

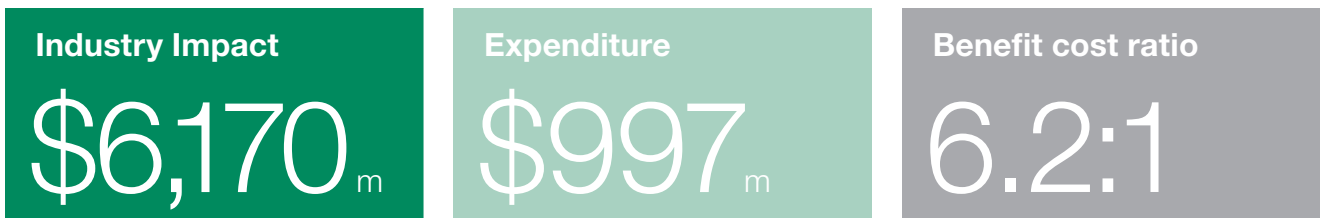
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Executive summary

The Impact Assessment concluded that MLA's \$997 million expenditure on research, development and marketing programs from 2010-11 to 2014-15 provides current and future industry returns of \$6,170 million. This equates to a benefit cost ratio of 6.2:1, or \$6.20 return for every dollar invested.



Impact by time period

Figure 1 indicates the impacts that were realised between 2010-11 and 2014-15 from MLA's expenditure over the same five year period. It also indicates the future impacts that are to be captured as a result of the expenditure during the five year period. Impacts during the review period accounted for 41% of the total impacts, while 59% of impacts will be realised beyond July 2015.

Impact by sector

The Impact Assessment concluded that all red meat sectors gained positive returns: grassfed cattle producers yield a benefit cost ratio of 8.8:1, sheep producers 4.3:1, lotfeeders 4.1:1, goat producers 6.7:1, live exporters 7.8:1 and processors 3.0:1.

The benefits to consumers are valued at \$616 million. Government investment in research and development commissioned by MLA, as well as contributing to these consumer benefits, also provides community benefits in many other areas including environmental and animal welfare improvements. These benefits help to safeguard the community against an exotic animal disease incident and develop a more resilient and thriving red meat industry.

Upside and downside impacts

The assessment measured the impacts that addressed both the downside threats as well as the upside opportunities. Activities which served to mitigate threats accounted for 40% of the impact (\$2,444 million) and those that proactively captured opportunities accounted for 60% of the impact (\$3,725 million).

Figure 1:
Current and future impacts of MLA's expenditure (\$ million)

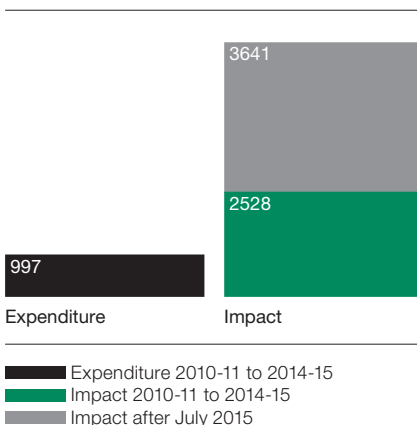





Table 1: Impact of MLA's programs on beef, sheep and goat supply chains

SPECIES	MEASURE	IMPACT
	Net income 2011-15	An additional \$40.00/head
	Net income 2016 to 2030	An additional \$3.78/head/year over next 15 years
	Farm gate prices 2011-15	An additional 7¢ in the dollar
	Farm gate prices 2016 to 2030	An additional 10¢ in the dollar over the next 15 years
	Net income 2011-15	An additional \$3.92/head
	Net income 2016 to 2030	An additional 38¢/head/year over next 15 years
	Farm gate prices 2011-15	An additional 6¢ in the dollar
	Farm gate prices 2016 to 2030	An additional 6¢ in the dollar over the next 15 years
	Net income 2011-15	An additional 63¢/head
	Net income 2016 to 2030	An additional 10¢/head/year over next 15 years
	Farm gate prices 2011-15	An additional 4¢ in the dollar
	Farm gate prices 2016 to 2030	An additional 8¢ in the dollar over the next 15 years

Impact by animal

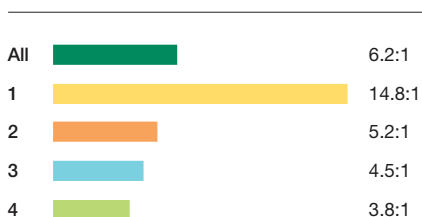
The table above indicates the impacts of MLA's programs to the beef, sheep and goat supply chains¹.






Impact by MLA program

The Impact Assessment found that each of MLA's four strategic imperatives yield a positive return on the investment made by MLA's investors, primarily red meat producers who pay levies and the Australian Government which matches the research and development component of that levy. Commercial companies also co-invest in some activities.

The benefit cost ratio across MLA's four strategic imperatives ranged from \$14.80 for every dollar invested (a benefit cost ratio of 14.8:1) in 'Maintaining and improving market access' activities to \$3.80 for every dollar invested (a benefit cost ratio of 3.8:1) in 'Supporting industry integrity and sustainability' programs.

Figure 2:
Benefit cost ratio of
MLA's strategic imperatives



 All MLA programs
 1 Maintaining and improving market access
 2 Growing demand
 3 Increasing productivity
 4 Industry integrity and sustainability

Four high performing programs within MLA's strategic imperatives contributed to 46% of total industry returns from 20% of MLA expenditure:

- Market access:** This program produces current and future benefits of \$999 million and a benefit cost ratio of 24.0:1. A combination of factors, including the completion of free trade agreements with three of Australia's four largest red meat export markets, resulted in an unparalleled level of activity and success over the five years.
- Livestock exports:** This program delivers current and future benefits of \$705 million and a benefit cost ratio of 14.5:1. The program helped support supply chains to meet the requirements of the new Exporter Supply Chain Assurance System (ESCAS), speeding up the reopening of the trade following its suspension in 2011 and avoiding trade closure in other cases.
- Eating quality:** This program yields current and future benefits of \$679 million and a benefit cost ratio of 12.5:1. More than one third of adult cattle slaughtered in 2015 were presented for MSA grading, up from 17% in 2009-10. Grassfed cattle premiums more than doubled over this time to average 33¢/kg. The number of eligible lambs presented for grading grew rapidly from 883,000 in 2010-11 to more than 6.8 million in 2014-15.
- Product integrity:** This program produces current and future benefits of \$462 million and a benefit cost ratio of 8.3:1. The program has helped safeguard the industry against the impact of the possible incursion of exotic diseases and has contributed to enhancing the clean, safe and natural image of Australian red meat.

Although the majority of MLA programs generated healthy industry returns and all programs generated positive returns on investment, five programs recorded benefit cost ratios below 3:1. Two of these contributed to 7% of total industry returns using 23% of MLA expenditure:

- Domestic beef marketing:** This program produced current and future benefits of \$108 million and a benefit cost ratio of 1.1:1. Over the five year period of the Impact Assessment, the domestic beef market experienced a difficult and enduring combination of factors that lead to positive, but low returns. These returns prompted MLA to review and then overhaul its marketing approach and this was implemented in the latter part of the review period. Those factors included strong export demand, increased competition from other proteins and intensified supermarket competition, which together reduced domestic beef sales and consumption.
- On-farm productivity:** This program produced current and future benefits of \$349 million and a benefit cost ratio of 2.7:1, with most of those benefits yielding beyond July 2015. Prolonged drought over many beef production regions over much of the assessment period has significantly impacted productivity. The adoption of new research and development remains an urgent priority, particularly in the northern industry.

¹ Calculated by dividing the present value of net income by the total number of livestock exits from the Australian system (slaughter plus live exports) over the period 2010-11 to 2014-15.



Maintaining and improving market access

Programs

1.1	Product integrity program	07
1.2	Market access program	08
1.3	Live exports program	09



HIGHLIGHTS

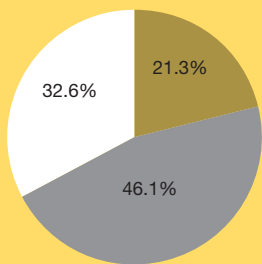
The **'Maintaining and improving market access'** strategic imperative provides total current and future industry returns of \$2,165 million from expenditure of \$146 million, producing a benefit cost ratio of 14.8:1.

Of the three programs, '1.2 Market access' delivers the greatest benefits (\$999 million) and the highest benefit cost ratio (24.0:1).

Impacts during the five year review period accounted for 26% of the total impacts.

Of the total impacts 74% will be realised beyond July 2015.

Figure 3: Benefits of the **'Maintaining and improving market access'** strategic imperative in terms of red meat net income (%)

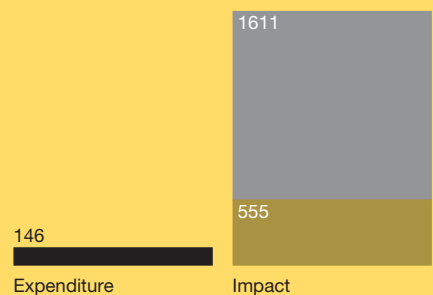


1.1 Product integrity program
 1.2 Market access program
 1.3 Live exports program

Figure 4: Benefit cost ratio of the **'Maintaining and improving market access'** strategic imperative and its programs



Figure 5: Current and future impacts of MLA's expenditure (\$ million)



Expenditure 2010-11 to 2014-15
 Impact 2010-11 to 2014-15
 Impact after July 2015

Product integrity program

This program serves to safeguard the industry against the possible incursion of exotic diseases. It contributes to maintaining the clean, safe, natural image of Australian red meat which underpins marketing activities in global markets.

The program covers activities relating to **livestock traceability, on-farm food safety systems and food safety scientific research.**



HEADLINE MESSAGES

The current and future benefit of Australia's livestock traceability systems and disease-free status is valued at \$355 million, reflecting the importance of these systems to our largest trading partners (US, Japan, and Korea). The benefit of our integrity systems to our clean, safe and natural image is valued at an additional \$107 million.

MLA's investment in traceability systems has contributed to reducing the expected annual cost of a major disease outbreak. For example, the cost associated with a foot and mouth disease or BSE outbreak is estimated to reduce by \$29.2 million/year to 2030.

The contribution of Australia's integrity systems in supporting price premiums of 40% in developing markets was based on conservative assumptions and may even in fact underestimate the benefits.



OPERATING ENVIRONMENT

For decades Australia has enjoyed access to a host of international meat markets due to its disease-free status and world class food safety and integrity systems, the National Livestock Identification System (NLIS) (traceability) and Livestock Production Assurance (LPA) (on-farm food safety). MLA has invested in enhancing these systems to protect this access and maintain Australia's reputation as a supplier of safe and traceable product – which also serves to differentiate the Australian red meat industry from its competitors.



KEY OUTPUTS AND OUTCOMES

- MLA meat safety research has continued to supply world-leading knowledge to the Australian industry. This allows it to better understand hazards, manage and mitigate risks, advocate for regulatory reform and respond to customer requirements. Areas of research have included E.coli strains, Salmonella and antimicrobial resistance.
- The usability of the NLIS database was enhanced over the assessment period, shortening the time to generate complex tracing reports from hours to minutes.
- A communications campaign reminding producers about their obligations under Livestock Production Assurance (LPA) increased the number of LPA-accredited producers by 14% (from 187,000 to 213,000 producers). Nearly 25% stated they had changed on-farm practices to meet LPA requirements.
- The launch of the MLA's eDEC tool promoted uptake and usage of electronic National Vendor Declarations (NVDs), resulting in the number of users increasing from 2,780 in July 2010 to 32,000 users by June 2015.

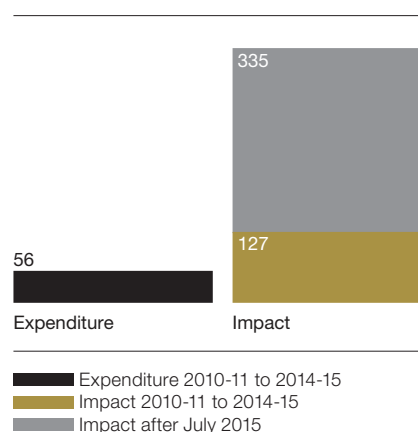


INDUSTRY TESTIMONIAL

The global demand for clean and safe beef continues to grow, with Australia's integrity systems providing an assurance of quality to our customers. MLA's investment in food safety and integrity systems have been integral to industry profitability and growth.

Howard Smith, President, Cattle Council of Australia

Figure 6: Current and future impacts of MLA's expenditure (\$ million)



Market access program

This program works in partnership with industry and the Australian Government to maintain and liberalise world markets for Australian red meat products. It also seeks to position Australia as the supplier of choice for red meat in the minds of overseas customers and regulators by emphasising Australia's integrity and safety systems and performance record. (The livestock export component of market access is included in Program 1.3.)

The program covers activities relating to **improving market access, defending existing market access, communicating product integrity and issues management.**



HEADLINE MESSAGES

The benefits arising from improvements in market access have been unprecedented with the signing of five free trade agreements in the last five years, as well as other access improvements. Across each of the free trade agreements, between 20-40% of the total benefits realised are attributed to the contribution made by MLA.

Consumer perceptions of the safety of Australian beef exceeded those from other imported suppliers in all markets, while the safety of Australian lamb was generally rated on par with New Zealand.

Impacts during the five year review period accounted for 5% of the total benefits, with 95% being captured beyond July 2015 as the trade opportunities from the new trade agreements are fully realised.



OPERATING ENVIRONMENT

The Australian red meat industry is highly dependent on export markets. If global access was ever denied, Australia's relatively small domestic market would be unable to consume the available red meat produced here. The export market underpins domestic livestock prices and is a significant contributor to the national economy as well as the local economies and social fabric of regional Australia. Maintaining and liberalising world meat markets creates more outlets for exporters to market Australian red meat, more opportunities for higher returns and a more resilient industry in the event of a market's downturn.



KEY OUTPUTS AND OUTCOMES

- Significant market access breakthroughs have been achieved with the signing of free trade agreements with Korea, China and Japan. Tariffs on major Australian red meat products in Korea and China will be eliminated entirely over time.

- Breakthroughs were achieved with Malaysia, the EU, India, Russia and Trans-Pacific and ASEAN countries.
- There were instances when action was required to defend existing market access conditions in China, Russia and Indonesia. The overall benefit of these activities was deemed small relative to the gains achieved by the rest of the program, particularly the scale of the free trade agreement benefits.
- MLA produced an economic study on the cost of technical trade barriers to the Australian red meat and livestock industry, enabling industry to strategically prioritise the barriers with the greatest impact and then start to address them.
- In Japan and Korea, perceptions of the integrity and safety of Australian red meat rose over the assessment period. In all markets, consumer perceptions of the safety of Australian beef exceeded those from other imported sources, while the safety of Australian lamb was generally rated on par with New Zealand.

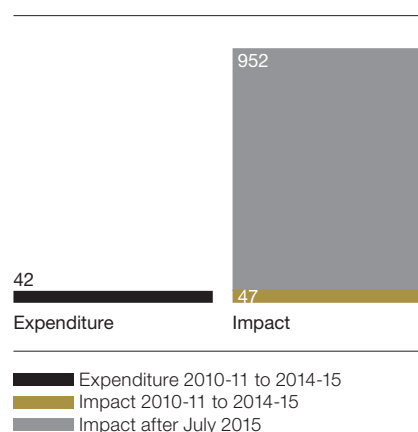


INDUSTRY TESTIMONIAL

MLA's issues management capability in the global meat market is significant. Its facilitation role between industry and government in the Korea-Australia FTA negotiations ensured stakeholders were well informed.

Jason Strong, Managing Director, Australian Agricultural Company Limited (AACo)

Figure 7: Current and future impacts of MLA's expenditure (\$ million)



Live exports program

This program is a partnership between MLA and LiveCorp. It assists Australian livestock exporters and supply chains to meet regulatory requirements, improve animal welfare outcomes and address market access issues.

The program covers activities relating to **animal welfare, research and development and market access.**



HEADLINE MESSAGES

The Live Export Program provided significant assistance to industry to enable it to meet the Exporter Supply Chain Assurance System (ESCAS) requirements, speeding up the reopening of trade to Indonesia and avoiding trade closure in other markets. This impact was most marked in Indonesia (a benefit valued at \$423 million), followed by sheep to the Middle East (\$82 million), goats to Malaysia (\$69 million) and cattle to Vietnam (\$53 million).

MLA research and development contributed to reducing shipboard mortalities of sheep by 40% on already low mortality levels.

General improvements in market access and lower regulatory costs have provided other industry benefits valued at \$60 million.



OPERATING ENVIRONMENT

The Australian Government suspended livestock export to Indonesia in 2011, early in the assessment period, following media reports of animal welfare infringements. The suspension was lifted a month later with the phasing in of ESCAS across Australia's livestock export markets. The key focus of the Live Export Program has been to assist Australian live export supply chains to comply with ESCAS.



KEY OUTPUTS AND OUTCOMES

- The Live Export Program has trained more than 8,600 people in Asia and the Middle East to meet ESCAS regulations. The use of stunning in Indonesia has dramatically increased from 2.8% in 2010 to 93.6% in 2015.
- A salmonella vaccine for sheep, delivered orally in water, was developed and is now being commercialised. Salmonellosis/inanition is the most common cause of sheep mortalities on a live export vessel and this product has potential to further reduce mortalities from less than 1% to less than 0.5%.

- Measures were implemented to reduce the cost of ESCAS compliance without impacting animal welfare outcomes. This included streamlining paperwork and removing duplication in audits.
- Potentially arduous and costly live export protocols were streamlined following advocacy by the Live Export Program. For example, a key market's protocol and testing requirements for productive heifers was refined and the quarantine time halved. The changes removed costs of \$130-150/head.
- The negotiation of a feeder cattle protocol with a livestock export market resulted in savings of \$120/head compared to the provisions originally proposed.
- The renegotiation of an export protocol with Bahrain and subsequent reopening of the market saw shipments of sheep commence in April 2014. After no shipments in 2013, more than 280,000 head were shipped in 2014

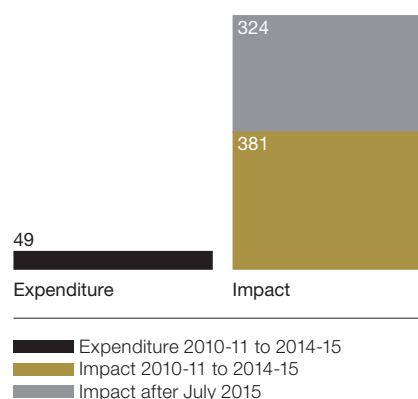


INDUSTRY TESTIMONIAL

The co-investment by MLA in animal handling and slaughter training in Australia's live export markets has had a profound, positive and generational influence on animal welfare practices.

Alison Penfold, Chief Executive Officer, Australian Livestock Exporters' Council

Figure 8: Current and future impacts of MLA's expenditure (\$ million)





Strategic imperative

2

Growing demand

Programs

2.1	Eating quality program	11
2.3	New products program	12
2.4 & 2.2	Beef domestic marketing and nutrition programs	13
2.5 & 2.2	Lamb domestic marketing and nutrition programs	14
2.6	Beef export marketing program	15
2.7	Sheepmeat export marketing program	16

Industry Impact

\$2,155_m

Expenditure

\$418_m

Benefit cost ratio

5.2:1

HIGHLIGHTS

The 'Growing demand' strategic imperative provides total current and future industry returns of \$2,155 million from expenditure of \$418 million, producing a benefit cost ratio of 5.2:1

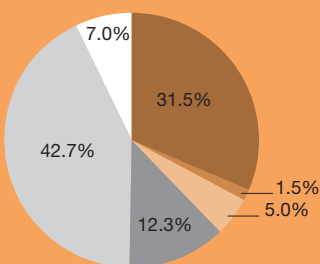
Of the seven programs, 'Beef export marketing' delivers 43% of the benefits.

'Eating quality' produces the largest benefit cost ratio of 12.5:1.

Impacts during the five year review period accounted for 65% of the total impacts.

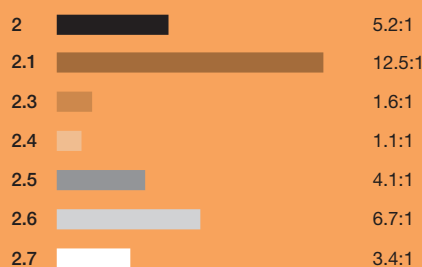
Of the total impacts 35% will be realised beyond July 2015.

Figure 9: Benefits of the 'Growing demand' strategic imperative in terms of red meat net income (%)



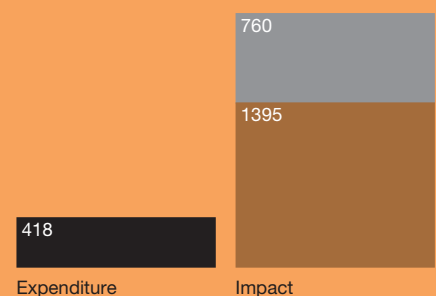
2.1 Eating quality program
2.3 New products program
2.4 & 2.2 Beef domestic marketing and nutrition programs

Figure 10: Benefit cost ratio of the 'Growing demand' strategic imperative and its programs



2.5 & 2.2 Lamb domestic marketing and nutrition programs
2.6 Beef export marketing program
2.7 Sheepmeat export marketing program

Figure 11: Current and future impacts of MLA's expenditure (\$ million)



Expenditure 2010-11 to 2014-15
Impact 2010-11 to 2014-15
Impact after July 2015

Eating quality program

This program serves consumers by guaranteeing their beef and lamb purchases have a consistent eating quality. This requires working across the entire supply chain – from producers to processors, wholesalers, retailers and foodservice.

The program covers activities relating to **Meat Standards Australia** beef and sheepmeat.

Industry Impact \$679_m	Expenditure \$54_m	Benefit cost ratio 12.5:1
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HEADLINE MESSAGES

MSA is one of MLA's biggest success stories with more than one third of adult cattle slaughtered being presented for MSA grading in 2014-15, up from 17% in 2009-10. Grassfed cattle premiums have more than doubled over this time to average 33¢/kg hot standard carcase weight.

Without MLA's investment in eating quality over the assessment period, cattle grading numbers would have been lower (546,000 head instead of the 3.2 million head presented for grading in 2014-15) and premiums paid would be 20.8¢/kg lower.

Without MLA's investment over the assessment period there would have been no lambs graded (6.8 million head were actually graded) and 'trademarked' lambs would lose a \$1/head premium.



OPERATING ENVIRONMENT

MSA was developed in response to the variable eating quality of Australian beef.

Following the widespread uptake of MSA science by red meat suppliers and the increased availability of product following MSA pathways, those suppliers are now better able to meet consumer expectations for consistent eating quality.

With domestic red meat consumption under continuing pressure from competitor proteins, maintaining and improving consumer satisfaction with the eating quality of Australian red meat is critical.



KEY OUTPUTS AND OUTCOMES

- MSA cattle grading numbers increased from 17% of cattle slaughter (1.3 million head) in 2009-10 to 34% (3.2 million head) in 2014-15.
- Over the same period, cattle price premiums more than doubled, from 15¢/kg to 33¢/kg, with producers now receiving an additional \$91/head.
- MSA lamb grading numbers grew strongly from 900,000 head to 6.8 million head.
- More than 14,000 producers, feedlots, processors and end users have participated in MSA training programs.
- Surveys reveal consumers have been increasingly satisfied with the eating quality of beef, with 30% satisfied in 2010-11 it had improved in the previous three years compared with 36% in 2014-15.

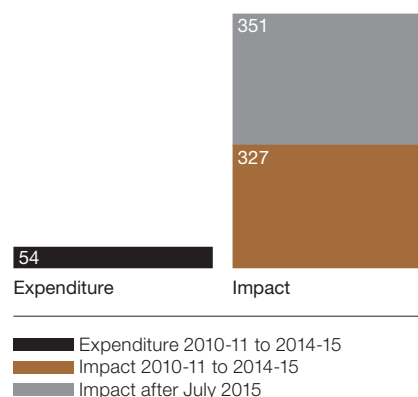


INDUSTRY TESTIMONIAL

The work MLA is doing to develop better ways of objectively measuring eating quality traits and furthering the development of MSA for lamb is essential to ensure lamb remains a competitive and desired protein source internationally and our producers remain profitable.

Kate Joseph, prime lamb producer, Tyrendarra Vic

Figure 12: Current and future impacts of MLA's expenditure (\$ million)



New products program

This program aims to grow demand and increase the value of the carcass by identifying, developing and commercialising innovative new red meat products. Most activity in this program is funded through the MLA Donor Company (MDC) (which leverages commercial funds with Australian Government dollars and doesn't use producer levies), although levy funded research has informed some activities.

The program covers **bioactives and co-products, product innovation, market and consumer insights and new products**. Within this program four innovations were assessed with 'Very Fast Chilling', 'SmartShape' and 'pulled beef' providing most of the returns.



HEADLINE MESSAGES

Very Fast Chilling, a technique to produce high value meat, captured the majority of benefits within this program, valued at \$17.5 million. Sausages produced using this technique provided a retailer with a \$2.33/kg premium and a supplier of raw lean product with a 25¢/kg premium.

The benefits of SmartShape, a technology which re-shapes primal cuts, were valued at \$6.7 million.

Of 207 projects completed under the program, seven were commercialised over the five year assessment period.



OPERATING ENVIRONMENT

While this program has initiated a high number of new products and technologies, that large volume is one factor that affected their conversion into commercial products.

A critical success factor in the commercialisation of new products and technologies is that a commercial partner co-invests with the MDC from the outset.



KEY OUTPUTS AND OUTCOMES

- Very Fast Chilling is a novel technique to produce high value meat using rapid chilling and salting of pre-rigor beef to prevent pH decline and improve shelf life without the need for preservatives. The period of exclusivity under the MDC agreement has now lapsed, providing an opportunity for other businesses to pick up the innovation.
- SmartShape technology re-shapes a primal into a desired portion size. It provides more consistent eating quality for beef, especially for ready-to-eat meals which need rapid reheating. There are three SmartShape units operating across Australia, using five tonnes of beef per week.
- Pulled beef was produced using a spiral cooker which reduced cooking time to just one hour. The technology was developed with a major quick service restaurant operator.

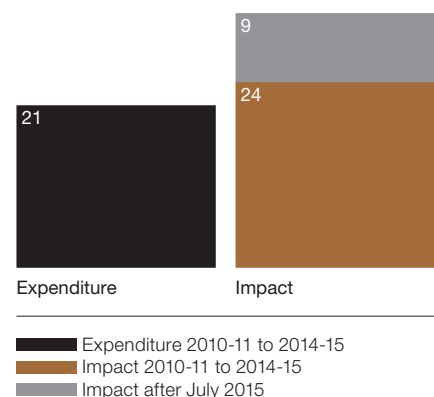


INDUSTRY TESTIMONIAL

The support and involvement of MLA in the [product development] project reinforced the necessary confidence of Woolworths to commit to supporting the product. Access to this retail channel greatly increased the likelihood of successful sales outcomes.

Mr David Beak, Proprietor Beak and Johnston Pty Ltd

Figure 13:
Current and future impacts of MLA's expenditure (\$ million)



Beef domestic marketing and nutrition programs

These programs aim to defend beef demand in Australia through compelling marketing campaigns, partnering with retailers and foodservice operators and increasing the confidence of consumers preparing beef. Nutrition remains an important driver of meal choice for Australians with messages also communicated about the nutritional benefits of red meat.

The program covers activities relating to **domestic beef marketing and nutrition**.



HEADLINE MESSAGES

MLA's domestic beef marketing confronted a set of export and domestic conditions that curtailed consumption and beef sales. In this environment, the early stages of the program delivered limited benefits, prompting a more strategic approach towards the end of the review period.

With a reduced budget (in real terms and compared to competitor proteins), MLA ran 13 beef campaigns during the assessment period and 10 of these exceeded their annual average sales benchmarks.

Without MLA's investment in nutrition, nutrition, Australian dietary guidelines may have recommended less red meat consumption due to sustainability and health concerns. This would have adverse consequences on consumer perceptions and consumption.



OPERATING ENVIRONMENT

Over the five years of this Impact Assessment, the domestic beef market experienced a difficult and enduring set of factors that prompted MLA to review and overhaul its marketing approach in the latter part of the review period. Those factors included strong export demand, increased competition from other proteins, increased concerns about the benefits of red meat consumption and industry practices and intensified supermarket competition. Together these influenced domestic beef sales and consumption.

Australia is not alone facing these challenges, with declining per capita beef consumption mirrored in all other developed western markets. However, MLA's domestic beef marketing campaigns during the period were less strategic compared with current marketing campaigns which are now underpinned with new market insights, data and evidence.

MLA's nutrition program addresses the issue of consumers limiting their intake of red meat due to health concerns, ensuring red meat is accurately represented in nutrition policy and that its nutritional benefits are recognised by healthcare professionals and the media.



KEY OUTPUTS AND OUTCOMES

- The National Health and Medical Research Council reviewed the *Australian Dietary Guidelines* – including the 'three to four times a week' red meat consumption recommendation – with a particular focus on sustainability and health concerns around cancer. MLA's activities contributed to the recommendations released in 2013 reflecting the most recent scientific evidence and the retention of the 'three to four times a week' red meat recommendation.
- MLA delivered a range of outputs in the review period: distributing more than 16 million copies of *Entice* magazine to provide consumers with inspiration to cook red meat meals, launching the SteakMate cooking app (downloaded more than 100,000 times) and the MeatCuts app to help consumers understand carcass cuts (downloaded more than 40,000 times). MLA also presented new menu concepts to foodservice operators, with some launched as limited time offers and others as core menu items.
- Despite these marketing programs, the retail value of beef sales fell by 8% over the five year period and total volume of sales also declined.

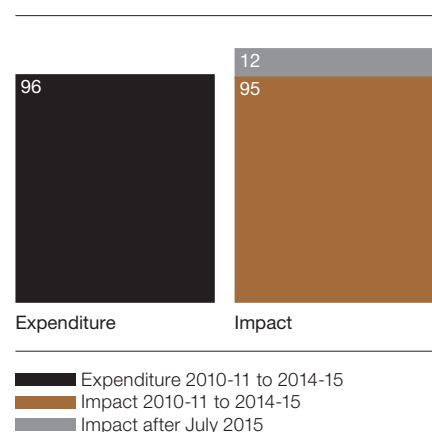


INDUSTRY TESTIMONIAL

MLA's nutrition program and the recent Better on Beef marketing program have been on target helping position beef's nutritional benefits firmly in the minds of our consumers. Such MLA programs add value to us as producers, by providing a good base for us to support and market our premium Certified Australian Angus brands.

Kate Brabin, Certified Angus Group CEO

Figure 14: Current and future impacts of MLA's expenditure (\$ million)



Lamb domestic marketing and nutrition programs

These programs aim to defend lamb demand in Australia through compelling marketing campaigns, partnering with retailers and foodservice operators and increasing the confidence of consumers preparing lamb. Nutrition remains an important driver of meal choice for Australians with messages also communicated about the nutritional benefits of red meat.

The program covers activities relating to **domestic lamb marketing and nutrition**.



HEADLINE MESSAGES

MLA's domestic lamb marketing aimed to defend the market share of Australian lamb in the domestic market, in the face of strong export demand for Australian product and competition from other proteins. MLA's annual Australia Day lamb campaign has been a highlight, resulting in lamb 'owning Australia Day'.

MLA ran 17 lamb campaigns during the assessment period and 15 of these exceeded their annual average sales benchmarks.

Without MLA's investment in nutrition, Australian dietary guidelines may have recommended less red meat consumption due to sustainability and health concerns. This would have had adverse consequences on consumer perceptions and consumption.



OPERATING ENVIRONMENT

MLA's domestic lamb marketing is a 'defensive' activity with export and domestic conditions making it difficult to grow consumption and lamb sales. These conditions included strong export demand, increased competition from competitor proteins and intensified supermarket competition and resulting loss leading.

MLA's nutrition program addresses the issue of consumers limiting their intake of red meat due to health concerns, ensuring red meat is accurately represented in nutrition policy and that its nutritional benefits are recognised by healthcare professionals and the media.

evidence and consequently, the retention of the three to four times a week red meat recommendation.

- MLA's domestic lamb promotional activities were regarded as being 'very much more successful than beef' and have resulted in lamb 'owning Australia Day'. The campaigns are viewed by industry as having a lasting impact, especially those involving celebrity Sam Kekovich.
- The retail value of lamb sales in Australia declined marginally from \$2.06 billion in 2009-10 to \$2.04 billion in 2014-15, after peaking in 2011-12 at \$2.14 billion.
- MLA delivered a range of outputs to the market in the review period: distributing more than 16 million copies of *Entice* magazine to provide consumers with inspiration to cook red meat meals, launching the LambRoast app to take the guesswork out of cooking a lamb roast (downloaded more than 10,000 times) and releasing the MeatCuts app to help consumers understand carcass cuts (downloaded more than 40,000 times). MLA also presented new menu concepts to foodservice operators, some launched as limited time offers and others as core menu items.



INDUSTRY TESTIMONIAL

The MLA Australia Day lamb campaigns always deliver results in terms of increased consumer interest and demand for lamb around Australia Day. In general, over the past five years, MLA lamb marketing programs have helped support the demand and price levels achieved for lamb in our domestic market.

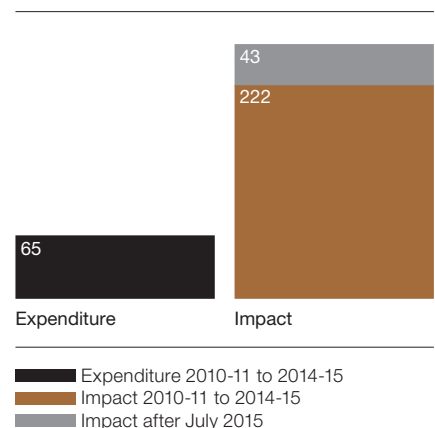
Jeff Murray, Sheepmeat Council of Australia President



KEY OUTPUTS AND OUTCOMES

- The National Health and Medical Research Council reviewed the *Australian Dietary Guidelines* from 2008 – including the 'three to four times a week' red meat consumption recommendation – with a particular focus on sustainability and health concerns around cancer. MLA's activities contributed to the recommendations released in 2013 reflecting the most recent scientific

Figure 15: Current and future impacts of MLA's expenditure (\$ million)



Beef export marketing program

This program aims to grow demand for Australian beef in global markets. This includes defending market share in the core markets of the United States, Japan and Korea as the Middle East and the emerging markets of China and Indonesia expand their share. MLA works cooperatively with Australian exporters and their customers to grow sales of individual beef brands. By having an on-the-ground presence in major markets, MLA gains insights, builds relationships and communicates opportunities to Australian industry players.

The program covers activities relating to **beef export marketing in the US, Japan, Korea, Europe, South East Asia, Middle East/North Africa and Russia.**



HEADLINE MESSAGES

Australian beef export volumes have increased by 50% and values have more than doubled in the five years since 2009-10. The average value of exports has also increased, from \$4.40/kg to \$6.56/kg. Our markets have also become more diversified with a reduced reliance on the top three markets.

The market share of Australian beef has increased in most export markets over the five years since 2009-10.

MLA has long had a presence in key export markets and has established an enviable market share position, particularly in North Asia. If MLA withdrew, competitors would work aggressively to win back market share



OPERATING ENVIRONMENT

Australian beef faces a range of challenges and opportunities globally, with increasing competition in our major trading markets, and continuing efforts to diversify our markets beyond the traditional 'big three', the US, Japan and Korea.



KEY OUTPUTS AND OUTCOMES

- Consumers in our major export markets have a high awareness of Australian beef and their perceptions toward product attributes, such as safety and quality, remain higher for Australian beef than other imported beef, but below domestic beef in all markets except China.
- 'True Aussie' was established by MLA in 2014, creating – for the first time – one core brand for Australian beef.
- Trade business development programs were implemented across all major markets. These included tradeshows; presenting seminars for importers, wholesalers and retailers; and producing meat cuts guides.
- Retail marketing programs were implemented in most markets. These included point-of-sale materials to promote Australian beef; in-store sampling; and retail advertising campaigns in Japan and Korea.
- Co-funded marketing activities with individual companies were enhanced with the launch of MLA's CoMarketing Program in 2014 and its focus on strategic brand marketing activities. This program has worked with 186 beef brands, accounting for 95,000 tonnes swt/month and of the participating companies, 66% have rated the outcomes as 'very successful'.
- Export markets have become more diversified over the five year period – the US, Japan and Korea representing 76% of exports in 2009-10 compared with 69% in 2014-15 as the Middle East and the emerging markets of China and Indonesia expand their share.
- MLA's global marketing strategies are underpinned with global consumer research, with data and insights now provided for 12 countries.

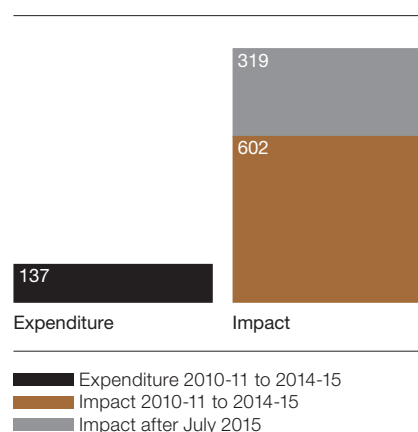


INDUSTRY TESTIMONIAL

MLA programs that position Australia as a reliable supplier of safe, healthy and good quality beef have been successful in helping establish the high level of respect and positive perceptions both trade and consumers have of Australian beef in our key export markets.

Mark Ellison, Teys Australia Marketing Manager

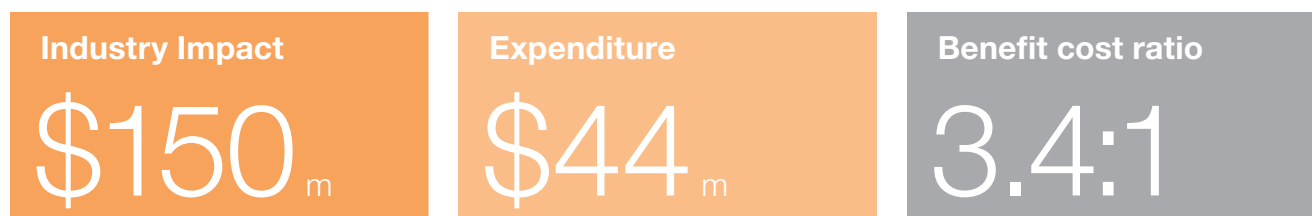
Figure 16: Current and future impacts of MLA's expenditure (\$ million)



Sheepmeat export marketing program

This program aims to grow demand for Australian sheepmeat in global markets – particularly in the Middle East and the US. MLA works cooperatively with Australian exporters and their customers to grow sales of individual lamb brands. By having an on-the-ground presence in major markets, MLA gains insights, builds relationships and communicates opportunities to Australian industry players.

The program covers activities relating to sheepmeat export marketing in North America, Japan, Middle East/North Africa, China, South East Asia and the EU.



HEADLINE MESSAGES

Australian lamb export volumes have increased by more than 50% with values nearly doubling in the five years since 2009-10. The average value of exports has also increased over this time, from \$5.83/kg to \$7.01/kg.

The market share of Australian lamb has increased in most major export markets over the five years since 2009-10.

The largest benefits (in terms of the value of sales) have come from the US, followed by the Middle East/North Africa region.



OPERATING ENVIRONMENT

Demand for Australian lamb and mutton across all markets is less responsive to price than beef because New Zealand is the only major competitor.



KEY OUTPUTS AND OUTCOMES

- Middle Eastern consumers have a higher perception of the safety and quality attributes of Australian lamb compared with New Zealand lamb. However, consumer perceptions in other countries remain generally higher for New Zealand lamb than Australian.
- 'True Aussie' was established by MLA in 2014, creating – for the first time – one core brand for Australian lamb.
- Trade business development programs were implemented across all major markets. These included tradeshows; presenting seminars for importers, wholesalers and retailers; and producing cuts guides.
- Retail marketing programs were implemented in most markets. These programs included point-of-sale materials to promote the attributes of Australian lamb; in-store sampling; and retail advertising campaigns in Japan and Korea.
- Co-funded marketing activities with individual companies were enhanced with the launch of MLA's CoMarketing Program in 2014 and its focus on strategic brand marketing activities. This program has worked with 32 lamb brands, accounting for 23,000 tonnes swt/month. Of the participating companies and 64% have rated the outcomes as 'very successful'.
- Export markets remained diversified over the five year period. The 'top three markets' – US, China and the UAE – represented 40% of exports in 2009-10, increasing slightly to 42% in 2014-15.
- MLA's global marketing strategies are underpinned with global consumer research with data and insights now provided for 12 countries (with detailed lamb data in six countries).

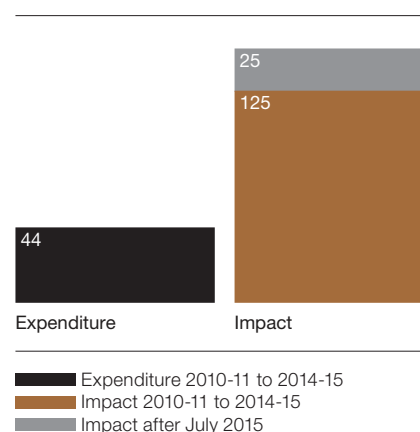


INDUSTRY TESTIMONIAL

The MLA lamb export marketing programs have been successful in helping raise the awareness and image of Australian lamb amongst the trade and consumers. MLA's programs have helped set the stage for us as suppliers to promote our brand attributes and build long-term relationships with our customers.

Craig Burgess, Top Cut Manager overseas offices

Figure 17: Current and future impacts of MLA's expenditure (\$ million)

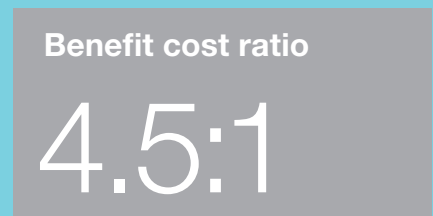




3

Increasing productivity

Programs	
3.1 & 3.5	Increasing productivity on-farm and producer engagement programs 18
3.2	Off-farm productivity program 19
3.3	Market information program 20
3.4	On-farm animal health and biosecurity program 21
3.6	Feedlot programs 22
3.7	Goat industry program 23



HIGHLIGHTS

The **'Increasing productivity'** strategic imperative provides total current and future industry returns of \$1,385 million from expenditure of \$310 million, producing a benefit cost ratio of 4.5:1.

Of the seven programs, '3.1 Increasing productivity on-farm' delivers the highest benefits, accounting for 25% of the total. Market information produces the largest benefit cost ratio of 7.9:1.

Impacts during the five year review period accounted for 38% of the total impacts. Of the total impacts 62% will be realised beyond July 2015.

Figure 18: Benefits of the **'Increasing productivity'** strategic imperative in terms of red meat net income (%)

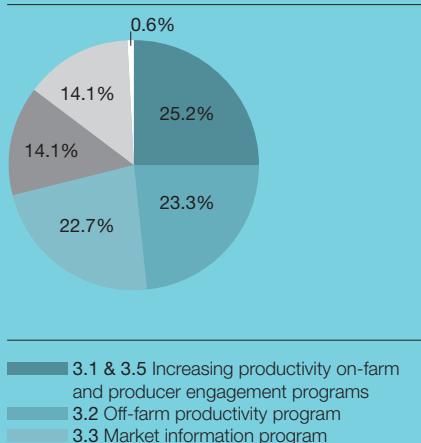


Figure 19: Benefit cost ratio of the **'Increasing productivity'** strategic imperative and its programs

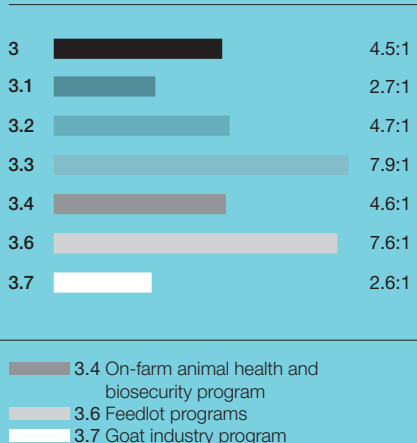
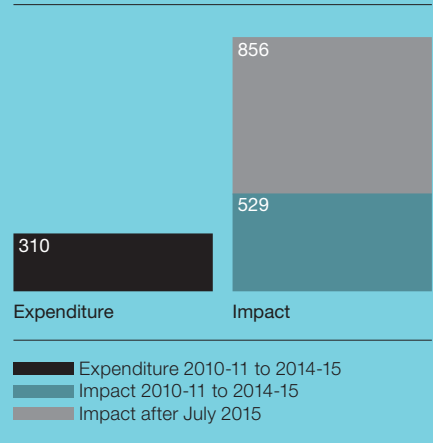


Figure 20: Current and future impacts of MLA's expenditure (\$ million)



Increasing productivity on-farm and producer engagement programs

These programs aim to deliver research, development and adoption activities to increase on-farm productivity.

The program covers activities relating to genetic improvement, grazing systems, precision livestock management, producer participatory R&D and producer engagement.



HEADLINE MESSAGES

The adoption of research and development remains an urgent priority, particularly in the northern industry, where producer engagement and adoption has been less successful than in southern livestock systems. Producers who changed practices improved their productivity by 2.3% (sheep producers), 2.2% (southern cattle) and 1% (northern cattle).

The MLA activities with the largest impacts were related to producer engagement (41%), on-farm research and development (36%) and livestock genetics (23%).

The majority of benefits from on-farm research and development are likely to flow after 2015, with minimal benefits secured during the five year assessment period. Project outputs relevant to southern livestock systems are likely to have a higher impact than those for northern beef systems.



OPERATING ENVIRONMENT

Australian agriculture has been facing declining terms of trade for decades, caused by prices paid increasing faster than prices received. Increasing productivity can help offset this cost-price squeeze. However, prolonged drought over many production regions over much of the assessment period has significantly impacted productivity. MLA's on-farm productivity activities during the assessment period were also less strategic compared with the current program.

The adoption of research and development remains an urgent priority, particularly in the northern industry. Recognising this, MLA developed a new regional consultation framework which was implemented toward the end of that five year period. The framework allows for producers to have direct input to research and development priorities for their region and to shortlist projects which have high industry impacts. A new adoption model is also being introduced, partnering producers with business development coaches in small groups to enhance the rate of practice change



KEY OUTPUTS AND OUTCOMES

- The use of forages in the Enrich program (run as part of the Future Farm Industries CRC) increased ewe turnoff in in the wheat/sheep zone by 5% (\$6/ewe) and reduced supplementary feed costs by \$10/ewe.
- Phosphorus use efficiency gains resulted in fertiliser savings of \$15/ha for those producers who were overusing P fertiliser.
- Pasture improvements to counter buffel grass rundown in northern Australia resulted in an increased live weight gain of 23kg/head/year compared with unimproved pastures.
- The new variety of psyllid resistant leucaena funded by MLA can produce an additional annual turnoff of 150kg lw/ha relative to unimproved pastures (partially offset by establishment and then ongoing costs of \$85/ha).
- The More Beef from Pastures program engaged 17,000 southern producers with 12% reporting that they subsequently changed practices.
- The Making More From Sheep program engaged 10,000 southern producers with 15% reporting that they subsequently changed practices.

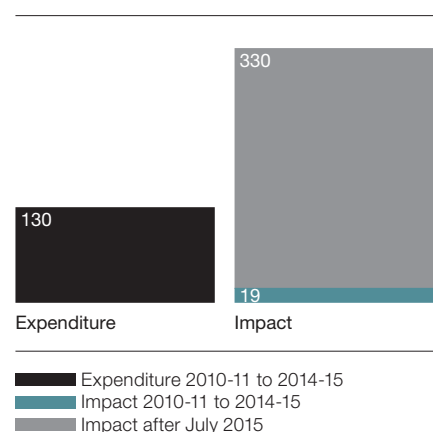


INDUSTRY TESTIMONIAL

LAMBPLAN and MERINOSELECT were the genetic catapults that improved our flock fertility and domestic market compliance. I used MERINOSELECT to find a stud producing the type of high-fertility, early maturing Merino ewes we needed.

Jason Schulz, third generation sheep producer, Meningie, South Australia

Figure 21: Current and future impacts of MLA's expenditure (\$ million)



Increasing off-farm productivity program

This program aims to deliver tools, services and solutions that help the red meat processing sector improve their productivity and profitability while minimising net costs.

The program covers activities relating to **supply chain technology, innovation sourcing and relationship building between strategic technology partners.**



HEADLINE MESSAGES

The benefits from innovations in processing plants are largely due to improvements in meat yield, with secondary benefits coming from savings in labour and workplace health and safety costs.

In the program 41% of the benefits were due to the LEAP automation technologies for lamb and 30% were due to the adoption of spray chilling in beef. The remainder of innovations benefited all species and included BladeStop, a device to prevent bandsaw injuries.

Impacts during the five year review period accounted for 35% of the total impacts while 65% of impacts will be captured beyond July 2015.



OPERATING ENVIRONMENT

The competitive global environment requires the entire Australian red meat supply chain to continue improving its productivity. Opportunities to improve productivity within the processing sector include maximising yield, optimising product mixes, reducing costs, and addressing labour availability and workplace health and safety issues.

The performance of this program has improved significantly compared to the previous evaluation due to the shift of investment away from levy funds into joint investments with individual enterprises through the MLA Donor Company (which leverages commercial funds with Australian Government dollars and doesn't use producer levies).

- The benefits of the LEAP III lamb automation system were \$1.62/head due to improved cutting accuracy, reduced bandsaw dust, improved shelf life, higher throughput, lower labour costs and lower maintenance and other costs.
- The LEAP IV rack and loin automated boning system, designed to integrate with LEAP III, has net benefits of \$2.95/head from improved accuracy.
- A machine that removes the chine (part of the spine that remains on each side of the loin and rib section when the carcass is split) represents half of this benefit, with the benefit of the new chining machine equating to between \$1-1.4 million per plant through improved yield and labour savings.
- The benefits of BladeStop machines were valued in total at \$1.25 million/year due to avoided injuries that occur with conventional bandsaws. There have been 64 machines installed across 10 plants in Australia. Benefits could rise significantly in the future with 260 machines expected to be in place by 2020 and a total market opportunity in Australia of some 1,000 units.
- The goat head browning innovation was used by a processor targeting a niche market and replaced two labour units.



INDUSTRY TESTIMONIAL

A critical component of investing in LEAP lamb automation was the associated research and development support from the partnership between JBS, the Australian Meat Processor Corporation, Scott Technology and the MLA Donor Company through matched government dollars. The system delivers our customers quality and consistency.

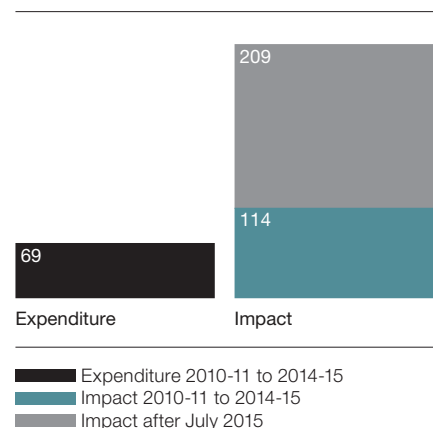
Graham Treffone, Innovation Manager, JBS



KEY OUTPUTS AND OUTCOMES

- Spray chilling improved carcass yields through a reduction in weight loss from 2 to 0.5 %. MLA investments brought forward industry adoption of spray chilling by three years.

Figure 22: Current and future impacts of MLA's expenditure (\$ million)



Market information program

This program aims to inform business management decisions in the red meat and livestock industry by ensuring market information gaps are identified and information is collated, analysed and communicated in a timely, user friendly and readily accessible manner.

The program covers activities relating to **collection and dissemination of market information; Livestock Data Link; analysis to underpin improved policy; and the Beef Language White Paper.**



HEADLINE MESSAGES

The coverage of MLA's market information service was extended over the five year review period, with more saleyard markets, export markets and livestock indicators collected and reported on.

The timeliness and ease of access to market information has been enhanced with a new app and online database now available to industry.

Piloting of the carcass feedback system, Livestock Data Link, has assisted producers to increase their compliance with market specifications.



OPERATING ENVIRONMENT

In a highly competitive global and domestic marketplace, all participants in the red meat and livestock industry need timely, accurate and relevant market information to make informed purchase and sales decisions.



KEY OUTPUTS AND OUTCOMES

- All saleyards of regional significance were covered by MLA's National Livestock Reporting Service (NLRS). Nine new markets were added while a number of other markets, no longer regionally significant, were dropped from reporting. Following the changes the NLRS reported on sales of 540,000 more cattle and 208,000 more lambs in 2014-15.
- The reporting of over-the-hooks prices was improved with additional processors providing information so that reporting now covers 80% of processing capacity.
- New live export price indicators were developed.
- The Western Young Cattle Indicator (WYCI) was developed for West Australian producers to complement the Eastern Young Cattle Indicator (EYCI).
- A new monthly report 'North of the Tropics Beef Report' was published to deliver improved market information to northern producers.

- New data was compiled and research was carried out on the emerging markets of China and Indonesia.
- A greater range of data was made available online with most of the 10,000 price, demand and supply indicators collected by MLA now available via online tools.
- The Market Information app was launched in 2014 to improve the reach of market information, news and information. The app had 11,000 downloads in its first 12 months.
- The carcass feedback system, Livestock Data Link (LDL), was piloted in 2010 and the JBS Farm Assured network made it available to its 2,400 suppliers. Following the implementation of LDL, non-compliance rates improved over a three year period: 6% for grassfed cattle and 5% for lambs.
- Independent research was commissioned to inform the Peak Industry Councils on industry issues including carbon price impacts, coal seam gas, regulatory costs and heavy vehicle regulatory changes.

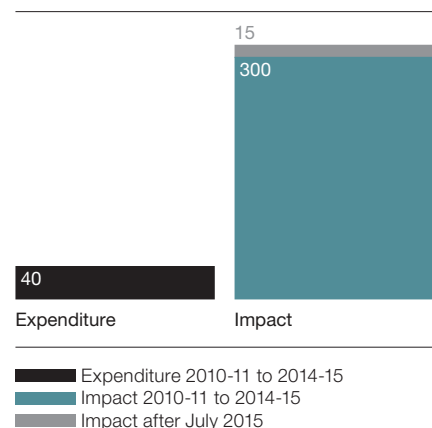


INDUSTRY TESTIMONIAL

At TFI we subscribe to [MLA's] daily publications to track short term market trends. We download long-term data series to gain insight into annual and seasonal fluctuations and combine these with supply forecasts to enable us to provide suppliers with robust forward contracts. We also access all domestic and international market data to help predict demand, allowing us to develop long term growth strategies.

David Rutley, Lamb Supply Chain Coordinator, Thomas Foods International

Figure 23: Current and future impacts of MLA's expenditure (\$ million)



On-farm animal health and biosecurity program

This program provides research on a range of diseases and plant toxins that either currently impact, or could in the future impact negatively on the health and productivity of grazing livestock.

The program covers activities relating to **improving diagnostic methods, enhanced understanding and improved control methods from external threats; improved biosecurity methods from endemic, emerging and exotic diseases; and reducing the cost of priority endemic diseases.**



HEADLINE MESSAGES

MLA Donor Company investments (which leverage commercial funds with Australian Government dollars and don't use producer levies) have encouraged industry investment in research and development topics which minimise the risk of disease such as foot and mouth disease, bluetongue and Johne's disease. They have also encouraged commercial investment in innovative approaches to existing constraints which might otherwise be neglected due to a relatively small market size (e.g. BarberVax vaccine).

In this program \$156 million in current and future benefits (80% of the total) are attributed to improved productivity and lower costs, mainly associated with research on sheep diseases due to the endemic nature of diseases relative to cattle.

Current and future benefits attributed to improved foot and mouth disease diagnostics are valued at \$39 million.



OPERATING ENVIRONMENT

Australia remains free of key animal diseases which would severely impact on trade, animal health and welfare and the ability to consistently produce high quality meat. Protecting this disease free status and minimising the impacts of other diseases is fundamental to the profitability and sustainability of the red meat and livestock industry.



KEY OUTPUTS AND OUTCOMES

- Work on foot and mouth disease vaccines and testing could reduce the severity of a potential outbreak by 5%, equating to an 18 day reduction in a one year outbreak.
- The Barber's Pole Worm vaccine has produced an avoided economic loss of \$11/ewe with 70% of that attributed to the vaccine.
- Integrated Pasture Management has reduced drench costs, mortality and morbidity, producing a net benefit of \$2/sheep in high rainfall areas, potentially targeting 67.3 million sheep.
- Research to improve the understanding of Theileria epidemiology has produced current and future net benefits of \$335,000 for northern beef producers and \$1.26 million for southern cattle producers.
- Work on the efficacy of a Johne's disease vaccine, funded by the MDC, reduced mortalities and provided an average net saving of \$20,750/flock over 15 years for those impacted flocks that would otherwise have stopped vaccinating.

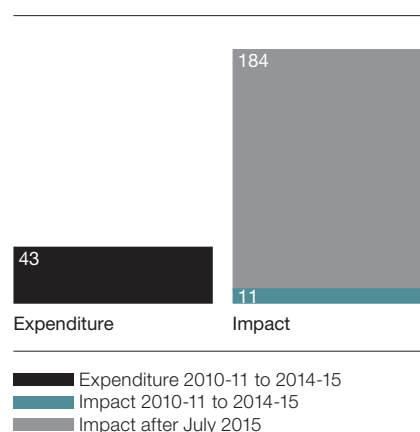


INDUSTRY TESTIMONIAL

The portfolio's coherent combination of research across regional and topical problems, industry-level issues, emerging risks and future opportunities demonstrates the high quality of strategic thinking by the MLA executive.

Dr Richard Shephard,
Managing Director, Herd Health

Figure 24:
Current and future impacts of MLA's expenditure (\$ million)



Feedlot programs: productivity, health, welfare and environment

This program aims to deliver new tools and technologies that support the feedlot sector to become more productive.

The program covers activities relating to productivity, animal health, welfare and environment.



HEADLINE MESSAGES

Over the assessment period productivity of the feedlot sector increased by 1.55%/year and 20% of that gain was directly attributed to MLA.

The major benefits of the program beyond 2014-15 are a 3% reduction in the incidence of Bovine Respiratory Disease resulting in mortality rates dropping from 1.69% to 1.64%/year; a seven-fold reduction in heat loss mortalities and improved feed efficiency. Other benefits not directly quantified include a reduction in dark cutting and technical upskilling and adoption of initiatives.



OPERATING ENVIRONMENT

With rising input costs and increasingly high community expectations on the industry, the feedlot sector must continue improving its competitiveness, productivity and profitability while enhancing the environment and the welfare of animals.

MLA's focus during this period was to ensure a high level of engagement and adoption in its research and development programs – ensuring benefits beyond the review period.



KEY OUTPUTS AND OUTCOMES

- Most of the feedlot sector, representing 80% of the industry's capacity, has been highly engaged with MLA, with good uptake of research and development.
- Without research and development to address heat stress in feedlots, regulations would have been introduced, imposing shade requirements across the entire feedlot industry at a one-off cost of \$14.4 million.
- Improved Bovine Respiratory Disease management through better backgrounding procedures and pre-feedlot vaccination can lead to a 24% reduction in mortalities in 15% of the industry.
- Research undertaken by MLA during the assessment period could lead to a new vaccine that addresses Bovine Respiratory Disease. This "2 in 1" vaccine could reduce costs by 0.4% in 60% of the industry through combining the current two doses of the pestivirus vaccine into a single shot.
- Spreading lignite over feedlot pens has the effect of reducing ammonia emissions, retaining nitrogen and reducing costs by 0.2% in 5% of the industry.
- MLA research on developing Estimated Breeding Values (EBVs) for net feed intake has identified feed efficiency could increase by 1% in 2.5% of the industry.
- Research to improve summer rations has been used to manage heat stress in feedlot cattle.

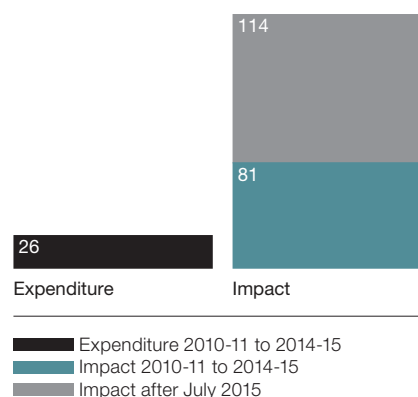


INDUSTRY TESTIMONIAL

MLA has played a key role in managing the R&D for the feedlot industry over the last five years. ALFA and MLA have a strong working relationship in planning with industry and then executing the feedlot industry R&D Program.

Grant Garey, Chairman, ALFA R&D Committee

Figure 25: Current and future impacts of MLA's expenditure (\$ million)



Goat program

This program addresses the supply-side constraints facing the goat industry such as attracting new producers into the sector and providing tools and information for existing producers to make more informed decisions.

The program covers activities relating to **on-farm research and development; live export; and consumer marketing.**

*Only the on-farm research and development aspects of this program are included in the Dashboard.



HEADLINE MESSAGES

MLA investments across goat-related research and development made a significant contribution to addressing supply-side constraints such as attracting more producers to the sector and providing resources and tools so producers can make informed business decisions.

Without the MLA/LiveCorp jointly funded Live Export Program, there was a 50% probability of the live goat export trade to Malaysia closing in 2011-12.



OPERATING ENVIRONMENT

While export demand for Australian goats and goatmeat is strong, the industry is constrained by supply. In recent years much of the growth in the industry has come from rangeland goats rather than the farmed sector.



KEY OUTPUTS AND OUTCOMES

- A new Cost of Production calculator which incorporates goats was added to MLA's suite of online tools.
- A new Rangeland Management module was added to the *Going into Goats* guide.
- The KIDPLAN website and associated resources were updated.
- The *Goats on the Move* quarterly e-newsletter was published, providing information on the latest developments in MLA's goat program and the broader goatmeat industry.
- Guidelines for optimal administration of oral anthelmintics were developed.
- Dosages, withholding periods and export slaughter intervals of parasiticides were registered for use in goats in Australia.

- The ongoing development of a vaccine for Barbers Pole Worm is being funded through the MLA Donor Company (which leverages commercial funds with Australian Government dollars and doesn't use producer levies) with National Residue Survey levies.
- In 2014 the 'True Aussie' goat brand was launched, providing a consistent way to market Australian goatmeat overseas. The brand is used in more than 30 markets.
- Global Consumer Tracker research commenced in 2013 in seven countries to collect consistent data across key markets before being expanded to 12 countries by 2015. Detailed goatmeat data is available in five of these countries to provide consumer insights for strategy development and allow for benchmarking over time.

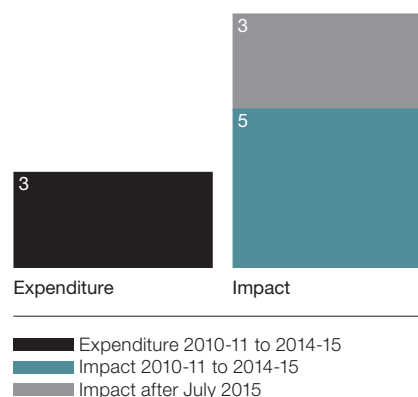


INDUSTRY TESTIMONIAL

We're working together with MLA to grow the industry and ensure that producer levy dollars are invested wisely. We're heavily involved in the levy investment process and we're working with MLA to make sure the industry continues to grow and prosper.

Rick Gates, President,
Goat Industry Council of Australia

Figure 26:
Current and future impacts of MLA's expenditure (\$ million)





Industry integrity and sustainability

Programs

4.1 & 4.4	On-farm environmental sustainability and community engagement programs	25
4.2	Off-farm environmental sustainability program	26
4.3 & 4.4	On-farm animal welfare and community engagement programs	27
4.5	Sustainable innovation capability program	28



HIGHLIGHTS

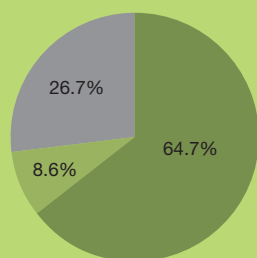
The **'Industry integrity and sustainability'** strategic imperative provide total current and future industry returns of \$464 million from expenditure of \$123 million, producing a benefit cost ratio of 3.8:1.

Of the four programs, '4.1 On-farm environmental sustainability' delivers the highest benefits, accounting for 65% of the total. '4.3 On-farm animal welfare' produces the largest benefit cost ratio of 7.7:1.

Impacts during the five year review period accounted for 11% of the total impacts.

Of the total impacts 89% will be realised beyond July 2015.

Figure 27: Benefits of the **'Industry integrity and sustainability'** strategic imperative in terms of red meat net income (%)

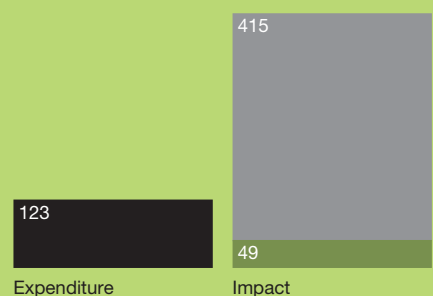


■ 4.1 & 4.4 On-farm environmental sustainability and community engagement programs
■ 4.2 Off-farm environmental sustainability program
■ 4.3 & 4.4 On-farm animal welfare and community engagement programs

Figure 28: Benefit cost ratio of the **'Industry integrity and sustainability'** strategic imperative and its programs



Figure 29: Current and future impacts of MLA's expenditure (\$ million)

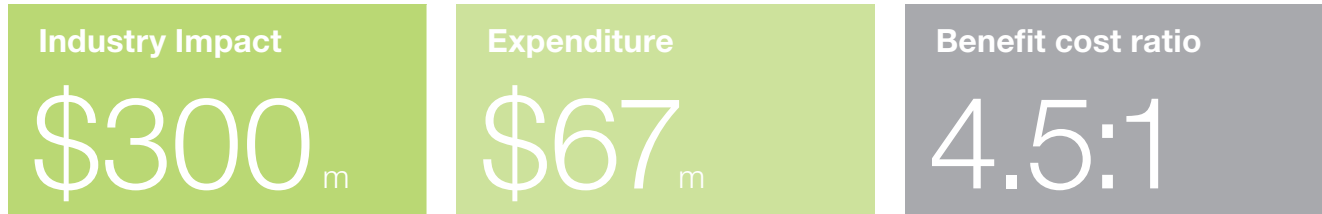


■ Expenditure 2010-11 to 2014-15
■ Impact 2010-11 to 2014-15
■ Impact after July 2015

On-farm environmental sustainability and community engagement programs

These programs support livestock production by focusing on the productivity and sustainability of the natural resource base. It identifies and responds to community concerns about the industry's environmental and welfare practices. The program also examines future risks from climate change and related environmental impacts and identifies appropriate management options.

The program covers activities relating to **pasture and grazing systems**, **adaption strategies to climate change**, **mitigation strategies to reduce emissions** and **community communications**.



HEADLINE MESSAGES

Reducing the rabbit population through the Rabbit Haemorrhagic Disease (RHD) virus has had the largest impact in this program area, accounting for more than three-quarters of the benefits.

Halving stocking rates across 2.5% of northern beef businesses produced a small net benefit of 0.05%, however the need to address the environmental sustainability and subsequent commercial viability of the northern cattle production sector is of crucial importance.



OPERATING ENVIRONMENT

As custodian of a significant proportion of Australia's land mass, the livestock industry is an important manager of the nation's natural resources. The way in which these resources are managed influences the ongoing success and reputation of the industry.



KEY OUTPUTS AND OUTCOMES

- Results from Wambiana grazing trial project and other land management projects in northern production systems indicate a marginal economic benefit in adopting flexible stocking rates. Long-term benefits include improved land condition, ground cover and infiltration rates, and reduced water and soil runoff.
- New varieties of dung beetles have been introduced to fill seasonal gaps that exist in late winter/early spring. The beetle is in 'build up' phase and could take 10 years to produce large numbers.
- Rabbit control with RHD virus, through MLA's involvement in the Invasive Animals CRC (IACRC), involved an initial 20% reduction in rabbit numbers and a further forecast reduction of 16% in 2030. This produced a net benefit of \$50 million for southern beef producers and \$4.8 million for sheep producers. Other benefits include

increased regeneration of native vegetation and habitats, reduced soil erosion and land degradation.

- An alternative wild dog and fox toxin 'PAPP' (and its antidote) was developed for use in manufactured baits through MLA's involvement with the IACRC, reducing lamb and calf deaths.
- A new biocontrol for Parkinsonia was developed using two Eueupithecia moth species from South America. Both agents require future investment for mass rearing and distribution.
- Strategies have been developed to increase productivity while reducing greenhouse gas emissions using leucaena plantations in northern cattle systems, introducing Australian native shrubs with methane-reducing properties, feeding northern cattle tropical grasses, soil carbon sequestration, genetics, forages and supplements.
- Two Emissions Reduction Fund methodologies were developed: whole herd management and nitrate supplementation.
- There continues to be high levels of community trust in the industry at 83%. Less than 5% of consumers have reduced red meat consumption due to environmental or animal welfare reasons.

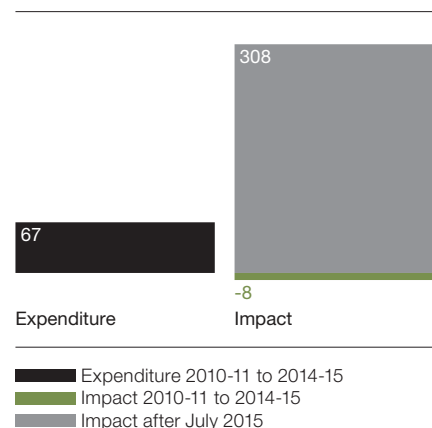


INDUSTRY TESTIMONIAL

I lead the Invasive Animals CRC project 4, focused on community action on the management of invasive animals. MLA has been, and continues to be, a pivotal contributor to this important work. They consistently provide us with expert advice, and assist enormously with our engagement with industry.

Professor Paul Martin, Director, Australian Centre for Agriculture and Law, University of New England

Figure 30: Current and future impacts of MLA's expenditure (\$ million)



Off-farm environmental sustainability program

This program focuses on identifying, developing and implementing opportunities to reduce energy and water consumption and improving waste management to minimise environmental impact.

The program covers activities relating to **resource use efficiency, waste management, mitigation of greenhouse emissions, environmental stewardship and adoption of new technologies.**



HEADLINE MESSAGES

Work through the MLA Donor Company (which leverages commercial funds with Australian Government dollars and doesn't use producer levies) has lowered energy costs and improved the environmental performance in red meat processing plants through new energy efficiency measures.

Investment in environmental initiatives has enabled processing plants to continue operating, especially in peri-urban areas of Australia.

The performance of the program has improved considerably with the shift in investment from the general levy program to the MLA Donor Company.



OPERATING ENVIRONMENT

Reducing emissions and other by-products of processing are critical to improving the efficiency and sustainability of processing plants and maintaining their social license to operate. Failing to comply can result in plant closure, restrictions on the number of animals that can be processed or environmental planning limitations being placed on expansion. Minimising input costs, including energy costs, also serves to maintain processing plant and industry competitiveness.



KEY OUTPUTS AND OUTCOMES

- MLA research minimised the risks for processors adopting Covered Anaerobic Lagoons (CALs), improving wastewater quality and reducing environmental compliance costs. MLA's investment brought forward CAL installation by a year and, through MLA's technical support, ensured their optimum efficiency and operational life. The technology represents an annual energy saving of \$730,000 for a large processing plant.
- Twelve energy efficiency projects demonstrated potential natural gas and electricity savings. Six projects were adopted, generating aggregate annual savings worth \$2 million/year and an equivalent of 4,700 T/year greenhouse gas emissions equivalent. Of the savings in electricity, over 90% were from refrigeration efficiency initiatives.

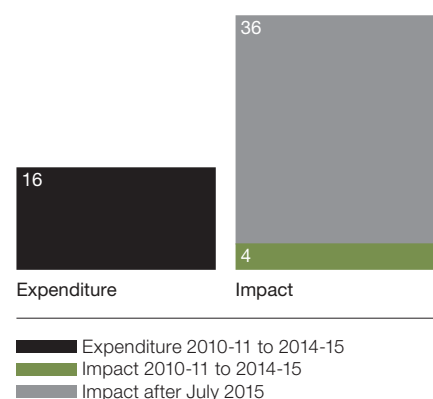


INDUSTRY TESTIMONIAL

During early-mid 2000s challenges with odour and the emerging climate change issue drove the need to adopt covered anaerobic lagoon (CAL) technology. MLA's investment in researching the best technical solutions greatly assisted de-risking the significant investment made in CALs by Australian red meat processors.

Mike Johns, Johns Environmental

Figure 31: Current and future impacts of MLA's expenditure (\$ million)



On-farm animal welfare and community engagement programs

The program supports red meat demand, particularly domestically, and the maintenance of the industry's social license to operate.

The program covers activities relating to developing replacements for aversive procedures, reducing mortality rates on farms, increasing uptake and demonstration of welfare best practice across the whole supply chain, developing ways to minimise the pain of aversive procedures and community engagement.

Industry Impact \$124_m	Expenditure \$16_m	Benefit cost ratio 7.7:1
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HEADLINE MESSAGES

The avoided reduction in red meat demand from MLA's community engagement program accounted for half the program's benefits.

In this program 40% of the benefits were due to the reduction in time to transport livestock following the extension of the legal transport time from 36 to 48 hours.

The impact of the improved poll gene test for northern cattle accounted for 10% of benefits, with up to 19,500 calf losses avoided given the need for dehorning is eliminated.



OPERATING ENVIRONMENT

The community has high expectations around the application of animal welfare standards in livestock production and the industry continues to enhance the application of sound husbandry practices that are developed through new research. Equally, it's important that industry clearly communicates these improvements to the Australian and global community to maintain confidence and support for the industry.



KEY OUTPUTS AND OUTCOMES

- The number of consumers who reduced their red meat consumption for animal welfare reasons was limited to 3.3%, which would have been higher without MLA's animal welfare-related investment.
- DNA tests for the poll gene, particularly for *Bos indicus*-derived breeds, were developed by the Beef CRC (of which MLA was a partner) and CSIRO. By producing polled animals, this test can prevent calf deaths given the need for dehorning is eliminated. More than 67 Brahman breeders have used the test since its release.
- Bucalgesic® and NumNuts were developed to minimise the pain of aversive procedures.
- Extending the legal transport time from 36 hours to 48 hours has provided transport cost savings and improved the accessibility of southern markets for northern producers. Although the major portion of the land transport research that influenced the standards was completed before 2008, MLA was involved in the development of a communications package and other research during the assessment period.
- MLA secured cooperation from animal welfare groups, such as RSPCA and Animals' Angels, for some of the industry's animal welfare activities such as the *Is it fit to load?* guide.
- The *Is it fit to load?* guide is MLA's most requested publication with more than 56,000 hard copies ordered since its revision in 2012.

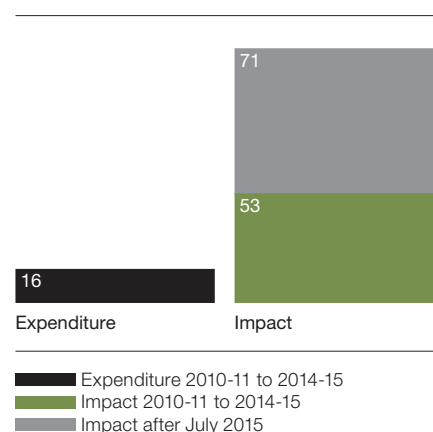


INDUSTRY TESTIMONIAL

MLA's initiatives in funding animal welfare R&D have enabled the red meat livestock industries to be ahead of the game on a number of issues. Through this, farmers benefit, their animals benefit, and the consuming public can have greater confidence in the provenance of the products they buy.

Andrew D Fisher, Professor of Cattle and Sheep Production Medicine, University of Melbourne

Figure 32: Current and future impacts of MLA's expenditure (\$ million)



Sustainable innovation capability program

This program aims to increase capability across the supply chain by working with processors and other supply chain partners to support the development and adoption of new knowledge and enhance scientific, innovation and technical skills. It also seeks to ensure long-term research capability is available in the required disciplines within the research community.

The program covers activities relating to the Collaborative Innovation Strategy Program, Intercollegiate Meat Judging, the Graduate program, Undergraduate program and support for the development of essential science, research, technical and extension capabilities.

MLA invested

\$24

million in this program. No impact has been attributed to this program.

HEADLINE MESSAGES

MLA working in partnership with companies across the value chain has proven an effective way to build capability and increase innovation in the red meat industry.

MLA's investment in initiatives to attract secondary, tertiary, graduate, doctoral and post-doctoral students to the red meat industry has contributed to retaining students in the industry.



OPERATING ENVIRONMENT

A culture of innovation is critical for the sustainability of the red meat industry. This will only occur if supply chains have the necessary capabilities to grow, sustain and measure innovation. With declining research and development capacity in the public sector, MLA has recognised the need to encourage more graduates, doctorates and post-doctorates to consider a career in the red meat industry.



KEY OUTPUTS AND OUTCOMES

- The Collaborative Innovation Strategy Program aims to build innovation capability within red meat value chains. Participating companies represented 66% of total beef and sheepmeat production. Across the program, more than 80% of agreed key performance indicators have been achieved.
- The Intercollegiate Meat Judging program engages with more than 150 tertiary students and 300 secondary students each year to provide them an opportunity to learn about meat quality and grading with a view to considering a career in the red meat industry.
- The Graduate program, funded entirely by the MLA Donor Company (which leverages commercial funds with Australian Government dollars and doesn't use producer levies), addresses a shortage of skilled

professionals in the red meat industry. Participants are drawn from disciplines including environmental, engineering, agriculture, food science, marketing and human resource management. The Program placed 69 graduates in employment in the red meat industry who participated in a twice yearly professional development program.

- The Undergraduate program, funded entirely by the MLA Donor Company, matched 134 undergraduates with companies in the red meat industry. The program started in 2001 and finished in 2010. In 2012 a review found that of the 71 students who were contacted, approximately 20% remained in the industry. A further 10% expressed an interest in working in the industry but were unable to find jobs.
- MLA's funding of PhD scholarships was reviewed in 2013, with the return on investment highest for students towards the end of the education pipeline. Consequently, MLA increased its funding to doctoral and post-doctoral fellows and of the 32 PhD scholarships funded, half intended to continue working in the red meat industry after graduation. Additional students were trained in the MLA-supported Sheep CRC, Invasive Animals CRC and the Future Farm Industries CRC. Of the five post-doctoral fellows, all are contributing to red meat research.



INDUSTRY TESTIMONIAL

The MLA Collaborative Innovation Strategy Program, historically and presently, has delivered a solid platform in supporting ACC to develop and deploy our innovation strategies across the entire group from farm grazing/cropping, feedlot feeding and factory processing. The availability of program resources is fundamental to facilitation of our priorities for continuous improvement in operational efficiency and financial economy end to end in the business.

Anthony Lee, General Manager, Operations Service & Business Development, Australian Country Choice

MLA Donor Company

The MLA Donor Company (MDC) aims to significantly increase the level of private investment in innovation in the Australian red meat and livestock industry, enhancing the outcomes of commercially focused innovation, accelerating the commercialisation of research and development and assisting the industry to develop an innovation culture and capability.

The MDC leverages commercial funds with Australian Government dollars and doesn't use producer levies.

The impact/benefits from MDC projects are captured in the relevant program areas but are summarised here.



HEADLINE MESSAGES

While no MLA producer levies are invested in MDC-funded projects, the MDC complements levy investment with voluntary contributions by commercial companies for research and development benefiting the entire supply chain.

The MDC injects new investment into research, development and commercialisation.

The MDC encourages 'fast failures' for high risk investments which are not achieving their milestone targets, offsetting a common failing in the research environment.



OPERATING ENVIRONMENT

The MDC works with companies to lift their innovation capability and the level of private investment in red meat innovation. It also helps to bridge the gap between concept and the commercialisation of innovations and accelerate the rate of adoption.



KEY OUTPUTS AND OUTCOMES

MDC investments relate to the following program areas:

- New products (2.3) – a \$33 million increase in net industry income from projects that were either 50 or 100% MDC funded.
- Productivity on-farm (3.1) – a \$69 million increase in net industry income from animal genetics work that was funded 14% by the MDC.
- Processing efficiency (3.2) – a \$194 million increase in net industry income from a selection of processing productivity projects that were significantly MDC funded.
- Animal health and biosecurity (3.4) – non quantifiable benefits from MDC-funded development of vaccines.
- Off-farm environmental sustainability (4.2) – a \$40 million increase in net industry income from a selection of processing sector environment projects that were significantly MDC funded.

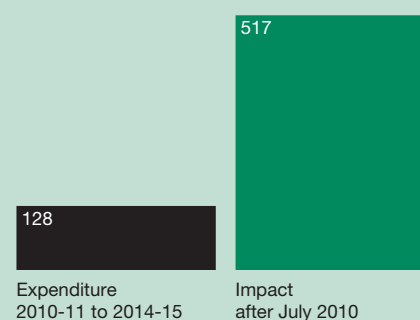


INDUSTRY TESTIMONIAL

MDC funding and support gave us the confidence to go ahead and invest \$10 million in a plant to make the ProForm High Moisture Cooking (PHMC) process a commercial reality. We plan to process up to 3,000 tonnes of trim and MDM (Mechanically Deboned Meat) into innovative, gourmet, red meat based ready meals for domestic and export markets.

Stephen Dunn, Managing Director, ProForm Gourmet

Figure 33: impacts of MLA's expenditure (\$ million)



Notes



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