 million with a benefit–cost ratio of 5.6 to 1.

6.15 **Bottom line for the MIP**

Key outcomes	*Unit*	*Total program benefits identified*	
		Industry benefits from consultation	*10 per cent of industry benefits from online survey*
Total benefits[a]	$m	255.0	581.8
MLA program expenditures[a]	$m	45.2	45.2
Net benefits	$m	209.8	536.6
Benefit–cost ratio		5.6	12.9
Internal rate of return[b]	%	na	na

[a] Present value over the period1998-99 to 2009-10 in 2007-08 dollars using a discount rate of 5 per cent. [b] It is not possible to calculate because MIP benefits exceed costs in every year.
Source: CIE calculations.

The table also shows the corresponding total outcome where the category *Direct benefits to the red meat industry* for the case where 10 per cent of the industry benefits from the online survey were used. In this case the total benefits increase to over $581 million in present value terms with a benefit–cost ratio of 12.9 to 1.

This outcome is based on a less conservative per business value of the MIP to industry, where the category *Direct benefits to the red meat industry* comprises nearly 70 per cent of the total benefits identified by this evaluation.

Lessons learned

Key messages from this evaluation are:

- market information is an industry good with public good attributes;
- MLA is best placed to provide this industry good.
  - Provision by MLA fills the 'gap' that otherwise would not be filled by other providers of similar information.
  - This conclusion is similar to the finding of the inquiry into the NLRS conducted by Gregor (2001). The logic is supported by the cost savings on corporate overheads to industry and its role as the provider of independent information.
- valuation of the benefits from information services is very difficult;
  - This experience is consistent across the relevant literature in this field.
  - The two approaches used in this evaluation elicited values of benefits from the MIP from a consultation process and an online survey.
  - for the purposes of conducting a rigorous benefit-cost analysis, these methods were not ideal but do provide an indication of benefit;
  - The results are biased and therefore require significant judgement in their interpretation to enable translation from the sample to the wider industry.

- it is recommended that MLA better understand the profile, information use and requirements of small to middle businesses within the red meat industry.
  - An improved understanding of this segment would enable better targeting and extension of market information services already provided by MLA.
- MLA should also be mindful of industry views from the consultation regarding the maintenance of NLRS price reporting that is independent, focuses on and is comparable across the markets that represent the majority of the yardings.

Appendices

A Face-to-face and telephone consultations

MLA, with the Centre for International Economics (CIE) and the assistance of an independent industry specialist, undertook a systematic round of one-on-one consultations with a sample of likely users of the various market information services provided by MLA.

The purpose of the consultations included the ranking of the 'information products' and dissemination channels preferred by information users, the uses to which the information is put (in terms of short term operational/management decisions and longer term strategic business decisions), and the value that the information brings to the businesses of users.

Interviewees were also invited to suggest ways in which MLA market information services could be improved and efficiencies achieved.

A list was compiled to include nine categories of likely users:

- cattle producers
- sheepmeat producers
- beef feedlots
- saleyards and agents
- beef processors and exporters
- sheepmeat processors and exporters
- agri-business and global end users
- rural media
- Australian government.

The selection of producers and beef feedlots for interview was from peak industry organisation membership lists and, additionally, identified large scale grazing enterprises. Processors and exporters were selected to ensure wide geographical coverage and scale of enterprise. The agri-business, global end-user and media selections were made from known users of MLA market information services.

A total of 61 interviews were successfully completed from an initial list of about 80. Of the 61 interviews, 40 were with producers, processor/exporters and feedlot operators. All states in most categories were represented in the sample. Smaller operators in all categories were probably under-represented.

The consultations occurred mainly over May–June 2009.

Conducting the consultations

A structured interview was prepared for each category to reflect the different mix of information 'products' likely to be sourced from MLA and used by the selected interviewees. There were, of course, many common elements in every category of consultation, including the key question of 'value' that users attributed to MLA Market Information.

The majority of consultations were by telephone but face-to-face meetings were held with easily accessible users based around Sydney, Brisbane and Melbourne. Each interview typically lasted 30–50 minutes.

Most consultations were arranged in advance to give the interviewee time to think about the value of MLA Market Information to their operation/business. Interviewees were assured that their identity would not be disclosed without their agreement but most indicated they did not mind. The purpose of the interview was carefully explained and, without exception, interviewees were earnest in providing a considered response.

Outcomes

Nearly every interviewee was familiar with the range of market information products made available by MLA but few received them all. Nearly all also recognised that much of the information disseminated by Rural Press (mainly weekly newspapers) and radio (mainly ABC regional services and weekly TV 'Landline') was sourced originally from MLA.

Increasingly the internet was identified as the channel providing the most timely, detailed and cheapest means of getting information to users. Some complained of information overload. The rural media were widely appreciated for providing market information, but even among producers, this information was used more passively to monitor market trends and to 'back up' information coming from other channels.

Many interviewees had difficulty in identifying the particular ways they use MLA Market Information. This is mainly because information they use is obtained from a variety of sources and most users do not consciously isolate information coming from MLA.

Some were able to identify the particular contribution that MLA information made to particular business decisions. For example, the annual MLA industry projections were identified by some as valuable input into annual strategic planning sessions. As another example, some producers cited the daily NLRS saleyard reports as strongly influencing the timing of their turnoff decisions and

the location of where to sell their livestock. Meat and Livestock Weekly was the most widely and highly regarded information 'product'.

Some information gaps and deficiencies were identified. For example, lamb processors and exporters and some lamb producers were critical of the inadequacy of the MLA lamb survey in providing rolling projections of the numbers of each season's lambs maturing for turnoff. Some beef processors were critical of the impact that the quarterly cattle on feed survey allegedly has on fed cattle prices; others on the lag in releasing the reports.

Valuing MLA market information services

Nearly every interviewee had difficulty in assigning a specific monetary figure on the value of the market information to their business/operation. A small number used comparisons with the prices they pay for similar services from other information providers. Most, however, could not make such comparisons.

To assist them, they were prompted with calculations about the break-even cost of MLA providing the information services. Translating the cost to average cost per producer and processor provided a benchmark against which interviewees were asked to compare their assessment of the value to them of the MLA service. For producers, this benchmark cost is in the range of $30-40 per producer and for processor and exporters and feedlot operators it is $3000-4000.

Interviewees were asked to state a value to their businesses relative to these benchmarks. This approach was usually supplemented with the question: 'Is the industry getting fair value for the levy funds spent on market information costing this much per producer (processor)?'

The values assigned by each business are described in table A.1.

Improvements and efficiencies

These average values are all in excess of the average cost to MLA in providing the services. Despite this, many interviewees are keen for MLA to continue to look for savings. The most common potential saving suggested was a reduction in the number of saleyards reported by the NLRS, providing coverage to only the two or three main saleyards in each state (while arguing that increased resources should be devoted to over-the-hooks reporting). Many, including producers, also favoured a phased elimination of printed/posted information products and their replacement with electronic services only. Recent innovations such as SMS release of key data items are highly regarded.

A.1 **Calculation of value of benefits from the MIP, 2008-09**

Industry segment and benefit range	*Benefits range*	*Assumed distribution of benefits*[a]
	$ per business	% of businesses
Cattle producers		
Low	0–39	36
Medium	40–79	55
High	80–400	9
All businesses[b]	**61**	100
Sheepmeat producers		
Low	0–39	38
Medium	40–79	12
High	80–400	50
All businesses[b]	**135**	100
Feedlots		
Low	0–199	60
Medium	200–499	20
High	500–4 000	20
All businesses[b]	**580**	100
Processors and exporters		
Low	0–3 499	31
Medium	3 500–3 999	50
High	4 000–8 000	19
All businesses[b]	**3 546**	100

[a] From sample of 61 firms surveyed during consultation. [b] Weighted by distribution from sample.
Source: Survey of industry stakeholders.

A minority of processor and exporters were critical of the availability of the information to overseas interests, particularly their customers on the grounds that it weakened the negotiating position of Australian exporters. The opposing view was that information, if that significant, would be sourced by other means and it was in the Australian industry's best interest for markets to be informed by objective, independently sourced information.

Improvements were suggested for access to the MLA database of prices and export quantities by cut categories and destinations, the frequency and timeliness of the feedlot survey, the lamb survey and reporting of state and regional slaughter data.

A small minority of most categories of interviewees supported the continuation of the subsidy to maintain the cattle futures contract. The majority sees little need for this means of price risk management in the Australian beef industry.

A valued service to the industry

Although interviewees found it difficult to assign a monetary figure to the value of MLA Market Information, almost all identified at least several outputs of MLA's Market Information service as being useful to their business/operation. The

interviewees, in general, believed the industry gets value for money from the program or the program is a good use of levy funds.

B On-line survey

In July–August 2009, MLA carried out an online subscriber survey about the value of MLA's Market Information program (including the value of each of the main outputs of the program), how the information is used, and how accurate and timely the information is. The survey was sent to all email subscribers to MLA's market information publications.

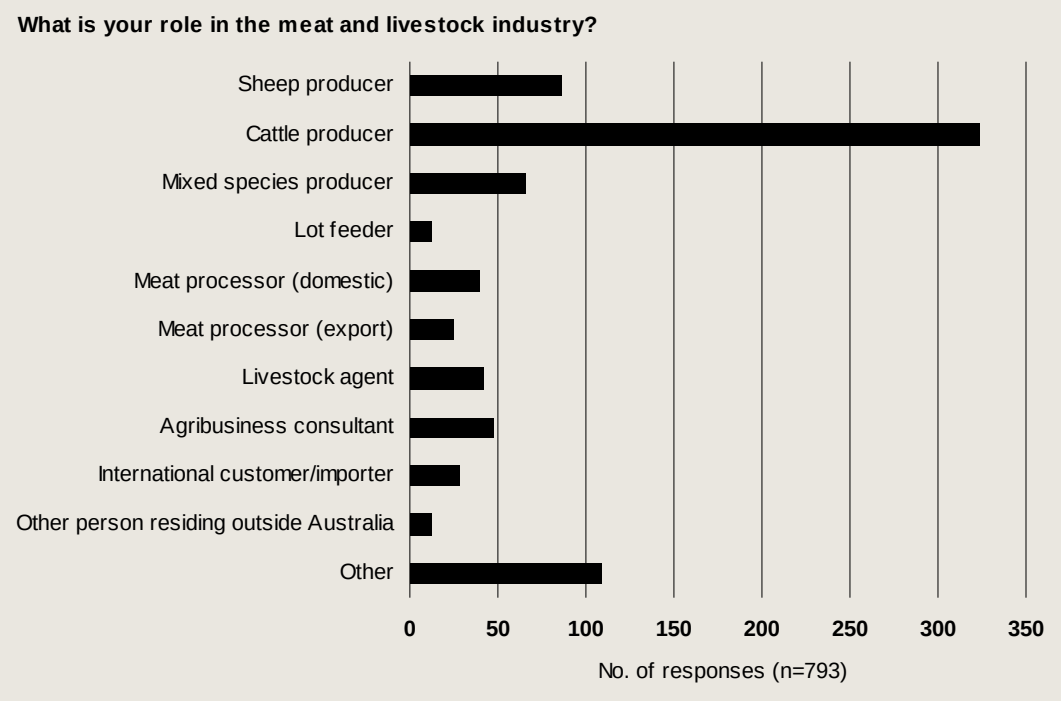
There were 730 respondents who completed all compulsory questions in the survey (793 respondents completed the first question but 63 respondents did not complete the survey).

The survey served two purposes:

- the results informed MLA about the usefulness of the current service and pinpointed the areas requiring review versus those that 'hit the mark'; and
- the survey was carried out to provide quantitative and qualitative input to The Centre for International Economics for its evaluation of the MLA Market Information program.

Results

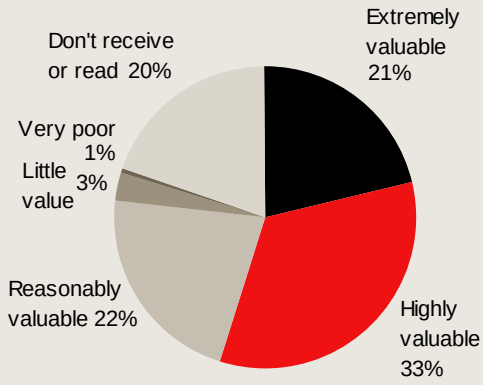
B.1 **Role of respondent in the industry**



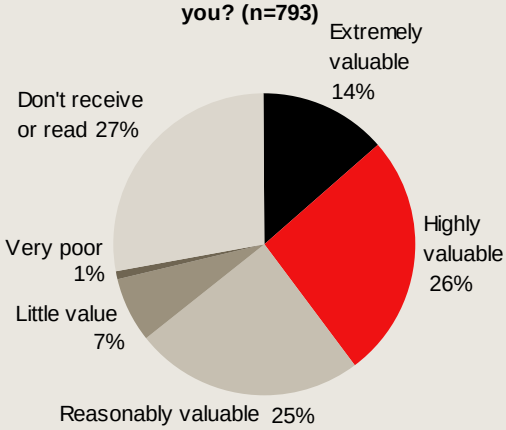
Data source: MLA online subscriber survey.

B.2 **Value of NLRS publications**

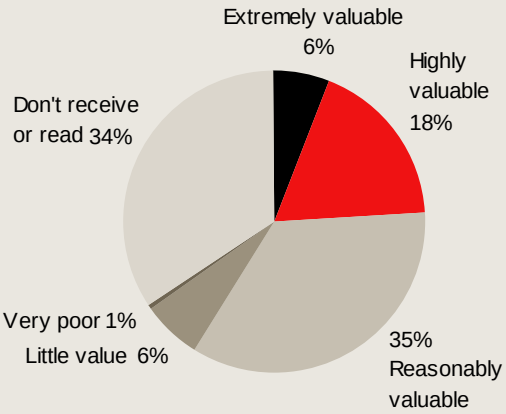
How valuable are NLRS saleyard reports to you? (n=793)



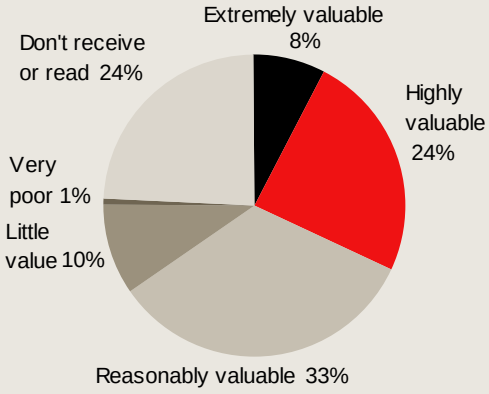
How valuable are NLRS over-the-hooks and slaughter reports to you? (n=793)



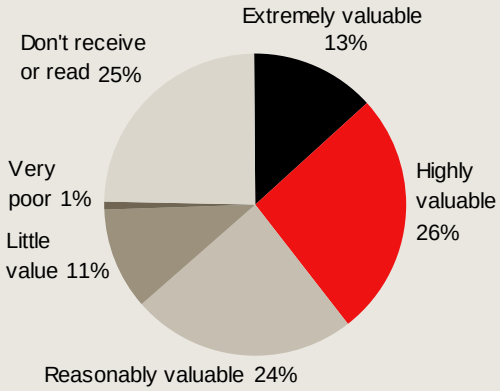
How valuable are other NLRS reports to you? (n=793)



How valuable are NLRS livestock statistics in rural newspapers to you? (n=793)

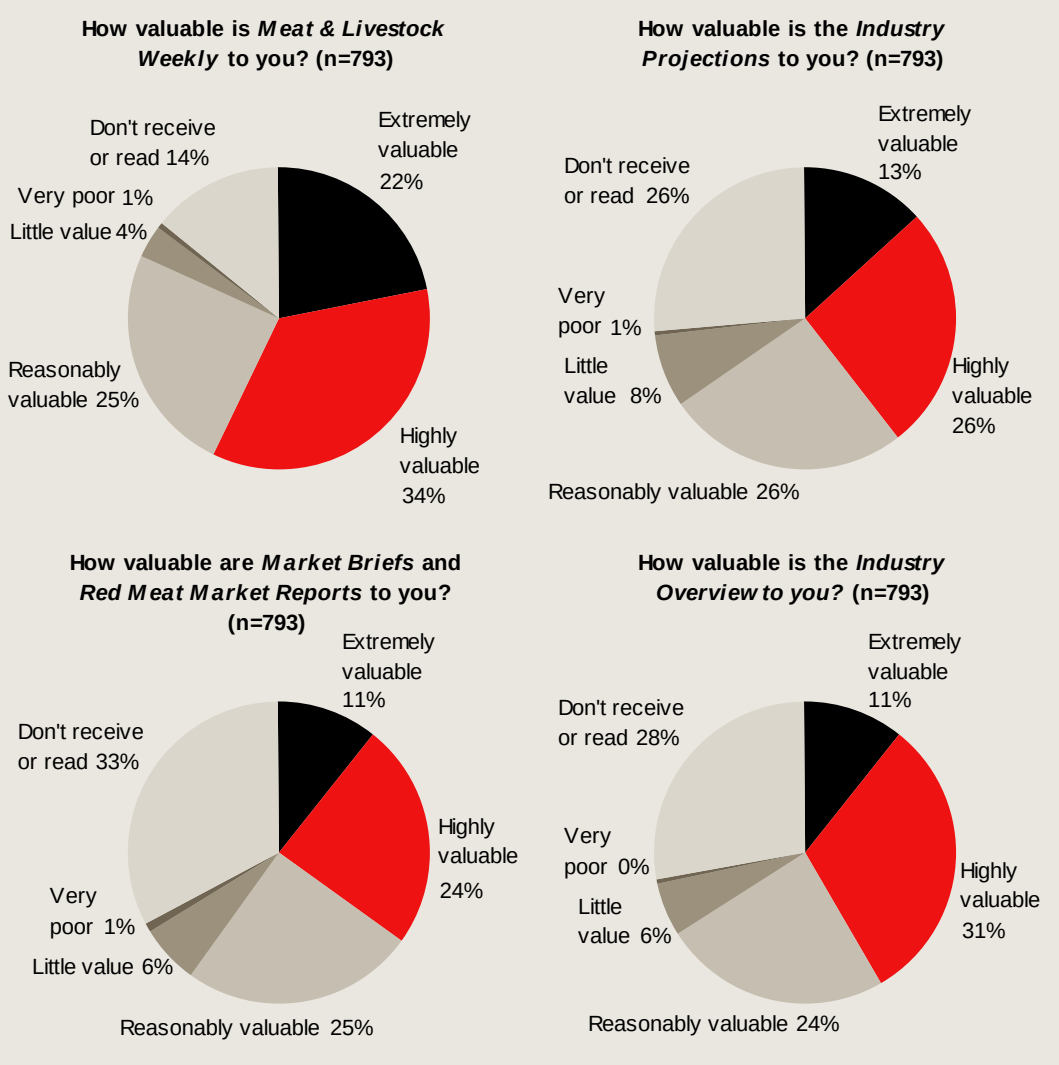


How valuable are NLRS market reports/statistics via radio and/or TV to you? (n=793)



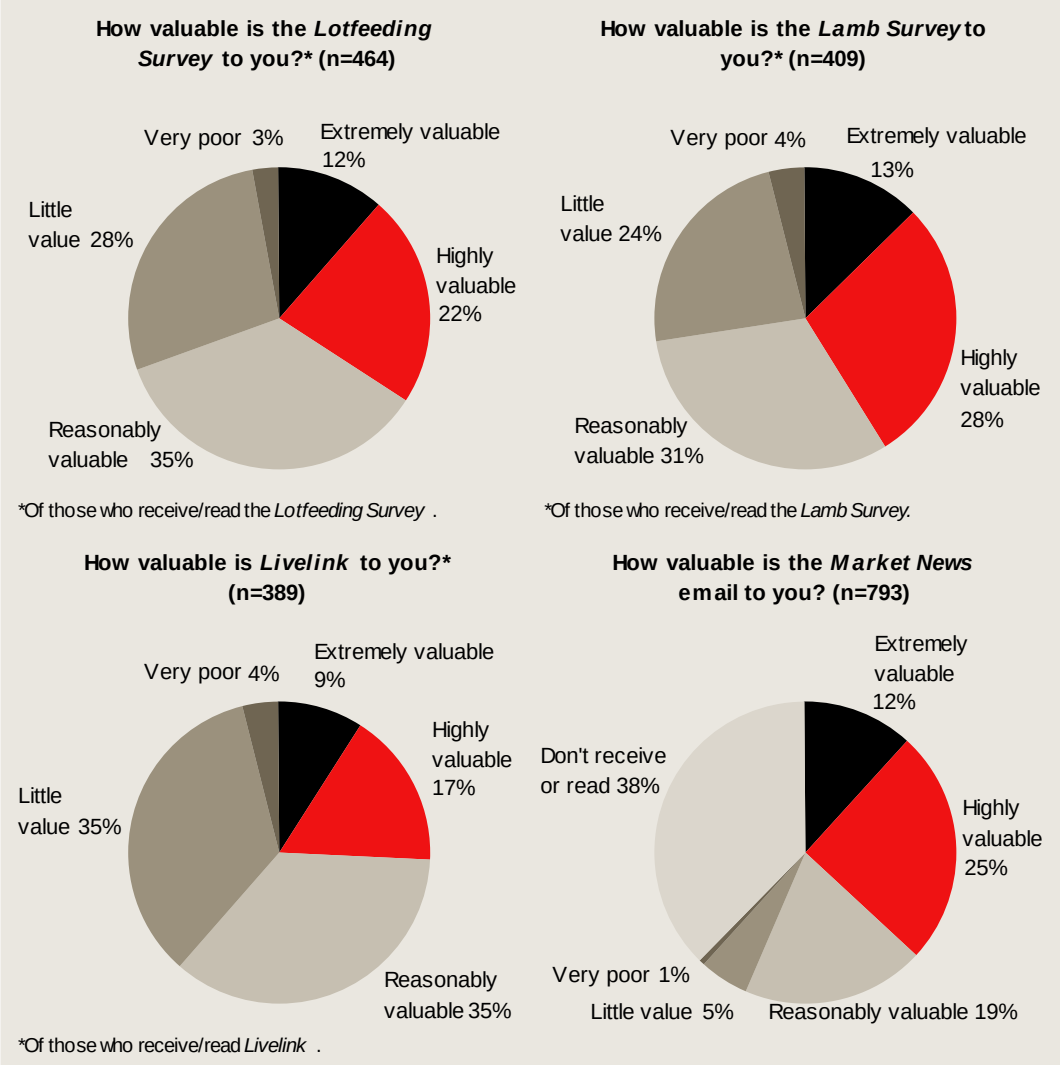
Data source: MLA online subscriber survey.

B.3 Value of market situation and outlook publications



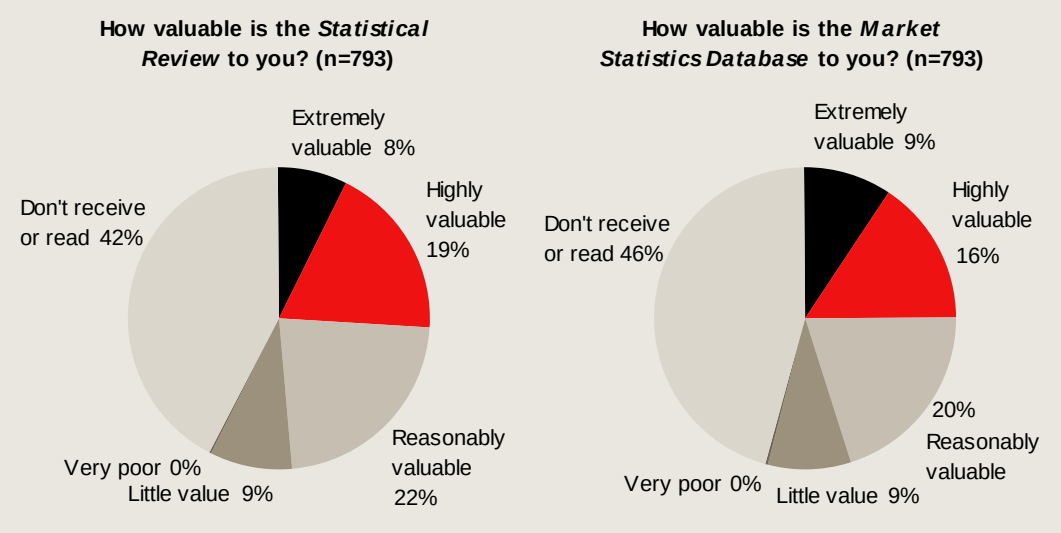
Data source: MLA online subscriber survey.

B.4 **Value of industry surveys conducted by the MIP**



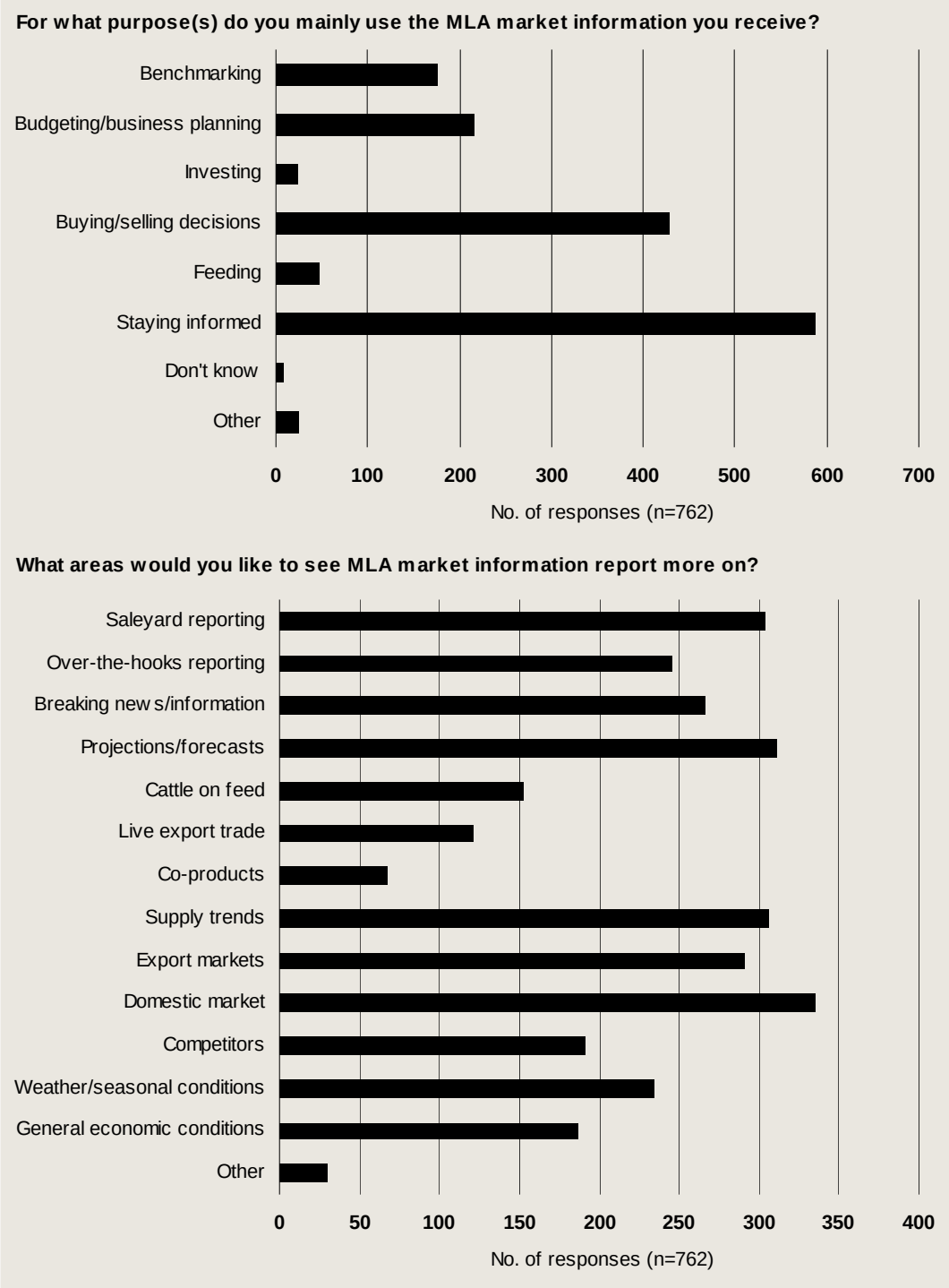
Data source: MLA online subscriber survey.

B.5 Value of statistics database



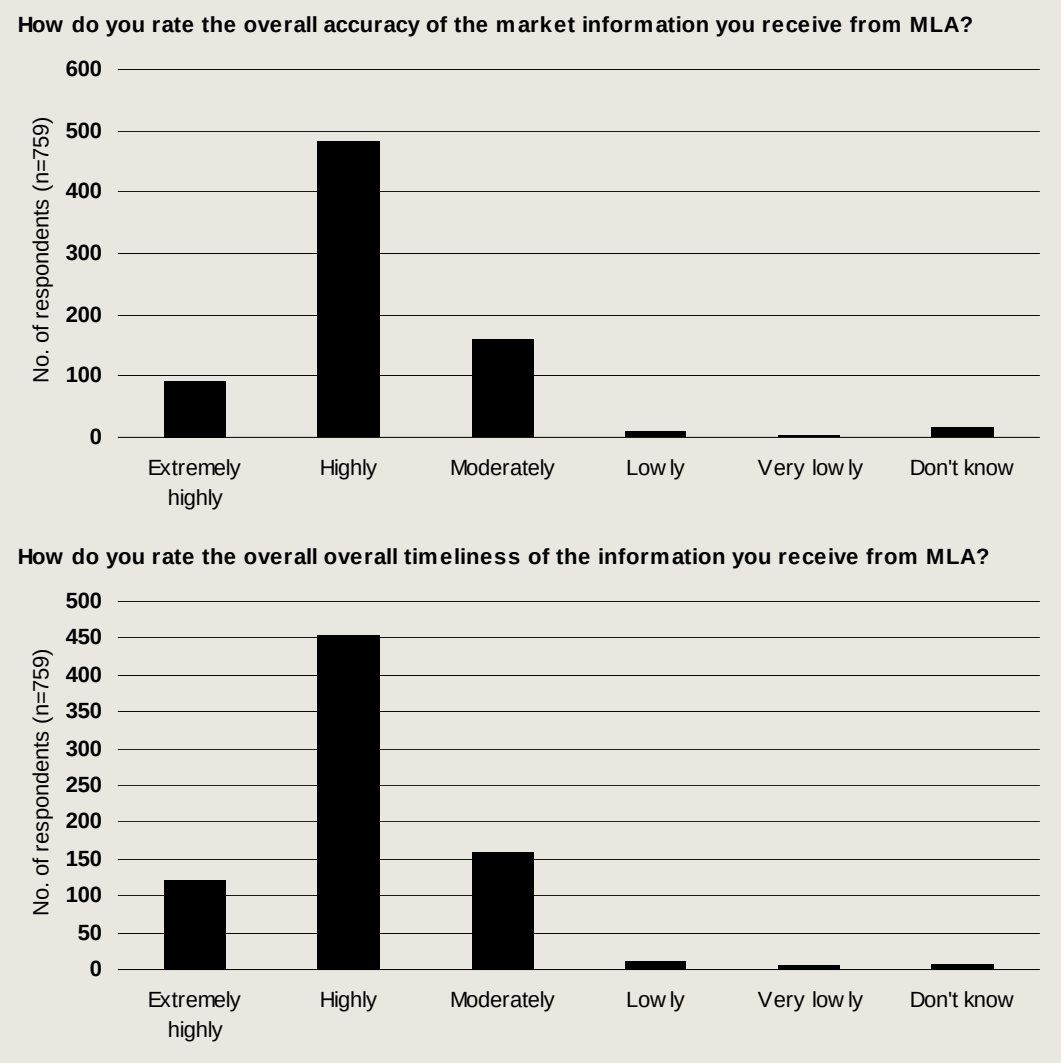
Data source: MLA online subscriber survey.

B.6 **Uses of MLA market information**



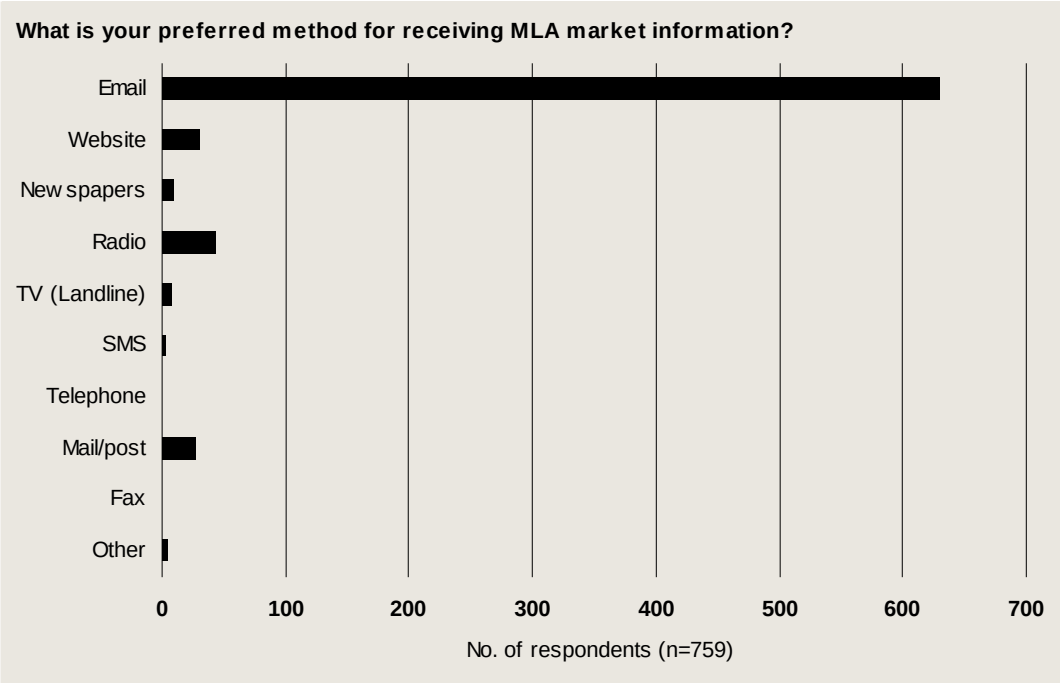
Data source: MLA online subscriber survey.

B.7 **Accuracy and timeliness of MLA market information**



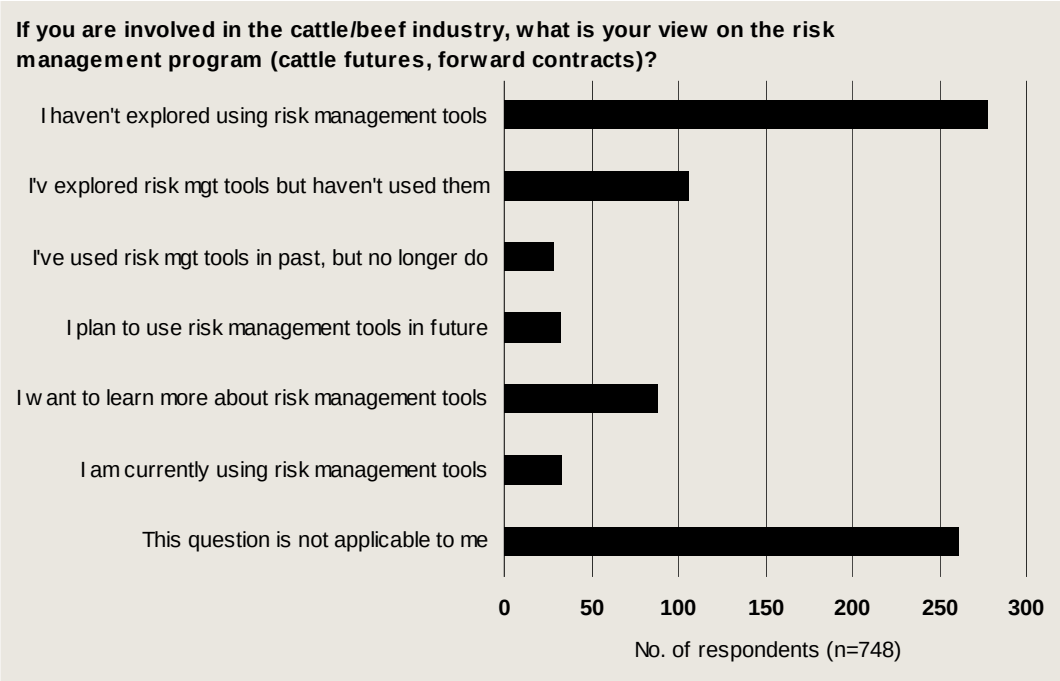
Data source: MLA online subscriber survey.

B.8 **Distribution channels of MLA market information**



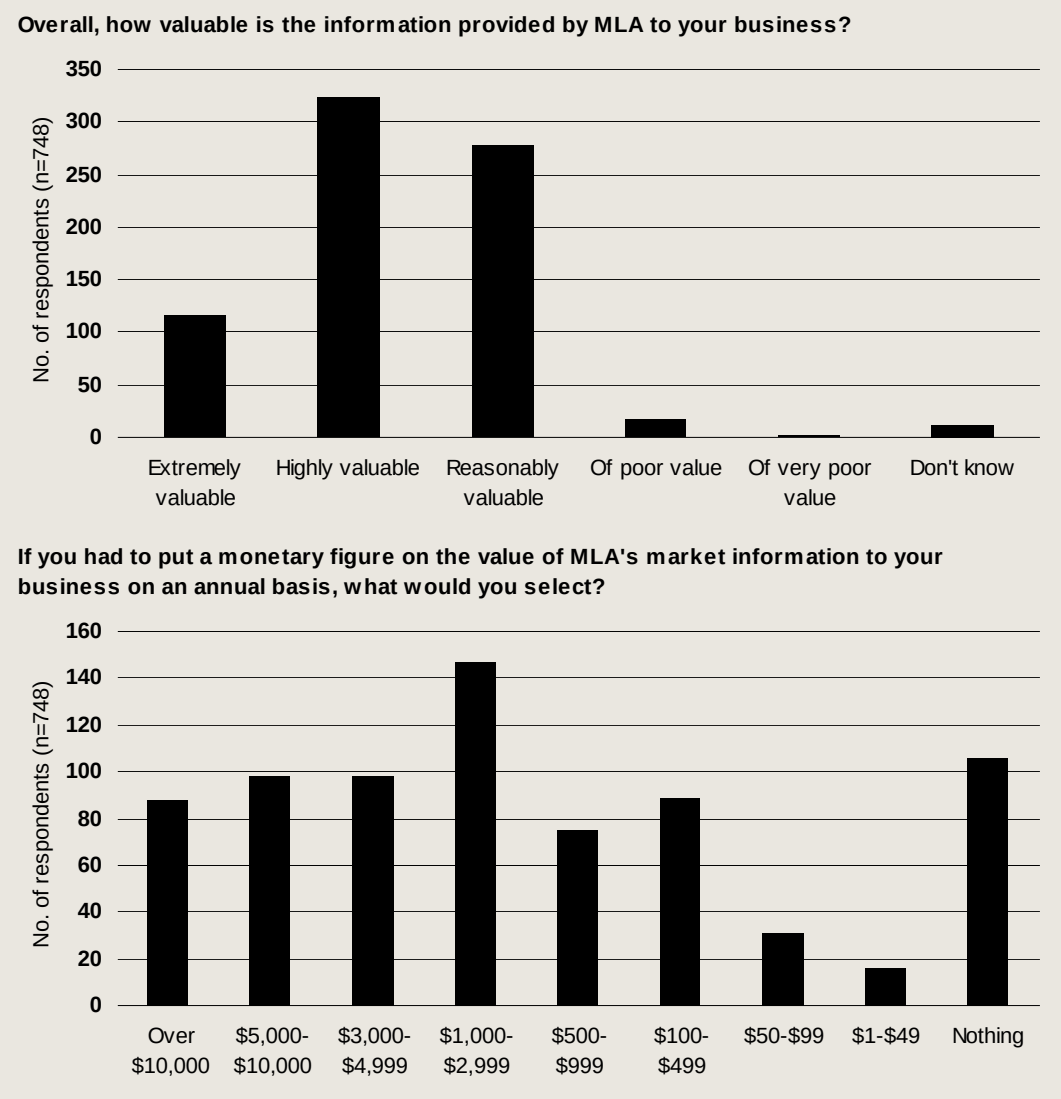
Data source: MLA online subscriber survey.

B.9 **Perceptions of MLA risk management program**



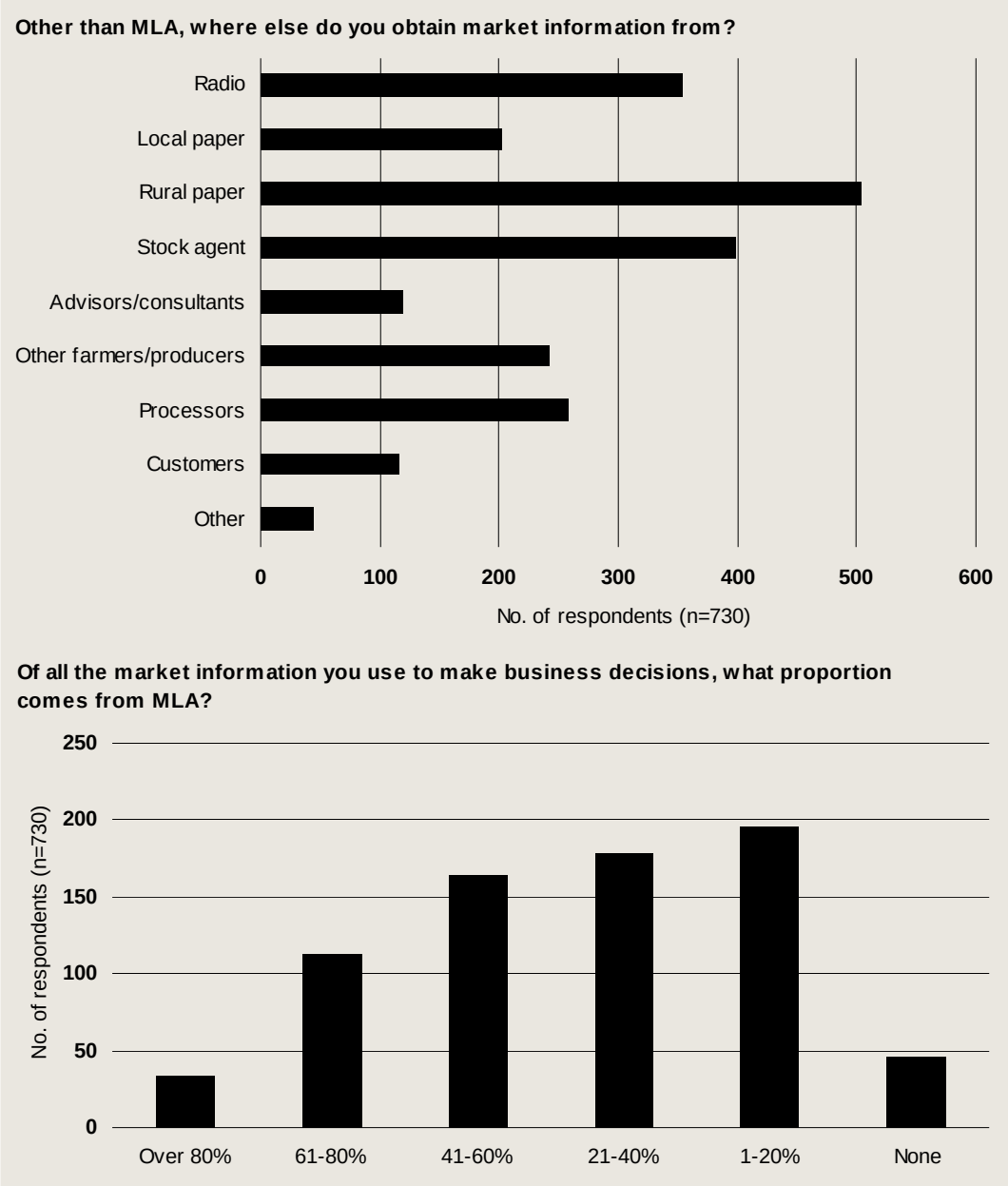
Data source: MLA online subscriber survey.

B.10 Value of MLA market information



Data source: MLA online subscriber survey.

B.11 Other sources of market information



Data source: MLA online subscriber survey.

B.12**Value of market reports/information you receive/read from MLA[a]**

	Sheep producers	*Cattle producers*	*Lotfeeder*	*Processor – mainly domestic market*	*Processor – mainly export markets*	*Livestock agent*	*Agribusiness*
	%	%	%	%	%	%	%
NLRS saleyard reports	77	68	50	65	81	93	42
NLRS over the hooks and slaughter reports	52	51	67	70	68	69	55
Other NLRS reports	21	38	27	33	44	36	36
NLRS stats in rural papers	32	49	36	29	47	33	41
NLRS reports via radio and TV	58	57	44	35	33	65	40
Meat and Livestock Weekly	50	63	60	78	91	68	81
Industry Projections	44	46	75	48	68	35	73
Lotfeeding Survey	12	24	67	38	56	35	68
Livelink	9	20	67	20	25	39	50
Market Briefs	42	43	67	59	74	44	78
Industry Overview	39	49	67	70	76	47	79
Lamb Survey	55	18	17	35	46	53	48
Market News email	55	55	67	63	59	63	72
Statistical Review	35	36	43	52	56	43	74
Market Statistics Database	41	33	38	46	75	46	71

a Of all persons that receive/read the publications, the percentage rating it extremely or highly valuable (highlighted = over 60 per cent).
Note: Some sample sizes are very small, especially lotfeeders and export processors.
Source: MLA online survey July 2009.

C Value of USDA market information

While there is a substantial body of work in the economic literature concerning the principles underlying the value of market information — there is surprisingly little in terms of studies that formally put values on particular information-based outputs to users in industry — especially for agriculture.

A number of recent studies from the United States that outline the benefits of publicly funded market information. Arguments in favour of public over privately funded cited include:

- the coverage of statistics would be limited under private supply because of the cost of supply of smaller or more difficult-to-obtain information:
  - for example, from surveys;
  - this level of provision may not be socially optimal.
- industry contacts may be less inclined to share information with another private firm — that is, government or the industry body is seen as the 'honest broker'; and
- finally, a private firm may face mixed incentives in the provision of information, especially in the current industry structure of highly concentrated firm sizes and strategic alliances.

Event-based analysis

Some empirical studies have been completed on the value of various USDA information products over the past decade. Econometric-based investigations were conducted on the impact of USDA Situation and Outlook Information. These analyses was based on event study analysis, with the 'events' consisting of the release of major USDA situation and outlook reports on prices for:

- cattle and hogs (Isengildina et al, 2005)
- corn and soybeans (Irwin et al, 2001).

In the case of the study on cattle and hogs USDA reports covered by the analysis included:

- cattle and cattle on feed
- cold storage
- hogs and pigs
- livestock, dairy and poultry outlook (LDPO)
- world agricultural supply and demand estimates.

The approach used modelled the volatility of hog and cattle prices. The effects of 'external' information were evaluated within this model using dummy variables in a variance equation.

The analysis showed a statistically significant impact of all reports, excluding the Cattle and Cold Storage reports on live/lean hog returns and all but LDPO reports on live cattle returns (Isengildina et al, 2005).

> The conditional standard deviation of lean hog futures was 118.6 per cent greater on the days following the release of Hogs and Pigs report, or about $0.75/cwt in absolute terms. The conditional standard deviations of live cattle futures returns was 44.8 per cent greater on the days following Hogs and Pigs or Cattle reports, or about $0.37/cwt in absolute terms.

The conclusion to this study is that because producers react favourably to the provision of USDA reports by changing supply decisions — that then lead to a reduction in price variability — then they must value the service highly.

Impact of a reduction in risk

The study by Isengildina et al (2005) did not, however, translate the reduction in variability of prices into the value of benefit to users of this information. In a separate, but related, analysis in an unpublished paper, McDowell and Kesecker (2006) demonstrated the value of a 1 and 5 per cent reduction in the variability of prices for the US dairy industry. To do this type of analysis the response of dairy farmers to the variation of dairy returns, relative to crop returns, was conducted using a model of portfolio investment theory for a competitive firm under output price uncertainty. The model used was the AMS–Dairy Programs Baseline Econometric Model.

The findings from this can be summarised thus:

- it was impossible to separate-out the effects of only Market News on risk and uncertainty from other USDA information;
- from the econometric model, cow numbers were estimated to increase by 0.069 per cent for every 1 per cent reduction in dairy return variability relative to crop return variability;
- simulations of risk reductions of 1 and 5 per cent, represented by increases on all-milk prices, increased the average value of milk marketing's by US $147.7 and US $727.8 million; and
- if Dairy Market News results in a 1 per cent reduction is risk — the benefits exceed the costs by 184 times.

References

Australian Competition and Consumer Commission 2007, *Examination of the Prices Paid to Farmers for Livestock and the Prices Paid by Australian Consumers for Red Meat*, report to the Minister for Agriculture Fisheries and Forestry.

Centre for International Economics (2000), *Evaluation of benefits from MLA programs*, Prepared for Meat and Livestock Australia, November

Gregor S 2001, *National Livestock Reporting Service Study: Current Position and Future Options Green Paper*, October.

Irwin S, Good D and Gomez J 2001, *The Value of USDA Outlook Information: An Investigation Using Event Study Analysis*, paper presented at the NCR-134 Conference on Applied Commodity Price Analysis, Forecasting and Market Risk Management, St. Louis, Missouri, 23–24 April.

Holmes Sackett and Associates, 2003, *Economic and Situational Analysis of the Australian Sheep Industry*, 27 June 2003.

Isengildina O, Irwin S and Good D 2005, *The Value of USDA Situation and Outlook Information in Hog and Cattle Markets*, paper presented at the NCR-134 Conference on Applied Commodity Price Analysis, Forecasting and Market Risk Management, St. Louis, Missouri, 18–19 April.

Lee KH and Hatcher CB 2001, 'Willingness to pay for information: an analyst's guide,' *The Journal of Consumer Affairs*, Summer 2001, vol. 35, no. 1, pp. 120–40.

Macauley MK 2005, *The Value of Information: A Background Paper on Measuring the Contribution of Space-Derived Earth Science Data to National Resource Management,* Resources for the Future Discussion Paper 05–06, May.

McDowell H and Kesecker K 2006, The value of market news (draft), 7 April.

Nilsen K 2007, *Economic Theory as it Applies to Statistics Canada: A Review of the Literature,* submitted to Statistics Canada 7 May, Contract 72100-06-0049.

Spencer S 2004, Price Determination in the Australian Food Industry: A Report, Australian Government Department of Agriculture, fisheries and Forestry, Canberra.

US EPA (Environmental Protection Agency) 2000, *Guidelines for Preparing Economic Analyses,* EPA 240-R-00-003, September.

US Federal Highway Authority 1998, 'How decision makers value information,' *Value of Information and Information Services,* http://www.fhwa.dot.gov/reports/viiscov.htm, Accessed 11 May 2009.