Evaluation of the LiveCorp, MLA and the Australian government and industry partnership

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Evaluation of the LiveCorp, MLA and the Australian government and industry partnership

The collaboration and co-investment in the Live Export Program, LiveCorp and the Live Animal Trade Program

Prepared for

LiveCorp and Meat and Livestock Australia

Centre for International Economics
Canberra & Sydney

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**Canberra**
Centre for International Economics
Ground Floor, 11 Lancaster Place
Majura Park
Canberra ACT 2609
GPO Box 2203
Canberra ACT Australia 2601
Telephone +61 2 6245 7800
Facsimile +61 2 6245 7888
Email cie@TheCIE.com.au
Website www.TheCIE.com.au

**Sydney**
Centre for International Economics
Suite 1, Level 16, 1 York Street
Sydney NSW 2000
GPO Box 397
Sydney NSW Australia 2001
Telephone +61 2 9250 0800
Facsimile +61 2 9250 0888
Email ciesyd@TheCIE.com.au
Website www.TheCIE.com.au

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Summary

An evaluation of a collaborative approach...

Australia is the world’s leading supplier of live cattle, sheep and goats to countries around the world, in particular the Middle East and Asia.

- Australia meets the demand for essential red meat protein by exporting livestock for food production and breeding, as well as chilled and frozen meat products.

The industry outcomes observed today in the Australian live animal export market are the result of collaboration between LiveCorp, MLA, the Australian government and industry. This collaborative approach has involved:

- the Live Export Program (LEP) a formal joint venture between LiveCorp and MLA that provides benefits to both producers and exporters;
- other LiveCorp activities carried out independently of the LEP in a value-adding role supporting its exporter members and other livestock exporter industry stakeholders;
- the Live Animal Trade Program (LATP) — which is funded by the Australian government to improve animal welfare conditions in the livestock export trade;
- other activities and policy development through Australian Government agencies such as the Department of Agriculture, Forestry and Fisheries (DAFF) and the Department of Foreign Affairs and Trade; and
- industry investment, a continuing commitment to improving animal welfare and structural change in the industry.

This report presents an independent evaluation of the LEP other LiveCorp and LATP return on investment over the period from 2002-03 to 2008-09.

- To provide consistency for funders in industry and government, LiveCorp has adopted the MLA evaluation framework.

...involving significant investments...

Table 1 shows that a total of $55 million was invested on behalf of the live export industry and red meat producers.

- With $30 million through the LEP, (40 per cent by LiveCorp and 60 per cent by MLA).
  - $7.3 million of which could be classified as R&D expenditure.
### Investment in the LEP, other LiveCorp activities and the LATP

#### LEP expenditures

<table>
<thead>
<tr>
<th></th>
<th>LiveCorp</th>
<th>MLA</th>
<th>Government matching for R&amp;D</th>
<th>Total LEP</th>
<th>Other LiveCorp</th>
<th>LATP</th>
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<td>30.0</td>
<td>12.0</td>
<td>13.4</td>
<td>55.4</td>
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*a In nominal terms. Totals may not add due to rounding. b Other non-LEP expenditure made by LiveCorp in support of industry training and extension of LiveCorp research programs and stakeholder management. Source: LiveCorp accounts and MLA Annual Operating Plans Final reports.

- $12 million was by LiveCorp for activities outside of the LEP; and
- $13.4 million was from the Australian Government through the LATP.

... in response to a challenging operating environment.

The evaluation period encompassed a challenging operational environment for the live export industry:

- following the Cormo incident in 2003, there were high levels of public and government scrutiny of the trade around animal welfare issues on-board and on disembarkation in destination markets;
  - The backdrop to these developments was continuing strong market demand in destination markets for both Australian live cattle and sheep and also for fresh and meat that could not be met from local domestic sources.
- this scrutiny has led live exports to be the one of the most regulated industries and now operating within a range of regulatory structures with overall supervision by the Australian government and to a lesser extent complementary legislation by the states and territories.

To quantify the benefits of the approach, we need to identify program outputs and then outcomes...

The challenge for this evaluation, in this market and regulatory context, was to translate the program activities and outputs, into outcomes and impacts that have resulted in benefits to live exports, producers who supply the live trade, the wider red meat industry and the wider Australian community.

The LEP has four strategic imperatives.

- Ongoing improvement in animal welfare outcomes.
- Improve industry efficiencies, capabilities and livestock performance through the supply chain.
- Build Government and community support for the industry and increase stakeholder awareness and satisfaction.
- Improve market access conditions and build demand for Australian livestock.

LiveCorp’s value-adding role focuses on:
- industry policy implementation, communication and relationship management and consultation with industry and government stakeholders in Australia and in customer countries; and
- representation and support of exporter members on broader industry committees, taskforces and at stakeholder meetings; and
- support and development of the industry.

The outputs and outcomes of the LATP has focused on cooperatively working with trading partners in the Middle East region to address post-arrival welfare concerns and to improve the transportation, handling and slaughter practices for livestock.

...the outcomes have been achieved.

The collaborative approach has contributed to sustain the live export trade at higher levels than would have been possible without this co-investment. The value of benefits arising is assessed as the difference between the live export industry benefits seen in the observed case (with the collaborative approach) and an estimate of those that would have arisen under the alternate scenario, as seen in the ‘without investment’ baseline (without the collaborative approach).

- Without these actions, it would have been difficult for the Australian government to support the trade through the issue of export licenses/export approvals.
- Rather than taking an industry wide approach to licensing and accreditation, the Australian government would most likely have taken a precautionary approach to licensing of individual export shipments on a case by case basis.
- Exports to what were perceived to be higher risk destinations would have been stopped or only permitted subject to a more stringent range of conditions including shipping to certain destinations, shipping at certain times of the year and possibly the requirement for very conservative stocking densities on-board.

In the case of the feeder and slaughter cattle, exports to the Middle East would likely have ceased while exports to Indonesia, the mainstay of the cattle trade, would have stopped but then proceeded on the basis of accreditation of individual shipments or operators.
Across all markets, total cattle numbers exported could have fallen by an estimated 60 per cent in 2004 and then recovered after three years to around 75 per cent of those that were observed.

The impacts on other markets are less straightforward — an assessment has been made on the basis of the consideration of a number of inter-related factors that would have been in play at the time.

- A factor would have been the risk assessment made by the Australian government on the transport risk and the conditions of livestock handling within each of the markets.
- Another factor would be the level of demand for Australian product and the degree of integration between Australian exporters and customers in each market. That is, some countries may have made representations at government level for re-establishment of the trade.
- Owners of the shipping fleet dedicated to the live trade would have also pushed for the maintenance of the trade to ensure capacity utilisation and so protect their investment in the short term.

Consultation with industry and government revealed that while sustained demand for Australian sheep may have kept the trade open to the majority of the key markets — uncertainties around the possibility of another adverse event would have stifled investment in the industry at all points of the industry.

- This includes the infrastructure within Australia to source and aggregate sheep, the requisite investment in shipping capacity, and improved disembarkation and slaughter facilities within destination markets.

Without the certainty provided by the collaborative approach, the investment that was observed would not have happened to the same level, leading to a gradual decline in export numbers as:

- Middle East markets would have moved to other sources of supply including sheep from South America and North Africa and possibly to other sources of protein such as subsidised meat exports from the European Union; while
- shipping operators would have directed their capacity to these other live sheep sources.

In absence of the collaborative approach, it has been assessed that exports of live sheep would have fallen steadily through to 2009, reflecting ongoing uncertainty, throughout industry and government, around the impact of another adverse event on the trade.

- By 2009, total exports of sheep may have been 3.4 million lower than in the observed case, after which the trade is assumed to largely stabilise around exports of only 1.3 million sheep annually.
The breeding stock trade, (beef, dairy cattle and sheep) would have been much less affected without the LEP/LiveCorp and the LATP and would be likely to have continued at much the same levels without the LEP/other LiveCorp and LATP investment.

Quantifying the impacts using this ‘top-down’ approach...

At an aggregate level, the gains from the collaborative approach towards the live export trade were found to increase export values by $1 446 million over the period 2003 to 2009 — without consideration of any flow-on effects to the Australian livestock industries.

- In addition to this higher export performance were the direct benefits to exporters of lower mortalities on board than would have been the case without the collaborative approach.
- Total savings across cattle and sheep exporters are estimated to amount to $10.9 million over the evaluation period in dollars of the day (the total of $2.8 million for cattle and $8.1 million for sheep).

To quantify the benefits of the LEP/LiveCorp and the LATP, the Global Meat Industries (GMI) model was used to translate the difference between the observed and ‘without LEP/LiveCorp and the LATP’ back into changes in net incomes for exporters and the wider Australian livestock industry.

- Cattle and sheep that would not have been exported would have been diverted to other markets, through the Australian processing sector, incurring a range of additional costs mainly livestock transport.

The impact of the LEP/LiveCorp and the LATP on Australian livestock prices is significant — increasing saleyard prices between 2 and 4 cents per kilogram on a live weight basis for cattle and between 2 and 12 cents per kilogram live weight for lambs and older sheep.

Table 2 shows that the LEP/LiveCorp and the LATP contributes between 1.6 and 2.8 per cent to the cattle industry GVP and between 2.0 and 5.7 per cent to sheepmeat GVP (excluding the impact on the wool industry).

Using the MLA evaluation framework, these impacts are estimated as changes in value-added or profitability for the cattle and sheep industries examined:

- farm level (supplying the processing industry and live exports);
- live exporters and processors.
Increase in farm level GVP from the collaborative approach

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<td>2009-10</td>
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*Change from the observed case in saleyard terms excluding impacts on live exporters and processors.*

*Source:* GMI model and CIE calculations.

...after considering attribution of benefits between collaborators...

The investments through the LEP/LiveCorp and the LATP, along with others by government and industry, have together resulted in the benefits of higher exports and lower animal mortality rates during transportation. It is estimated that in broad terms the benefits can be attributed equally between LiveCorp and MLA (both within the LEP plus other activities by LiveCorp); government the LATP and other policy support; and industry.

For this evaluation, the relative contributions by LiveCorp and MLA have been made on the basis of the respective values of the original investment. This approach is consistent with the Council of Rural Research and Development Corporations Chairs (CRRDCC) guidelines (April 2009). Therefore within the one-third attributable to the combined action of the LiveCorp and MLA:

- 60 per cent of that benefit would be attributable to LiveCorp; and
- 40 per cent to MLA.

...provides the quantified benefits of the collaborative approach...

The present value of benefits over the evaluation period (2003 to 2015) — is estimated at $1.12 billion (5 per cent discount rate).

- This value represents the increase in farm incomes for cattle and sheep producers and the change in net margins (difference between output price and livestock acquisition costs) for exporters and processors.
- Around 57 per cent of the on-farm benefits accrue to cattle industry (including producers who supply the live trade) and 43 per cent to the sheep industry (including those producers in the wool industry who sell into the slaughter and live export markets).
- The remainder of the impacts are shared between the live exporting industry and processors.
Based on the logic of the attribution, the sum of benefits in present value terms to LiveCorp and MLA is worth $382 million or one-third of the total benefits to the red meat industry — while the combined benefits to industry and government are worth $742 million.

Table 3 shows the bottom line for the LEP program. In total, the benefit cost ratio is estimated to be 7.9 to 1 for LiveCorp and MLA — the partner in the LEP. Overall, the total payoff to both LiveCorp and MLA is 7.9 to 1.

### 3 Final benefit cost for the collaborative approach

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<th>Total benefits</th>
<th>Total costs</th>
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<td>MLA</td>
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<td>Total LiveCorp and MLA</td>
<td>382</td>
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</table>

**Note:** Net present value of benefits 2003 to 2015 in 2008-09 terms at a discount rate of 5 per cent.

Source: GMI model and CIE calculations.

...also benefits from investment in R&D ...

To estimate the benefits from the LEP R&D portfolio is a challenge.

- This because this output is largely a defensive strategy which in practice adds to industry costs in order for them to achieve best practice animal welfare outcomes.
- The diffuse nature of the research itself and time lags involved in commissioning, conducting R&D and providing extension to industry makes objectively quantifying this contribution very difficult.

For the LEP program, 25 per cent of total expenditure is classified as R&D while the remainder relates to marketing and market access.

- To be conservative, one-third of total LATP expenditure was also counted as R&D expenditure that benefited the industry and the wider community.

An assessment was made that R&D contributed, conservatively, 10 per cent of the total benefits quantified.

- The total payoff from R&D, as measured by the benefit cost ratio, is conservatively estimated to be 4.7 to 1 for LiveCorp and MLA through the LEP program.

Benefits not quantified could be substantial...

Spillover benefits are outcomes and impacts that flow onto other Australian industries, and the wider community in Australia and overseas. A number of spillover benefits can be attributed to the collaborative investment including:
- benefits to the wider Australian community from improvements in animal welfare as evidenced by the ongoing support for the live trade by the Australian government;
- regional impacts of the live trade particularly rural and remote Australian communities of Western Australia, western Queensland and the Northern Territory; and
- the live cattle trade particularly has contributed heavily to the structural change observed in the northern cattle industry since the mid 1990s which has been confirmed by high rates of total factor productivity growth above those observed in the southern cattle industry for the same period and strong appreciation in land values in the northern industry reflecting the expectations of the future market prospects for the trade.

...including benefits to trading partners

There are also a number of ways in which our trading partners have benefitted from higher levels of live exports from Australia, to which the collaborative approach is a contributing factor, and from direct investment through LEP in trading partners. These include:

- improvement in local, social and economic wellbeing in importing countries of consumers (higher consumption and greater choice) and producers (value adding to imported feeder animals); and
- spillovers from technology and solutions transfer and capacity building particularly from the LEP in addressing specific marketing and technical problems in each of the export markets.
## Glossary

<table>
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<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>ABARE</td>
<td>Australian Bureau of Agriculture and Resource Economics</td>
</tr>
<tr>
<td>ALEC</td>
<td>Australian Live Exporters Council</td>
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<tr>
<td>AOP</td>
<td>Annual Operating Plan</td>
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<td>AQIS</td>
<td>Australian Quarantine Inspection Service</td>
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<td>ASEL</td>
<td>Australian Standards for the Export of Livestock</td>
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<td>CRRDCC</td>
<td>Council of Rural Research and Development Corporations Chairs</td>
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<td>CIE</td>
<td>Centre for International Economics</td>
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<tr>
<td>FOB</td>
<td>Free on board</td>
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<td>GMI</td>
<td>Global Meat Industries model</td>
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<td>GRP</td>
<td>Gross regional product</td>
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<td>GSP</td>
<td>Gross State Product</td>
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<td>GVP</td>
<td>Gross value of production</td>
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<td>KPI</td>
<td>Key Performance Indicator</td>
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<td>Live Export Accreditation Program</td>
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<td>Live Export Program</td>
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<td>TFP</td>
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</tr>
</tbody>
</table>
1 Background

The industry outcomes observed today in the Australian live animal export market are the result of collaboration between LiveCorp, MLA, the Australian government and industry. This collaborative approach has involved:

- the Live Export Program (LEP) a joint venture between LiveCorp and MLA;
- other LiveCorp activities carried out independently of the LEP;
- the Live Animal Trade Program (LATP) — which is funded by the Australian government;
- other activities and policy development through Australian Government agencies such as the Department of Agriculture, Forestry and Fisheries (DAFF) and the Department of Foreign Affairs and Trade; and
- industry investment, a continuing commitment to improving animal welfare and structural change in the industry.

Components of the collaborative approach

The Live Export Program

The LEP is a joint venture between LiveCorp and MLA that provides benefits to both producers and exporters. The LEP operates under four key strategic imperatives which are outlined in the livestock export industries strategic plans. These cover:

- Ongoing improvement in animal welfare outcomes,
- Improve industry efficiencies, capabilities and livestock performance through the supply chain,
- Build Government and community support for the industry and increase stakeholder awareness and satisfaction,
- Improve market access conditions and build demand for Australian livestock

The LEP is a formal joint venture between LiveCorp and Meat and Livestock Australia (MLA) that provides benefits to both producers and exporters. The program’s objectives are outlined in the MLA Strategic Plan as Program 1.3 — Maximising market options for producers and exporters in the livestock export trade.

The MLA 2008-09 Annual Operating Plan outlined Program 1.3 as follows.
MLA’s goal is to partner industry to sustain a livestock export sector that contributes at least $1.8 billion in revenues to the Australian economy annually. To ensure its sustainability MLA will partner with LiveCorp to deliver programs designed to continue to improve the wellbeing of Australian livestock in transit and in receiving countries, as well as investing in R&D to find innovative solutions to create world’s best practice supply chains for the export of cattle, sheep and goats.

In collaboration with industry, the program will also invest in programs to drive demand for meat in key receiving markets to increase demand for Australian livestock and Australian meat products. These investments, and the outcomes from them, will be communicated to the broad stakeholder base to demonstrate the industry’s commitment to addressing community concerns.

Previous MLA Annual Operating Plan (AOPs) have outlined a similar focus although prior to 2009, the LEP was divided between two programs, one focussing on market access and market development and the other on animal welfare.

LiveCorp and MLA through the LEP fund programs in:

- animal welfare;
- market access and development;
- supply chain efficiency;
- communication and stakeholder relationships; and
- research and development (aligned with the National Research and Development Priorities and with livestock export industry stakeholders’ needs).

As with their investment in the LEP, LiveCorp and MLA undertake a range of other activities which provide benefits to exporters and livestock producers supplying export markets.

**Other LiveCorp activities**

This component of the overall approach reflects LiveCorps’ value-adding role supporting its exporter members and to other livestock export industry stakeholders. These activities are detailed in chapter 3.

**Government co-investment through the LATP**

The Australian Government and the livestock export industry have worked with overseas countries to improve animal welfare practices. The LATP included initiatives to improve animal welfare conditions in the livestock export trade including funding for a range of improvements:

- $2.0 million in the 2004-05 financial year to fund the development of the new regulatory regime for live animal exports;
$0.9 million in the 2004-05 financial year and $0.8 million a year for the 2005-06, 2006-07 and 2007-08 financial years to fund a Veterinary Counsellor in the Middle East to support the government-to-government livestock export relationship;

$1.0 million a year in the 2004-05, 2005-06, 2006-07 and 2007-08 financial years to fund a technical cooperation program with importing countries; and

$0.2 million in the 2004-05 financial year and $0.05 million in the 2005-06 and 2006-07 financial years to fund the development of the Australian Code for the Export of Live-stock and associated standards in subordinate legislation.

Outcomes

A pivotal point for the Australian live export industry was the so-called Cormor incident that occurred in August 2003. That incident, and the subsequent Australian Government commissioned Keniry Inquiry, led to:

- further regulation of the live export trade;
- an Australian Government financial commitment to LATP program;
- a compulsory levy on live exports to support LiveCorp activities (including additional investment in the LEP) which commenced in early 2005;
- additional matching MLA investment, including R&D; and
- industry investment by live export operators to improve animal welfare and competitiveness.

Evaluation of the collaborative approach

Under the Funding Agreement between the Commonwealth Government and the Australian Livestock Export Corporation Ltd (LiveCorp) and MLA, in developing its AOP, LiveCorp must consider, amongst other things the establishment of a structured evaluation plan for the systematic evaluation of the costs and benefits of LiveCorp’s key investments, to assist in monitoring and reporting on performance. In this regard LiveCorp must:

- consult with the department in preparing the evaluation plan;
- participate in any evaluation project relevant to its operations which is established for all rural development corporations; and
- demonstrate its commitment to provide adequate expenditure for this purpose.

MLA, in support of the development of their AOPs and strategic plans, evaluate their programs using a standard evaluation framework to ensure consistency of assessments across its programs. To provide consistency for funders in industry and government, LiveCorp has adopted the MLA evaluation framework. This framework maps program inputs to outputs, outcomes and impacts. The primary impact focus is the benefits to the investors — levy payers and the Australian community more
generally—but benefits to others are also examined and included as appropriate.

MLA is systematically applying the framework across all of its program areas.

Another driver for this evaluation is the reporting and representations made by the Council of Rural Research and Development Corporations Chairs (CRRDCC). The CRRDCC provides the peak forum for evaluation of the collective impact of the rural R&D corporations and for collaboration on major projects of national significance.

- The evaluation framework used in this analysis is that adopted by MLA and meets all of the above requirements.

Although this evaluation focuses on the LEP, both LiveCorp and MLA undertake a range of complimentary activities that provide benefits to exporters and livestock producers.

- The contribution of these other investments is recognised in this analysis, but the impacts are not assessed individually within the analysis.
- This analysis therefore evaluates the total investment in the LEP and complementary programs between 2002-03 and 2008-09, recognising that the outcomes of that investment can be expected to extend beyond the funding period.

**Investment in the collaborative approach**

Table 1.1 outlines the total investment made by LiveCorp covering both LEP activities and those that fall outside of the joint program, and investment by the Australian Government. Total expenditure across all activities over the last three years of the evaluation period—2006-07 to 2008-09—have averaged over $9 million each year. Over the evaluation period, the total investment was $55.4 million.

1.1 **Investment in the LEP, other LiveCorp activities and the LATP**

<table>
<thead>
<tr>
<th>LEP expenditures</th>
<th>LiveCorp</th>
<th>MLA</th>
<th>Government matching for R&amp;D</th>
<th>Total LEP</th>
<th>Other LiveCorp</th>
<th>LATP</th>
<th>Total investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-03</td>
<td>$1.2</td>
<td>$1.2</td>
<td>$0.6</td>
<td>$3.1</td>
<td>$1.8</td>
<td>$0.0</td>
<td>$4.9</td>
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<td>$1.7</td>
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<td>$1.3</td>
<td>$0.3</td>
<td>$3.0</td>
<td>$1.5</td>
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<td>$9.1</td>
</tr>
<tr>
<td>2005-06</td>
<td>$1.3</td>
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<td>$0.5</td>
<td>$3.6</td>
<td>$1.6</td>
<td>$2.4</td>
<td>$7.5</td>
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<tr>
<td>2006-07</td>
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<td>$3.1</td>
<td>$0.5</td>
<td>$4.8</td>
<td>$1.8</td>
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<tr>
<td>2007-08</td>
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<td>$3.1</td>
<td>$0.4</td>
<td>$5.1</td>
<td>$1.9</td>
<td>$2.3</td>
<td>$9.2</td>
</tr>
<tr>
<td>2008-09</td>
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<td>$5.7</td>
<td>$1.9</td>
<td>$1.8</td>
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<tr>
<td>Total</td>
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<td>$15.7</td>
<td>$3.7</td>
<td>$30.0</td>
<td>$12.0</td>
<td>$13.4</td>
<td>$55.4</td>
</tr>
</tbody>
</table>

*a In nominal terms. Totals may not add due to rounding. ** Other non-LEP expenditure made by LiveCorp in support of industry training and extension of LiveCorp research programs and stakeholder management.

Source: LiveCorp accounts and MLA Annual Operating Plans Final reports.
Table 1.1 also shows the investment in the LEP by LiveCorp, MLA and the Australian Government, through the matching of LEP R&D expenditure. Total expenditure attributable to the LEP is estimated to total $30.0 million, in the dollars of the day, over the evaluation period or around 54 per cent of the total invested.

- The total investment amount identified in table 1.1 shows that LiveCorp, working independently of the LEP, over the evaluation period made a total investment of $12 million, in dollars of the day, representing 22 per cent of the total invested.

Other government funds, identified in table 1.1, primarily refer to the so-called Keniry money which was used under the LATP to support practical measures that were designed, directly or indirectly, to ensure the safe disembarkation and handling of Australian livestock in destination ports. These measures include the negotiation of Memorandums of Understandings (MOUs) with governments in the Middle East and other complementary activities including training, education and infrastructure building in destination countries.

Table 1.2 shows that 24 per cent of the total LEP investment is classified as R&D expenditure and the remaining three-quarters as marketing including a range of initiatives required to maintain market access and build demand in destination countries.

### Table 1.2 LEP investment allocation between R&D and marketing

<table>
<thead>
<tr>
<th>Year</th>
<th>R&amp;D $m</th>
<th>Marketing $m</th>
<th>Total $m</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-03</td>
<td>1.3</td>
<td>1.8</td>
<td>3.1</td>
</tr>
<tr>
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<td>2007-08</td>
<td>0.7</td>
<td>4.4</td>
<td>5.1</td>
</tr>
<tr>
<td>2008-09</td>
<td>1.8</td>
<td>3.9</td>
<td>5.7</td>
</tr>
<tr>
<td>Total</td>
<td>7.3</td>
<td>22.7</td>
<td>30.0</td>
</tr>
</tbody>
</table>

*In nominal terms. Totals may not add due to rounding. Includes matching government funding. Includes marketing and market access initiatives.

Source: LiveCorp accounts and MLA Annual Operating Plans Final reports.

Tables 1.1 and 1.2 do not reflect the contribution of other partners. Co-funding partners have included universities, CSIRO, state government departments responsible for primary industries and transport and industry (both exporters and producers, particularly through in-kind support) as well as other Research and Development Corporations (RDCs).

- Co-funding partners typically contribute up to a quarter of the total investment reflecting the additional leverage achieved by LiveCorp funding of its activities.
That is, these partners provide in-kind resources in terms of facilities and professional time that may not be fully costed.

- The Live Export R&D Advisory Committee (LERDAC) provides advice to the Management Committee relating to:
  - the strategic direction and principal components of the R&D Program;
  - project terms of reference;
  - the need for a project consultative committee;
  - R&D funding and expenditure;
  - project approvals; and
  - communication of results to industry.

**Industry performance and operating environment 2003 to 2009**

**Animal welfare**

Mortality is the main welfare indicator used for the livestock export industry, and the industry reports on mortality rates to the Australian Government. Mortality levels on all voyages are reported and if these exceed predetermined trigger levels a full investigation occurs. These levels are two per cent for sheep and 1 per cent for cattle on voyages over 10 days and 0.5 per cent for both species on any voyages under ten days.

Mortality rates, as a proportion of numbers exported have fallen through the decade (chart 1.3).

1.3 **Live export mortalities: 2000 to 2009**

Data source: DAFF, Livestock mortalities for exports by sea.
This reflects a number of factors including regulation (cover a wide range of factors including limiting exports to specific destinations at certain times of year and at maximum stocking densities); industry investment in more efficient transport resulting in reduced travel times (there have been two new ships put into service while a number of older ships have been decommissioned); tailored requirements for specific destinations and implementation of industry standards, training, and building awareness of the profile and quality attributes of the livestock suitable for export.

Export performance

Live exports from Australia are typically supplied to 30 countries, which are primarily in Asia and the Middle East. The livestock are exported for:

- feeding and finishing (for around 90 days in the Indonesian market) prior to slaughter;
- slaughter within country soon after disembarkation; and
- breeding — a small proportion of livestock are exported for breeding purposes — varying between 6 and 14 per cent of cattle (both dairy and beef cattle) and 1 per cent of sheep.

The live trade has developed in response to both overseas demand and competitive livestock prices within Australia. In terms of numbers exported, the trade expanded markedly during the 1990s and early 2000s (chart 1.4), as annual cattle exports to South East Asia rose to 1 million head which added to the historically larger sheep live export trade.

1.4 Live exports of sheep and cattle 1988 to 2009

Data source: Australian Bureau of Statistics (ABS).
There is a much smaller trade in live export of goats, dairy cattle, buffalos, camelids and alpacas. The trade is primarily sea going with a small number transported by air.

Live sheep exports have fallen since 2001 reflecting the overall decline in the Australian sheep flock. This is a consequence of the relatively lower on farm returns from wool production (especially given drought in many production regions), notwithstanding increased returns from sheepmeat production.

The cattle trade since 2000 has been more important than the sheep trade in terms of export value (chart 1.5), reflecting the higher individual value of cattle over sheep. There have been significant year to year variations in the total export value of cattle and sheep reflecting changes in both export numbers and prices received.

1.5 Annual value of the live export trade

The relative significance of the live trade in total sales (live trade plus domestic slaughter) has also varied year to year (see chart 1.6), primarily reflecting changes in export numbers.

Live exports now account for around 9 per cent of total sales of livestock for both cattle and sheep. Increases in exports of live cattle, especially to Indonesia, from northern Australia and poor seasonal conditions in southern Australia have contributed to the strong growth of the trade as a proportion of total sales by the cattle industry.

The declining sheep flock, especially in Western Australia, and the shift away from turnoff of older sheep towards lambs for slaughter have contributed to this declining share of total sales by the sheep industry.
1.6 Live exports as a share of total sales

![Graph showing live exports as a share of total disposals for Lambs and sheep and Cattle and calves.](image)

*Data source: ABS Catalogue No. 7215.0.*

**The value chain**

The acquisition of livestock at farm level is the largest single cost as a proportion of the landed price to the destination market. For cattle, it represents around 67 per cent of the total landed value and 55 per cent for sheep (see appendix A).

- The next largest cost item is sea freight cost representing between 20 and 23 per cent of the landed value of the animal (Hassall and Associates, 2006).

The cash costs that could be associated with complying with the range of industry regulations and standards are small accounting for around 1 per cent of the landed value of an animal. These ‘compliance’ costs include expenditure on:

- third party veterinarians;
- stockmen onboard and at loading and disembarkation; and
- Australian Quarantine Inspection Service (AQIS) charges.

**Market drivers**

The live animal export industry has developed in response to changes in the key destination markets, supply prices ex Australia and improvements in handling and shipping efficiency.

For cattle, the industry has changed from one focused on breeding cattle for herd building, to one primarily exporting feeder and slaughter cattle, to developing regional feedlot industries, in particular Indonesia (ABARE, 2008).
The live sheep export industry has been driven largely by Middle East consumers where there is a preference (on price, culture and market practicalities such as limited refrigeration) for fresh product supported by rising household incomes.

The suitability, efficiency, and availability of ships for livestock export that can satisfy regulators at export and import points, have a significant impact on industry performance, including reduced mortality during transport.

In addition there have been year to year market and policy developments which have affected the trade. The detail of recent developments and market drivers are set out in appendix A.

**Regulatory and institutional structures**

The Australian live export industry is highly regulated throughout the value chain from the farm gate to the disembarkation in the destination country. Appendix B has a more detailed discussion on the regulatory environment facing the live export industry including a summary of the Cormo incident. A substantial regulatory structure has evolved to support the industry in response to past events in its operational history.

**Policy and regulatory oversight by the Australian Government**

This included the establishment of:

- MOUs between Australia and importing countries;
- AQIS as the principal regulatory agency overseeing licensing and accreditation of veterinarians, registered premises (export depots) and exporters;
- AQIS as the regulator of export standards in the live export industry;
  - The Australian Standards for the Export of Livestock (ASEL) are minimum requirements for the export of cattle, buffalo, sheep and goats from Australia.
  - The ASEL are intended to ensure that only healthy animals that meet all animal health and welfare requirements and export specifications are presented for export; and there is considerate management with a minimum of stress and injury at all stages of the export process.
- AQIS as the certifier of importing country import protocols and issuer of export permits,
  - Biosecurity Australia is responsible for the negotiation and establishment of import protocols, AQIS is responsible for the certification of importing country requirements.
  - AQIS issues export permits based on all importing country requirements being met.
State and Territory government legislation

- The Australian and state and territory governments have consulted with industry and animal welfare organisations, on the development of Model Codes of Practice for the welfare of farm animals. These Codes cover both their husbandry and transport.
- The Model Codes are used by the States and Territories to develop their own codes and to set standards which can be prescribed and enforced by legislation.

Performance review of LiveCorp

- There is a Statutory Funding Agreement (SFA) 2007-2010 between LiveCorp and the Commonwealth Government.
- As part of the SFA, LiveCorp is required to submit an independent performance review every three years.
2 LEP, LiveCorp and LATP activities, outputs and outcomes

MLA has established a framework for evaluating the investment that it makes on behalf of industry and the Australian community more generally. This framework can be as readily applied to the LEP since the objective is the same (CIE, 2009a).

This first section provides a brief description of MLA’s evaluation framework.1 Subsequent sections outline the issues relevant to applying the framework to the collaborative approach taken by LiveCorp and MLA.

An overview of the framework

One of MLA’s main stakeholders is government since the Australian Government provides the taxation power to raise levy income and, in the case of R&D, it provides a matching dollar investment. Government is interested in seeing that LiveCorp and MLA funding through levies and R&D grants are having positive impacts on industries and Australian welfare. It is also interested in seeing that LiveCorp and MLA have a process in place to ensure it is achieving the best outcomes possible. Likewise, other stakeholders, in particular levy payers — livestock exporters — want to see that money is well invested.

The framework provides program managers with a tool for considering how research outputs, through adoption by industry or changes in consumer behaviour, can be expected to lead (or have led) to:

- impacts and benefits for live exporting and other industries;
- Australia as a whole; and
- international interests, where relevant.

The framework is applicable to both ex ante (before) and ex post (after) evaluations. The most important concept behind the MLA evaluation framework is the logical mapping from inputs to impacts.

- The framework around translating inputs to impacts is shown in chart 2.1.

2.1 Inputs to impacts

**INPUTS**
The project costs (for example, $1.2 million) spent on promotion

Contribution by others also included separately

Implementation/adoption costs also included

**OUTPUTS**
What the project produces directly:
- for example, marketing campaign run

**OUTCOMES**
What the output achieved directly:
- for example, lift in consumer awareness of 10 points

KPIs developed at this level

KPIs preferred at this level, but no further

---

**5 DIMENSIONS OF OUTCOMES (can be one or more)**

**Demand**
- For example, 10% increase in sales

**Supply**
- For example, 5% reduction in cost

**Risk**
- For example, halve the probability of a disease outbreak

**Environment**
- For example, 25% reduction in processing waste water discharge

**Social**
- For example, halving workplace accidents in processing plants

---

**IMPACTS**
What are the benefits achieved:
- for example, lift in consumer demand by 10 per cent

---

**REPORTS TO STAKEHOLDERS**

Source: The CIE.
Steps in applying the framework to LiveCorp

Each element of the LEP/LiveCorp/LATP activities uses inputs to produce outputs. Outputs typically generate some outcomes, and these outcomes generate impacts that deliver benefits to producers, consumers and the wider community. While LiveCorp/MLA and the Government should have some control over the outputs from the investment, external events will often influence the outcomes and impacts achieved. Identifying the respective contributions is a key challenge in undertaking an evaluation.

- These concepts and their relationship to each other are shown in chart 2.1.

Note that inputs, outputs, outcomes and impacts all have a time profile, which could be different. In some cases the impacts that result from a project will occur with considerable lag, while with others the impacts will be immediate but perhaps transitory if they become redundant or are superseded. It is important to always remember that the terms discussed below have a value at each point in time.

Inputs

Inputs are the investment in the project. These can be ‘in kind’ as well as in cash. The investment in management and organisation is also included. These costs include the LEP, LiveCorp and LATP expenditures and the contributions by others. The implementation/adoption costs (often paid for by individual enterprises within the industry) are also inputs that contribute to achieving outcomes and must be tracked. These costs can usually be estimated and given a dollar value if records are available.

Further, in the case of the collaborative approach, the investment made by governments in helping secure and maintain market access, and to develop and implement regulations is particularly relevant.

- A major factor enabling livestock exports is government involvement to ensure that acceptable animal welfare standards are applied to the satisfaction of the Australian community.

All inputs that contribute to the outcomes being measured should be included in the evaluation.

Outputs

Outputs are the goods and services (including knowledge) that a project produces. For example advisory notes or scientific papers on the effects of heat stress on animals or approaches to pre-shipment feeding of livestock.

Key Performance Indicators (KPIs) are often based on outputs, for example the number of scientific research papers published. Setting outputs as KPIs means that
the activities by each contributor can be held directly responsible for achieving (or not achieving) its KPI. However, meeting an output KPI does not guarantee that a project has led to any changes in practice or behaviour (outcomes).

Some outputs are largely inputs into other projects later in the program lifecycle, and their outcomes can only be evaluated as a part of a cluster of project outputs.

**Outcomes**

Adoption rates are an important guide to outcomes. Adoption provides evidence that producers, processors and other private parties perceive value in using the outputs generated by the LEP, LiveCorp and LATP activities.

- Adoption is an intermediate step between outputs and outcomes — if nobody adopts then there will be no outcome following from the project/activity.
- Some activities that are legislated and enforced – such as use of standards and protocols — will by definition be fully adopted by industry.

Outcomes are the consequences of adoption and/or the influence of the output: they result from changes in practice or behaviour. Outcomes can follow directly from the application, use or influence of the output. For example:

- reduced shipping time resulting from R&D which has improved infrastructure or personnel training;
- reduced animal stress/losses resulting from implementation of best practice standards across the industry (including selection, feeding, stocking density, loading and management) prior to shipment, during shipment and at arrival; and
- additional exports resulting from negotiation of market access.

To compare project outcomes and to estimate the net benefits of the investment, outcomes need to be linked to impacts.

**Dimensions of impact**

The evaluation framework developed for MLA and used by LiveCorp divides the impact of a program into three broad dimensions — economic (demand, supply including changes in the risk of adverse outcomes), environment and social.

Economic impacts comprise impacts observable through market prices (such as access to new markets, lower operating costs, improved likelihood of maintaining market access) as well as so called ‘unpriced impacts’. These latter benefits are not reflected in the prices or returns to business in the live export industry and can include technology spillovers to other industries within Australia and internationally.
For example, where improved knowledge about feeding or transporting export livestock flows through to non-live export sheep feeding strategies or livestock handing within Australia.

Of particular importance are the impacts in terms of animal welfare. Although some of the gain from improved animal welfare will be reflected in live export prices (healthier, better fed animals will attract higher returns) the benefits to Australians generally from knowing that livestock exports are better cared for is not reflected in prices and needs to be included in the analysis.

Other impacts, such as regional impacts and social benefits are termed ‘distributional impacts’. They inform government and others of how the benefits are distributed across the nation or between different social groups in the Australian or international community. In many situations the distribution of economic impacts between producers and consumers or more generally along the supply chain will be of interest and is normally examined within the analysis of economic impacts.

**Demand**

An increase in demand occurs when consumers are either willing to pay more for a given quantity of the product, or they are willing to buy more at the same price, or some combination of these. Some of the LEP, LiveCorp and LATP funded activities aim to increase demand by:

- changing the quality or perceived quality of live exports, for example; age, disease free status, level of stress; and
- improving market access — such as through security of supply; through managing the risks of shipping when supplying seasonal market demand; supplying management technologies to facilitate better animal husbandry in importing countries.

Actual or perceived quality can be changed by factors such as eating quality, consumer attitudes or perceived food safety.

**Supply**

An increase in supply results from a reduction in production costs (at any point in the value chain) due to a change in input mix, cost and/or quality. Suppliers (livestock producers and exporters) are willing to increase the quantity they will supply at a given price or accept a lower price for supplying a given quantity.

LiveCorp and MLA projects might increase supply by enabling a reduction in transport costs, fewer animal losses in transit, or lower cost feed rations. LEP projects might also increase livestock supply in other countries — through the transfer of
technology to importing/other exporting countries as well as directly lowering the cost of livestock production in importing countries.

**Risk**

Many LEP, LiveCorp and LATP activities are aimed at reducing the probability of an adverse event or reducing the cost if an adverse event occurs. The Australian Government has decided on previous occasions to stop live exports to certain markets, with resulting losses to exporters and producers compared to the remaining alternative options for livestock disposal.

A major risk for livestock exporters is future discontinuation, for example, because of real or perceived concerns about the animal welfare aspects of live exports. These impacts fall under the change in risk impact category in the evaluation framework. The key characteristic of a risk is that the event has a probability associated with it (that is, it may or may not happen). The actual impact of an adverse event or opportunity should it arise is usually a change in demand or supply. Activities, including R&D, which aim to reduce risk, can be viewed as an insurance premium aimed at avoiding losses.

A key means of helping manage risk is capacity building. That is, developing the capacity through training individuals, developing R&D staff and facilities and institutions able to identify and respond to emerging or unexpected developments/incidents.

**Animal welfare**

Animal welfare impacts are of particular importance to MLA, LiveCorp and the Government. Improvements in animal welfare have direct economic benefits for exporters and importers and these are incorporated within the economic impacts. More generally, animal welfare concerns Australians at large — Australian’s appear supportive of the live export trade as long as agreed standards of animal welfare are maintained and improvements are progressed.

**Social**

LEP, LiveCorp and LATP activities have potential social impacts. Livestock exporting impacts on specific supply regions providing employment and associated local economic impacts within those regions. Also, Australian livestock exports, particularly live cattle to Indonesia, provide benefits to villages and other communities through subsequent opportunities for value adding through additional fattening of cattle.
3 Activities, outputs and outcomes from the LEP, LiveCorp and LATP

The LEP

The LEP has four strategic imperatives.

- Ongoing improvement in animal welfare outcomes.
- Improve industry efficiencies, capabilities and livestock performance through the supply chain.
- Build Government and community support for the industry and increase stakeholder awareness and satisfaction.
- Improve market access conditions and build demand for Australian livestock.

These imperatives are delivered through the following six programs summarised in table 3.1.

3.1 Key areas of LEP investment

<table>
<thead>
<tr>
<th>Area of investment and description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle East and Africa</td>
</tr>
<tr>
<td>The LEP works with the many cultures across a number of the Middle Eastern countries to implement programs that improve the welfare of Australian animals exported to the region. The animal welfare program is concentrated in the Middle East and Africa. Activities have included training and education of stockmen, veterinarians and people who handle Australian animals and by improving infrastructure to ensure welfare standards for Australian animals during local transport, in feedlots and marketplaces overseas. Gathering market intelligence and providing support to exporters and government to address market access issues also are key roles of this program.</td>
</tr>
</tbody>
</table>

| Asia Pacific                           |
| The LEP delivers programs across the Asia Pacific with a significant concentration on Indonesia, the largest market. The two major program areas are animal welfare and technical support. Projects are delivered to address animal welfare issues including animal handling workshops and the installation of infrastructure at the point of slaughter such as unloading ramps, pens, raceways and restraint devices. Technical support is delivered to assist the importers of Australian livestock improve the performance of these animals in feedlots and breeding operations. Marketing and education campaigns to improve the demand for beef from Australian cattle are undertaken at both retail outlets and wet markets. Market access activities to provide improved access in existing markets and to provide opportunities in new markets are also an important aspect of this program. |

(Continued next page)
3.1 Key areas of LEP investment (Continued)

### Area of Investment and description

#### Industry capabilities

The Australian livestock export industry operates under stringent government regulation. The LEP has dedicated resources to assist industry meet those regulatory requirements and to help improve regulation and regulatory process through objective analysis and rigorous scientific evidence. The Industry Capability function provides essential services to the industry through management and review of industry standards; development and maintenance of industry guidelines and managing industry systems that assist exporters in meeting their regulatory requirements.

#### LiveCorp services

The LiveCorp Services Program provides specific assistance to individual livestock exporters through the maintenance of industry tools and services to:

- enable compliance with legislation and to complete risk management assessments;
- assist with breed certification and other customer country requirements;
- training of industry members and stakeholders including stevedores, stockmen and vessel crew;
- managing the industry Emergency Management Plan and response capacity; and
- providing collaborative support and consultation to industry stakeholders such as LiveAir and LiveShip.

#### Research and development

The LEP maintains a strong commitment to R&D and implementing R&D findings that improve animal welfare. Its aim is for excellence in animal welfare and management throughout the supply chain from farm to destination. It is important that all industry standards are founded on rigorous scientific evidence. R&D priority setting has emphasised embracing best practice, long-term profitability, productivity gains and R&D outcomes for the industry that constantly improves animal welfare.

#### Communicating with the Australian community

The LEP delivers a range of proactive communications campaigns that improve the community and government awareness of the trade and improve support for the industry. The program is also focused on the management of industry issues so that there is balance and accuracy in reporting through addressing any misinformation that is provided that may create negative perceptions of the industry. The communications programs aim to provide stakeholders with timely and accurate information on LEP program activities, statistics, market intelligence and R&D outcomes.

*Source: LiveCorp and MLA.*

The scope of outputs and subsequent outcomes that have resulted from these LEP activities are presented in table 3.2.

### LEP outputs and outcomes: 2002-03 to 2008-09

<table>
<thead>
<tr>
<th>Output</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongoing animal welfare</td>
<td></td>
</tr>
<tr>
<td>Delivery of animal handling training workshops conducted in the Middle East and Asia targeted at those handling Australian livestock</td>
<td>Increased number of people with improved livestock handling and animal welfare skills</td>
</tr>
<tr>
<td>Development of training materials to support animal handling and management practices.</td>
<td>Livestock handler skill levels improved following delivery of livestock handler training</td>
</tr>
<tr>
<td>Implement infrastructure improvements at</td>
<td>Increased understanding of animal welfare requirements through the supply chain</td>
</tr>
<tr>
<td>- Discharge ports and lairage</td>
<td></td>
</tr>
<tr>
<td>- Point of slaughter</td>
<td></td>
</tr>
<tr>
<td>- Restraining boxes for cattle in Asia</td>
<td></td>
</tr>
<tr>
<td>- Sheep tables in the Middle East</td>
<td></td>
</tr>
</tbody>
</table>

(Continued next page)
### 3.2 LEP outputs and outcomes: 2002-03 to 2008-09 (Continued)

<table>
<thead>
<tr>
<th>Output</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ongoing animal welfare</strong></td>
<td></td>
</tr>
<tr>
<td>Implement programs that assist feedlot operators to manage livestock sales during Eid Al Adha.</td>
<td>Increased number of people with improved livestock handling and animal welfare skills</td>
</tr>
<tr>
<td>- Implement policies that prevent the trussing of livestock and car boot sales for any livestock sold from the feedlot.</td>
<td>Increased in the number of animals handled and managed appropriately.</td>
</tr>
<tr>
<td>- Provide support for the implementation and enforcement of the policy.</td>
<td></td>
</tr>
<tr>
<td>Development of an industry emergency management plan</td>
<td>Ability to identify and address animal welfare issues in a timely manner</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Market access</strong></td>
<td></td>
</tr>
<tr>
<td>Monitoring market access and trade conditions through regular communication with relevant foreign government authorities, Australian government departments, importers and destination country stakeholders throughout the region and in Australia</td>
<td></td>
</tr>
<tr>
<td>- Market access issues are identified and addressed in a timely manner.</td>
<td></td>
</tr>
<tr>
<td>- Improvement in importing country protocol requirements</td>
<td></td>
</tr>
<tr>
<td>- Strong relationships with foreign Governments are maintained</td>
<td></td>
</tr>
<tr>
<td>- Increase in the number of market options available</td>
<td></td>
</tr>
<tr>
<td>- Market intelligence – gathering and reporting</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technical support</strong></td>
<td></td>
</tr>
<tr>
<td>Conduct training programs and provide technical expertise:</td>
<td></td>
</tr>
<tr>
<td>- Animal husbandry</td>
<td>Increased livestock performance through the delivery of new innovations, improved practices and procedures</td>
</tr>
<tr>
<td>- Feedlot nutrition</td>
<td>Increased number of people with improved livestock management skills.</td>
</tr>
<tr>
<td>- Animal health</td>
<td>Increased satisfaction and awareness and of the benefits of Australian livestock</td>
</tr>
<tr>
<td>- Breeding livestock management</td>
<td>Above average satisfaction rating of LEP training activities by recipients</td>
</tr>
<tr>
<td>Review and develop industry position papers on proposed improvements to industry standards and regulatory requirements. Ensure all required supporting materials are developed.</td>
<td></td>
</tr>
<tr>
<td>- Improved efficiencies in the regulatory framework and industry management systems</td>
<td></td>
</tr>
<tr>
<td>- Government recognises industry’s ability to deliver balanced and professional advice and papers</td>
<td></td>
</tr>
<tr>
<td>Develop guidelines and best practice material to underpin export standards.</td>
<td></td>
</tr>
<tr>
<td>Review the effectiveness and efficiency of export infrastructure and certification systems across the domestic supply chain.</td>
<td></td>
</tr>
<tr>
<td>Review the effectiveness of the current export certification process.</td>
<td></td>
</tr>
<tr>
<td>Train and equip stockmen, employees and other service providers to meet all the regulatory and industry requirements for the livestock export process.</td>
<td>Increased number of people with improved livestock management skills.</td>
</tr>
</tbody>
</table>

(Continued next page)
3.2 LEP outputs and outcomes: 2002-03 to 2008-09 (Continued)

<table>
<thead>
<tr>
<th>Output</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;D</td>
<td></td>
</tr>
<tr>
<td>Benchmarking study of Australian livestock export standards</td>
<td>Demonstrating that Australia has the world’s highest livestock export standards in terms of both coverage (species and phases of transportation) and capacity to deliver acceptable outcomes (animal welfare standards)</td>
</tr>
<tr>
<td>Development of best practice guides, training materials:</td>
<td></td>
</tr>
<tr>
<td>▪ Tips and tools in livestock selection</td>
<td>Improved quality of livestock entering the supply chain</td>
</tr>
<tr>
<td>▪ South East Asian Feedlot manual</td>
<td>Increased livestock performance through the delivery of new innovations, improved practices and procedures</td>
</tr>
</tbody>
</table>

Source: Personal Communication MLA 13 July 2010.

Other LiveCorp activities

LiveCorp’s value-adding role supporting its exporter members and to other livestock exporter industry stakeholders focuses on:

▪ industry policy implementation as determined by the Australian Livestock Exporters Council (ALEC);
▪ communication, relationship management and consultation with industry and government stakeholders in Australia and in customer countries;
▪ representation and support of exporter members on broader industry committees, taskforces and at stakeholder meetings;
▪ maintaining and utilising relevant industry data and information;
▪ management and investment of levies paid by exporters for current and future support and development of the industry; and
▪ support and development of the industry.

Table 3.3 lists LiveCorp’s outputs and outcomes for the evaluation period.

3.3 LiveCorp outputs and outcomes: 2002-03 to 2008-09*

<table>
<thead>
<tr>
<th>Output</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular communication with the Minister’s office and Department to ensure timely and effective understanding and responses to industry activities, direction, issues and performance.</td>
<td>Positive statements and support for industry direction and programs.</td>
</tr>
<tr>
<td>Member Communications - Delivery of relevant and timely information to members.</td>
<td>Clear knowledge, understanding and engagement with industry to ensure appropriate policy and operational decisions for whole of industry matters.</td>
</tr>
<tr>
<td></td>
<td>Members that are informed about industry and company developments, that have received enough information to allow them to prepare or change appropriately and are satisfied with the service from their company.</td>
</tr>
</tbody>
</table>

(Continued next page)
### 3.3 LiveCorp outputs and outcomes

<table>
<thead>
<tr>
<th>Output</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing LiveCorp’s relationship with the broader livestock and agricultural production sectors.</td>
<td>▪ Strong working relationships with producer peak councils and MLA which results in continued support and investment into the LEP.</td>
</tr>
<tr>
<td>The AOP is developed which clearly outlines programs to be undertaken during 2009 – 2010</td>
<td>▪ The Statutory Funding Agreement requirements for the AOP are met.</td>
</tr>
<tr>
<td>▪ Industry support and commitment to the AOP.</td>
<td></td>
</tr>
<tr>
<td>To coordinate agreed investments of exporter dairy levies to help support and grow the trade in dairy cattle.</td>
<td>▪ Programs deliver clear benefits to the industry.</td>
</tr>
<tr>
<td>Market development and support of existing dairy export markets through development and extension of in-market support materials developed through R&amp;D; delegation support to Australia and in-market visits.</td>
<td>▪ Member and dairy industry satisfaction with regards to the future direction and operations of dairy cattle exports.</td>
</tr>
<tr>
<td>▪ Strong demand from a range of markets for Australian dairy cattle.</td>
<td></td>
</tr>
<tr>
<td>▪ Post arrival management of dairy cattle is suitable and the welfare of the animals is not compromised.</td>
<td></td>
</tr>
<tr>
<td>Promotion of the livestock export industry as a valuable market option for Australian dairy producers.</td>
<td>▪ Extension programs delivered in China, Russia, Middle East and SE Asia</td>
</tr>
<tr>
<td>Seek opportunities to develop co-investment in projects with Dairy Australia</td>
<td>▪ Producers identify livestock exports as a long-term, market for surplus livestock or a market to breed specifically for.</td>
</tr>
<tr>
<td>▪ Any issues are raised and managed in a timely and effective manner.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Personal Communication MLA 13 July 2010.

**Indicators of benefit from LEP and LiveCorp outputs**

Further, the LiveCorp performance reviews indicate strong recognition that LiveCorp (through its activities in delivering services under the LEP and directly) was providing industry benefits.

- Many stakeholders consider that LiveCorp is providing value to the industry at large across a range of areas (box 3.4).

### 3.4 The 2007 LiveCorp Performance Review

The review (covering the period 2005 -2006) drew the following conclusions with respect to LiveCorp (which relate primarily to the LEP).

**Overall**

Many stakeholders consider that LiveCorp is providing value to the industry at large across a range of areas. Some individual companies, mainly larger and more established ones, tend to see the direct value provided to them as being less than that provided to the industry overall. Many such exporters have been very active over
3.4 **The 2007 LiveCorp Performance Review** (Continued)

several years in developing their own trade information, market contacts and systems and procedures. As a consequence they have received less benefit from LiveCorp activities in these areas.

Organisations in the Northern Territory were somewhat less positive about the performance of LiveCorp, although they acknowledge that LiveCorp is trying hard to better engage with them. There was also very high regard for MLA in the NT suggesting that the joint involvement of LiveCorp and MLA in certain live export activities is not fully recognised. LiveCorp should address this apparent misunderstanding about its role with some targeted communication activities.

**Market access and trade support**

There is very positive support for the joint program activities in Asia (especially Indonesia). Most respondents described the Middle East/Africa as a more difficult area to manage than Asia, but conveyed the perception that LiveCorp/MLA activities in the Middle East are gradually delivering benefits to the industry.

**Technical services**

These are seen as a vital function and, in the words of one company representative, the ‘key interface’ between LiveCorp and its members. Yet opinion is divided as to LiveCorp’s performance in this area. Some members reported that Technical Services is accessible, rapidly responsive, ‘follows up’ and makes great efforts to resolve problems. Others are dissatisfied, citing poor communication, low responsiveness and an inability to deal robustly with AQIS as major problems.

**Research & development**

Consistent with the findings of the review of the industry’s R&D portfolio in 2006, the consultation process for this review found that stakeholders generally support R&D and perceive improvements in management and performance in recent years. However, a number of industry players are seeking a more pragmatic approach to R&D.

**Communications**

The vast majority of stakeholders acknowledged that LiveCorp have been working hard to improve performance in this area. Interviewees were particularly positive about LiveCorp’s (and the industry’s) policy of active public engagement.

Similarly the 2010 Review (covering 2007 to 2009) reported that stakeholders saw value in LiveCorp’s services. The following comments were made in terms of the value of LiveCorp by stakeholder companies.

- Very high, LiveCorp is the ‘turn to’ organisation for our industry for data and analysis.
- Market information provided by LiveCorp is very good.
- Technical guidance provided to the Australian Veterinary Association is valued.
- R&D and industry services for Indonesian market are excellent.

LiveCorp programs compare well with other MLA offerings, their culture is cooperative and there is a sensible alignment of roles.

LiveCorp’s after sales support in the country of destination is of value to our business.

They provide us with access to Government and an understanding of how government works.

Poor value, LiveCorp is much too focussed on the ‘big 6’ exporters.

In terms of value to live export industry, the following comments were made.

In the old AMLC days support for the industry was an ‘after thought’. If there was an industry issue you might get an economy ticket to the market to have a look. Now we have a dedicated organisation that is backed by research and real networks and knowledge on the ground.

Protocol negotiation work is excellent, currently hosting a Vietnamese delegation that will learn about our Blue Tongue surveillance systems.

LiveCorp do a good job on issues management.

LiveCorp is a catalyst for the trade and they deliver the right service.

The Company’s work has resulted in less criticism of the industry on welfare grounds.

The LiveCorp management team are all ex-Elders, the industry needs to identify other talent and consider other ways of doing business.

LiveCorp’s value to the industry includes countering the animal welfare lobby, with in-market programs in Indonesia and the Middle East and the ‘hot stuff’ application to various destinations.\(^2\)

**LATP**

The Australian Government and the livestock export industry have worked with overseas countries to improve animal welfare practices. Following the broad-ranging investigation in 2003 into Australia’s livestock export industry chaired by Dr John Keniry, the government announced initiatives to improve animal welfare conditions in the livestock export trade including funding for a range of improvements, including better infrastructure to reduce livestock stress or injury and training for feedlot, abattoir and transport staff in overseas markets under the LATP.

Under the LATP the Government and the livestock export industry have worked cooperatively with trading partners in the Middle East region to address post-arrival welfare concerns and to improve the transportation, handling and slaughter practices

for livestock in overseas markets. The Government has jointly funded a number of projects with the live export industry (through the LEP) and other interests to improve infrastructure and training to promote better animal handling and slaughter practices. Australia is the only country that requires specific animal welfare outcomes for livestock exports. This ongoing involvement in the trade is cited as having provided a significant opportunity and leverage to influence animal welfare conditions in importing countries more generally.

Australia's relationships with key livestock export destination countries in the Middle East and North Africa region have improved greatly in recent years. This is primarily as a result of Australia's commitment to implement MOUs on live animal trade with these countries and the placement of an agricultural counsellor in the Middle East/ North Africa region.

Australia has signed MOUs with eight countries in the Middle East and North Africa region and negotiations continue with other trading partners in the region.

- A key element of these MOUs is the focus on animal welfare. Specifically, animals can be unloaded on arrival regardless of their health status.
- The MOUs also allow Australia to help our trading partners improve post arrival handling and slaughter through cooperative activities based around improving animal welfare.

The following MOUs, concerning the live animal trade, are in place:

- Trade in Live Animals between the Government of the Arab Republic of Egypt and the Government of Australia, signed on 3 October 2006;
- Handling and Slaughter of Australian Live Animals Between the Government of the Arab Republic of Egypt and the Government of Australia, signed 3 October 2006;
- Trade in Live Animals between the Great Socialist People's Libyan Arab Jamahiriya and The Government of Australia, signed 7 May 2007; and;

The MOUs generally focus on managing the risks of Australia's exported livestock being rejected on arrival at the destination and provides general assurances relating

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to the health, welfare and safety of the livestock exported. The MOUs are supported by efforts to improve post arrival animal welfare through the LATP and the new Live Trade Animal Welfare Partnership.

The LATP has funded a range of improvements, including better infrastructure to reduce livestock stress or injury and training for feedlot, abattoir and transport staff in overseas markets. For example projects undertaken in Egypt and Libya focussed on capacity building and infrastructure improvements including training of staff in OIE standards for animal welfare, including correct animal handling and transport procedures.

**Conclusion**

At the aggregate level these changes, together with other industry and government investment, policies and programs, have resulted in:

- a continuation in the live export trade when, following the Cormo and other earlier incidents, there was the high likelihood that live exports would have ceased or been significantly curtailed;
- growth in Australian live exports of sheep, cattle and goats relative to the case ‘without the LEP/LiveCorp and the LATP’;
- a marked drop in mortality during transport — both on-board and onshore within market;
- regulation which had addressed market demands and practical livestock transport at the same time as meeting Australian community animal welfare concerns;
- a recognition by the Australian government that the industry has been able to successfully address animal welfare and ensuring continuing support from the Australian Government for the trade;
  - Noting that governments across all jurisdictions have recognised the achievements of the industry and continued to support live exporting of all species.
  - Community favourability for the trade is above those against the trade. Those in favour of the trade recognise the economic benefits to the Australian economy.
- continuing support from the Australian Government for the trade:
  - noting that governments across all jurisdictions have recognised the achievements of the industry and continued to support live exporting of all species;
- restructure of the northern beef industry driven by the improved profitability offered by live exporting with consequent gains for producers both here and everywhere else in Australia; and
Industry consultations reinforced these views, although in general many in production and industry services industries found it difficult to disentangle the respective outputs and subsequent gains from the LEP/LiveCorp/LATP.

**Causation and attribution**

Given both the nature of the outcomes and the range of interests involved in helping achieve them, determining the otherwise case (industry supply without the collaborative approach) and the respective contributions of each of the parties to this collaboration presents a challenge for this analysis.

There are a range of circumstances and investments that have helped secure the above outcomes.

- The LEP investment through LiveCorp and MLA; Government matching of the LEP R&D investment; other LiveCorp activities; the LATP and other Government support through policy development.
- The SFA between the Australian Government and LiveCorp which specified Government (that is, the Australian community) requirements for continued improvements in animal welfare, in particular.
- Mandatory funding of LiveCorp, a broader charter for it to provide industry services with virtually total industry membership of LiveCorp.
- Support from the exporter association (ALEC) and producer associations — Cattle Council of Australia, Sheepmeat Council of Australia and the Goat Industry Council of Australia.
- Increased regulation and monitoring by AQIS and other Australian Government agencies which has reduced the risk of another significant trade disruption and ensured that the practices of live exporting reflected the assessed risks such as distance, time of year (heat) and other factors.
- Industry restructuring through a licensing system with the result that only those live exporters with the capacity to comply with the additional regulation and deliver against best practice standards have continued in the industry.
- Market circumstances which saw some traditional live exporting counties cease exporting for policy reasons (New Zealand) or reduce exporting given local supply and demand conditions.
- Increasing incomes in some importing countries, particularly Indonesia, coupled with a preference for fresh beef supply resulting in increased demand for live imports particularly feeder cattle.
• Australian and other foreign aid which has supported development and expansion of improved production and meat processing in importing countries with greater focus on better animal handling and welfare practices.

• Investment from within the live export industry in terms of training, infrastructure, road transport and ships which markedly improved animal welfare through faster transport times as well as improved on board feeding systems, management and air flow.

**LEP/LiveCorp and the LATP**

However, it is probable that the LEP and other investments in their own right has made a major contribution to maintaining and expanding the trade, although it is difficult to isolate its effect from those of these other investments.

• An expanded focus and commitment from the industry to the LEP enabled the Government to support live exports since the LEP offered a robust basis for managing the risks in live exporting.

• The data, analysis and planning that has resulted has meant that the Government has continued to support the live exporting industries.

In the absence of the LEP/LiveCorp and the LATP it is likely that live exporting would have continued to some degree.

• Some exporters supplying some markets would likely have been able to make a case to the Government that they could manage the risks involved and maintain levels of animal welfare expected by the Australian people.

• AQIS and other agencies would have permitted such exports on a case by case basis.

In addition to enabling the trade to continue, the LEP/LiveCorp and the LATP has helped exporters hold and develop new markets, reduce costs and generally improve productivity.

**Live exports with and without the LEP/LiveCorp and the LATP**

In the absence of the LEP/LiveCorp and the LATP live exports of cattle, sheep and goats in aggregate would have been at significantly lower levels.

• As noted, without concerted action by the industry through the LEP/LiveCorp and the LATP, the most likely impact on the live export industry would have been that the Australian government would have heavily restricted licences and/or permits to export.

• The Australian Government, through AQIS, would have permitted such exports only on a case by case basis.
Cattle

The impact of the LEP/LiveCorp and the LATP on the live cattle trade is illustrated in chart 3.5. In this case, it would be expected that export to the Middle Eastern markets would be most affected. This is because:

- the transport distance is longer (greater than ten days) with increased probability of heat stress; and
- there have been ongoing welfare concerns about the treatment of animals at disembarkation.

3.5 Estimated live cattle exports: With and without the collaborative approach

Currently Indonesia is the mainstay of the Australian live cattle export trade. It has a number of unique features compared with other markets.

- The animals exported are mostly younger feeder types with that category having a maximum weight specification of 350 kilograms.
- There is a significant degree of vertical integration and strong commercial relationships involved from Australian breeding properties through to Indonesian feedlots and subsequent processing and sale in wet markets.
  - This trade is dominated by the larger live export companies who would be dealt with first by the Australian authorities and would have the resources to meet compliance requirements within a reasonably short timeframe.
- The transport distance is short haul of less than 10 days.

The key features of chart 3.5 are:

- the Indonesian trade would have recovered quickly through the action of industry players and would get back to observed levels within two years;
- this could take much longer for Malaysia because of the nature of the trade (up to five years) due to the price sensitivity of that market (and hence continuing supplies from other live exporters such as Cambodia and Laos);

- all trade to Middle Eastern markets would be banned as the government ceased to issue export licenses to those markets.

- A key driver of this assessment is the perceived risks around the transport distance and concerns about post-arrival handling and slaughter practices.

- This assessment is also based on the prevailing market structures in the key markets for cattle in the Middle East. This includes the scope for these markets to source cattle from other countries and the absence of integration between customers in those markets and Australian exporters through ownership or strategic alliances (when compared to the live sheep trade).

Across all markets, total numbers exported could have fallen by 60 per cent in 2004 and then recovered after three years to levels that are around 75 per cent of those that were observed.

**Sheep**

The impact of the LEP/LiveCorp and the LATP on sheep exports has been assessed to result in significantly different outcomes than that for cattle (see chart 3.6). From 2004 onwards, the export of slaughter sheep to the key Middle Eastern markets would have initially fallen by 2.4 million sheep from pre-Cormo levels. In absence of a collaborative approach, it has been assessed that exports of live sheep would have fallen steadily through to 2009, reflecting ongoing uncertainty, throughout industry and government, around the impact of another adverse event on the trade.

**3.6 Estimated live sheep exports: With and without the collaborative approach**

*Data source: CIE estimates.*
By 2009, total exports of sheep may have been 3.4 million lower than in the observed case, after which the trade is assumed to largely stabilise around exports of only 1.3 million sheep annually.

Because the Cormo incident was concerned with the failure of Australian sheep to be permitted to disembark in Saudi Arabia, it is likely that the Australian Government would have ceased to issue export licenses to the market for the foreseeable future.

The impacts on other markets are less straightforward — an assessment has been made on the basis of the consideration of a number of inter-related factors that would have been in play at the time.

- A factor would have been the risk assessment made by the Australian government on the transport risk and the conditions of livestock handling within each of the markets.
  - Certainly Saudi Arabia would have been assessed as a high risk destination.
  - In absence of negotiated MOUs and the ASEL, there would have been significant regulation at an individual shipment level including the development of voyage management plans and use of on-board government staff. These requirements would be high cost.

- Another factor would be the level of demand for Australian product and the degree of integration between Australian exporters and customers in each market. That is, some countries may have made representations at government level for re-establishment of the trade.
  - Strategic alliances and direct ownership of Australian live export operations would have ensured ongoing exports to certain markets.
  - For some markets such as Kuwait, Bahrain and Qatar there would have been strong diplomatic representations to maintain the trade to some degree because of the importance of Australia’s bilateral trade relationship in helping meet local food security priorities (particularly in the interests of foreign guest workers).
  - These governments subsidise meat prices through the presence of a price cap to ensure affordable meat. Availability of sufficient sheep would be crucial in maintenance of these arrangements. Alternative sources of sheep, particularly from Northern Africa, would not have been substitutes for Australian sheep.

- Owners of the shipping fleet dedicated to the live trade would have pushed for the maintenance of the trade to ensure capacity utilisation and so protect their investment in the short term.

Consultation with industry and government revealed that while sustained demand for Australian sheep may have kept the trade open to the majority of the key markets — uncertainties around the possibility of another adverse event would have stifled investment in the industry at all points of the industry.
This includes the infrastructure within Australia to source and aggregate sheep, the requisite investment in shipping capacity, and improved disembarkation and slaughter facilities within destination markets.

Without the certainty provided by the collaborative approach, the investment that was observed would not have happened, leading to a gradual decline in export numbers as:

- Middle East markets would have moved to other sources of supply including sheep from South America and North Africa and possibly to other sources of protein such as subsidised meat exports from the European Union; while
- shipping operators would have directed their capacity to these other live sheep sources.

**Exports of breeding stock and live goats**

The breeding stock trade, including beef and dairy cattle and sheep, would have been much less affected *without the LEP/LiveCorp and the LATP*.

- The high individual value of breeding animals already meant that there was a high level of attention to animal welfare issues.
- This is especially in the case of export of dairy heifers from Victoria, that currently receive a substantial premium over comparable animals sold on the domestic market.
- Even so, export numbers of all breeding stock fell during the 2005-2007 period, in parallel with the overall fall in cattle exports.

Currently over 80 per cent of goats intended for slaughter overseas are exported via air freight rather than by sea.

- This trade is perceived quite differently by policy makers in government and the wider community to the slaughter trade.

Therefore it has been assumed that the collaborative approach taken by LiveCorp and its partners has not had any significant impact on the export of breeding animals and goats – and has not been quantified in this evaluation.

**Benefits of the collaborative approach beyond the evaluation period**

The quantification of the benefits from the collaborative approach must also account for any benefits that may flow beyond the evaluation period. That is, the question is asked: if funding of the program ceased in 2008-09, what would be the likely benefits beyond that time? The size and time path of these benefits largely depends of the composition of outputs being delivered.

As identified in chapter 3, LiveCorp and the LEP mainly work to maintain ongoing markets with a focus on animal welfare. This is primarily a defensive strategy. The
benefits of the protocols and export standards that have been developed over the evaluation period are now everyday practice for industry and act as insurance policy against adverse events such as the Cormo incident.

- Without LiveCorp, the majority of these benefits would be expected to be ongoing for the foreseeable future for existing export markets.

Beyond 2008-09, LiveCorp would also be expected to provide the same required infrastructure for the live export industry to access any new markets. The development of these new markets by the industry has not been accounted for in the ‘without’ scenarios identified above and only accounts for existing markets. Therefore, the analysis already represents a conservative approach to quantification of benefits.

However, LiveCorp and the LEP also conduct some active promotion and marketing – which has been limited to the Indonesian beef market for the last 3 years of the evaluation period. At $0.5 million annually, this is a relatively small expenditure item (around 5 per cent of the total expenditure for those years) which focuses on promotion of beef in Indonesian fresh markets.

- In the ‘without’ case, the impact of this expenditure would be expected to diminish over time. But it is expected that the benefits of these outputs are very small relative to the maintenance of access to markets.

- There are no corresponding promotion activities or expected impacts for other cattle or sheep destinations outside of Indonesia.

For this analysis, the benefits from maintenance of market access to existing live cattle and sheep markets have been assumed to persist through at least to 2014-15 (6 years beyond the evaluation period) in all markets accept for Indonesia.

- In the case of the Indonesian market for Australian live cattle, the market access component of the program is also assumed to persist through to 2014-15 and continue to deliver the majority of benefits from that market.

- But the impact of promotional activities is assumed to deliver a maximum of a 3 per cent increase in demand for Australian cattle for this market which then fall away quickly without recurrent funding from 2008-09 onwards.

**Live export and producer returns and costs with and without the LEP**

The LEP/LiveCorp and the LATP has had four broad areas of focus:

- Middle East and Africa;
- Asia Pacific;
- Industry Capabilities and LiveCorp Services; and
- R&D.
Within each of these areas specific projects have helped exporters achieve larger, more rewarding export markets or lower supply costs for exporters/producers.

- Maintenance of low mortality rates, especially during voyages, in contrast to the preceding decade.
- Mortality would have been higher in the absence of regulation, best practice standards and guidelines, and industry investment all guided by LEP research (heat stress models in particular).
- One analysis attributed 10 per cent of the continuance of sheep and cattle exported to long haul destinations since 2003-04 to development of the heat stress model.  

As well as improving animal welfare, lower mortality is a direct cost saving to exporters. Each 0.1 per cent reduction in mortality is worth an estimated $0.5 million to live sheep exporters and $0.3 million live cattle exporters.

Chart 3.7 illustrates recent trends in live export mortalities.

3.7 Live export mortalities: 2000 to 2009

Data source: DAFF, Livestock mortalities for exports by sea.

---

4 Quantifying the benefits

A key element in the evaluation is to translate the difference between the observed case and the baseline back to:

- benefits to exporters, live export producers and the rest of the Australian cattle and sheep industries;
- the Australian people through knowing that animal welfare has been improved; and
- consumers and producers in importing countries.

Exporters and producers for live export markets

At the aggregate level the gains to exporters and producers can be viewed as the difference in the live export industry gross value of production (GVP) between the observed and baseline scenarios. Using the data presented above for the observed and the baseline, and average FOB values in each year, the difference in GVP for the seven years (2003-2009) is estimated at $1 446 million (chart 4.1).

This represents the impact of the LEP/LiveCorp and the LATP program in the first instance — before accounting for market interactions and attribution between

4.1 Increase in live exports GVP as a result of the collaborative approach\textsuperscript{a}

\begin{center}
\begin{figure}[h]
\centering
\includegraphics[width=0.7\textwidth]{chart4.1}
\caption{Increase in live exports GVP as a result of the collaborative approach} \textsuperscript{a}
\end{figure}
\end{center}

\textsuperscript{a} At free on board level.
\textit{Data source:} LiveCorp and CIE estimates.
contributors to the overall outcome. However, the simple comparison of gross values masks the changes in *net income* to exporters and producers for the live export trade:

- the *net change in exports/producers incomes* recognising that live exports would in large measure be diverted to meat processing; and, also
- the *flow-on profitability effects, through lower prices, on other producers* in the Australian sheep and cattle industries if live exports were diverted to meat processing.

As a result of the LEP/LiveCorp and the LATP the additional live exports will have increased the net income of exporters and live export producers from exporting.

- But the extent to which overall net farm income has been increased depends upon the relative returns from live export sales compared to selling the same animals for processing on the domestic market.
  - Simple comparisons of average ex-farm selling prices for live export and other sales, for example, do not enable such a comparison as often the mix of sales (ewes, lambs, wethers) differs and quite different production systems are involved, notably in the Northern beef industry.
- Prices for all stock sold in Australia will be higher because of the higher level of live exports.
- Given that lamb and mutton is not a perfect substitute for live imports in the markets importing live animals, the increase in live exports will have increased the demand for Australian sheep and cattle, thus lifting prices across the board. All producers in Australia will have thus benefitted to some degree from the LEP/LiveCorp and the LATP.
  - Box 4.2 explains in more detail the impact of closure of live markets.
- It is also expected that the LEP/LiveCorp and the LATP has resulted in lower costs and greater efficiency for exporters compared to the without LEP/LiveCorp and the LATP case.

Limiting mortality on live export voyages has been a major focus of the LEP/LiveCorp and the LATP and other industry and government programs. As well as animal welfare issues, mortality is a cost to live exporters.

- Since 2003 mortality levels have fallen. The value of this lower mortality level for live exporters over the 2002-03 to 2008-09 period is estimated to total around $11 million (tables 4.3 and 4.4).

As already noted the reduced mortality since 2003, especially compared to the earlier decade, reflects a range of factors, the application of LEP/LiveCorp and the LATP being one of them.

- Regulation reduced the risk of mortality through limiting when animals could be shipped and on-board stocking rates.
4.2 Impact of closure of live markets

ABARE has noted there is limited scope for Australian meat products to substitute for live exports in the live markets supplied. If Australia were to restrict live exports it is likely that there would be significant regional economic effects, particularly on the cattle industry of western and northern Australia and the sheep industry of Western Australia.

It is generally accepted that there would not be a 100 per cent transfer of the industry from live animal sales to their meat equivalent, despite the potential that currently exists for sheep meat. This would result in a loss of farm income to producers currently specialised in the trade of live animals. The quantification of these potential economic losses was beyond the scope of that study.

For beef, the prospects for increased sales of carcasses and boxed beef to south east Asia and the Middle East appear limited. Challenges to be addressed include the lack of access to storage and refrigeration by a large proportion of the south east Asian populations. In addition, there are currently no halal certified abattoirs in the northern cattle producing region that could supply these markets.

The prospects for selling meat domestically from animals reared in the north and west also appear limited. The cattle reared for live export from the west and north are Bos indicus breeds. The meat from these animals is not what is demanded by Australian beef consumers. Meat from these animals is therefore unlikely to command a high price domestically.

Without a market for live Bos indicus breeds, producers may return to a form of production that existed prior to the opening of the south east Asian and Middle Eastern markets — producing cattle for low quality manufacturing beef that commands a relatively low price.

For sheep, the potential for the domestic market to absorb the surplus supply caused by a cessation in live sheep exports is limited. Domestic consumption growth may be affected by price declines in the short term but long term growth is largely related to population growth. Consequently, initiatives to supply halal sheep meat to foreign markets would have to be pursued more aggressively and the price of the product would have to fall in order to compete with lower priced competitors such as China and Uruguay.

Unlike south east Asia, the Middle East is not as restricted by its food distribution system in terms of refrigeration. However, strong cultural preferences for fresh meat will continue to drive demand for livestock in the region and this demand is likely to be met by alternative suppliers, such as north Africa, rather than through a surge in frozen sheep meat imports.

Source: ABARE (2008a).
4.3 Estimated benefits to live cattle exporters from lower voyage mortality

<table>
<thead>
<tr>
<th>Mortality rate</th>
<th>Mortalities</th>
<th>Estimated savings</th>
<th>Unit value (FOB)</th>
<th>Value of saved losses</th>
</tr>
</thead>
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<td>%</td>
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<td>$m</td>
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</tr>
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<td>2008-09</td>
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</table>

a As avoided losses compared to average rate 2000-02 of 1.28 per cent.
Source: CIE estimates.

4.4 Estimated benefits to live sheep exporters from lower voyage mortality

<table>
<thead>
<tr>
<th>Mortality rate</th>
<th>Mortalities</th>
<th>Estimated savings</th>
<th>Unit value (FOB)</th>
<th>Value of saved losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>No</td>
<td>$</td>
<td>$m</td>
<td></td>
</tr>
<tr>
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<td>No</td>
</tr>
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<td>No</td>
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<td>2001-02</td>
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<td>12455</td>
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<td>18397</td>
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</tr>
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<td>37348</td>
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<td>37409</td>
<td>10658</td>
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</tr>
<tr>
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<td>18231</td>
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<td>32117</td>
<td>13517</td>
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<tr>
<td>Total</td>
<td>469337</td>
<td>99984</td>
<td>81</td>
<td></td>
</tr>
</tbody>
</table>

a As avoided losses compared to average rate 2000-02 of 0.21 per cent.
Source: CIE estimates.

- New investment, replacement and refitting of ships within the industry has meant voyage times have been reduced and the technical facilities on board improved.
- Improved facilities in market ensured safe arrival (given MOUs) and improved handing (especially with support from the LATP activities).
- The LEP developed guidelines and standards that ensured that animals exported were more suited to the voyage.
  - Total savings across cattle and sheep amount to $10.9 million over the evaluation period in dollars of the day (the total of $2.8 million for cattle and $8.1 million for sheep).
Higher sheep and cattle prices as a result of higher live exports

To quantify the benefits of the LEP/LiveCorp and the LATP, the Global Meat Industries (GMI) model was used to translate the difference between the observed and ‘without LEP/LiveCorp and the LATP’ case identified in charts 3.5 and 3.6 back into changes in incomes for exporters and the wider livestock industry. These impacts must be translated back to benefits at farm or producer level after accounting for key market relationships particularly competition with the meat processing sector.

Appendix C details the GMI model and why this model is suited to the evaluation of the LEP/LiveCorp and the LATP by recognising key linkages between the live export trade and the wider livestock industries for cattle, sheep and goats.

The approach used for this evaluation is the same as that used by Hassall and Associates (2006). Cattle that are not exported would need to be diverted to other markets:

* cattle produced in the Northern Territory and northern Western Australia would need to be transported east to be slaughtered as both grass fed cattle and to be finished in feedlots to be slaughtered as grain fed cattle;
  - All cattle, including feeder types and culls, would incur additional transport costs of at least 45 cents per kilogram live weight. This transport is an additional cost borne by producers.
  - Feeder types will predominantly be sold down through to western Queensland to key markets such as Roma.

Sheep for live export are sourced primarily from Western Australia, although with current limited supplies of suitable stock around 80 per cent of the live trade requirement is coming from Western Australia and the remainder from Victoria/South Australia.

* As noted by Hassall and Associates (2006) — the alternative market for these animals would largely depend on processing capacity within Western Australia. If excess capacity exists, these lambs and sheep will be slaughtered within the state, given animal welfare issues and transport costs to east coast works.

In the ‘without’ scenario, older sheep are required to be transported east from Western Australia for processing in all years of the evaluation except 2009. This is because the total turnoff of the WA industry is greater than the processing capacity limit of 6 million sheep.

* Each sheep transported east incurs a cost of $25 per head involving total additional costs to the industry of between $35 and 50 million from 2004 to 2008. This leads to higher saleyard prices for sheep.
* In 2009, due to the lower number of sheep available, total turnoff would be handled with existing processing capacity limits.
The methodology used for this evaluation is that same as that used in a companion study by the CIE (2010) *The Contribution of the Australian live export industry*.

**Impacts on industry**

The impact of the LEP/LiveCorp and the LATP on Australian livestock prices is significant — increasing saleyard prices between 2 and 4 cents per kilogram on a live weight basis for cattle and between 2 and 12 cents per kilogram live weight for lambs and older sheep.

- The range of these impacts depend difference between the baseline and observed export numbers identified above, and the level of the prevailing prices in the observed case.
- The large price outcome for older sheep is the result of the additional transport costs required to transport sheep east from Western Australia due to insufficient processing capacity.

Small as these prices seem, they translate into significant changes in industry GVP and, given no change in production costs for producers, therefore significant changes in farm level profitability.

- Note that the price outcome for 2008-09 for sheep is lower than for other years because of the smaller contribution of the collaborative approach to live exports — and these sheep could be processed within existing WA capacity.

Table 4.5 shows that the LEP/LiveCorp and the LATP contributes between 1.6 and 2.8 per cent to the cattle industry GVP and between 2.0 and 5.7 per cent to sheepmeat GVP (excluding the impact on the wool industry).

### 4.5 Increase in farm level GVP from the collaborative approach\(^a\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cattle Industry</th>
<th>Sheep Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>2003-04</td>
<td>2.8</td>
<td>2.0</td>
</tr>
<tr>
<td>2004-05</td>
<td>2.2</td>
<td>3.7</td>
</tr>
<tr>
<td>2005-06</td>
<td>2.3</td>
<td>5.4</td>
</tr>
<tr>
<td>2006-07</td>
<td>1.9</td>
<td>4.2</td>
</tr>
<tr>
<td>2007-08</td>
<td>1.9</td>
<td>5.7</td>
</tr>
<tr>
<td>2008-09</td>
<td>1.6</td>
<td>3.3</td>
</tr>
<tr>
<td>2009-10</td>
<td>2.8</td>
<td>2.0</td>
</tr>
</tbody>
</table>

\(^a\) Change from the observed case in saleyard terms excluding impacts on live exporters and processors.

Source: GMI model and CIE calculations.

Tables 4.6 and 4.7 show the estimated impact of the LEP/LiveCorp and the LATP on individual industry components over the evaluation period — in dollars of the day. Following the MLA evaluation framework, this impact is estimated by changes in value-added or profitability at the level of the industry examined:
### 4.6 Annual benefits to the beef industry of the collaborative approach

<table>
<thead>
<tr>
<th></th>
<th>Grass fed slaughter</th>
<th>Grain fed slaughter</th>
<th>Live cattle for export</th>
<th>Live exporters</th>
<th>Processors</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
</tr>
<tr>
<td>2002-03</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2003-04</td>
<td>-37</td>
<td>3</td>
<td>135</td>
<td>4</td>
<td>-3</td>
<td>102</td>
</tr>
<tr>
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<td>3</td>
<td>116</td>
<td>3</td>
<td>-4</td>
<td>82</td>
</tr>
<tr>
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<td>106</td>
<td>4</td>
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</tr>
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<td>2006-07</td>
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<td>4</td>
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<td>76</td>
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<td>2007-08</td>
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<td>2</td>
<td>88</td>
<td>5</td>
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<td>80</td>
</tr>
<tr>
<td>2008-09</td>
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<td>6</td>
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<td>9</td>
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<td>70</td>
</tr>
<tr>
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<td>9</td>
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<td>10</td>
<td>-3</td>
<td>74</td>
</tr>
<tr>
<td>2014-15</td>
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<td>3</td>
<td>88</td>
<td>11</td>
<td>-3</td>
<td>76</td>
</tr>
</tbody>
</table>

*a Benefits are quantified in nominal terms for farm value added, exporters net margin and processor’s margin. Totals may not add due to rounding.

Source: GMI model and CIE calculations.

- farm level (supplying the processing industry and live exports); and
- live exporters and processors.

It is important to note that tables 4.6 and 4.7 show the impact of the LEP/LiveCorp and the LATP after the diversion of product between different markets and estimated price adjustments.

Further, the continuing impacts and resulting benefits of investments to date in the LEP/LiveCorp and the LATP are significant. The investments to date can be expected to have a lasting impact since many of the activities have been concerned with training, establishing standards and quality assurance programs, securing MOUs with importing countries as well as additional/improved infrastructure.

Tables 4.6 and 4.7 also include a calculation of the change in the gross margin of the live export industry. It has been estimated that the gross margin for cattle averages 5 per cent of the export fob price and 6 per cent for sheep. Details of representative value chains for cattle and sheep are presented in appendix A.

While live exports of cattle and sheep, contribute to the respective total industries, they do directly impact on other segments through raising livestock prices especially the processing sector — relative to the ‘without’ LEP/LiveCorp and the LATP case. But overall, in terms of increasing demand for cattle and sheep and by providing another market option, the LEP/LiveCorp, the LATP and the live trade adds greater value to the overall red meat industries in relative terms.
### 4.7 Annual benefits to the sheepmeat industry of the collaborative approach

<table>
<thead>
<tr>
<th>Year</th>
<th>Lamb slaughter</th>
<th>Mutton slaughter</th>
<th>Live sheep for export</th>
<th>Live exporters</th>
<th>Processors</th>
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<tr>
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</table>

*Benefits are quantified in nominal terms for farm value added, exporters net margin and processor’s margin. Totals may not add due to rounding.

Source: GMI model and CIE calculations.

### Attribution

The benefits from a higher level of live exports and reduced mortality are partly, but not solely, attributable to the investment by MLA and LiveCorp in the LEP, as noted earlier, and hence the assessment at the LEP/LiveCorp and the LATP level as a collaborative approach.

There has been concurrent action and investments undertaken at various levels of government and throughout the live export industry to achieve these ends. Whilst it is estimated that $30 million was invested by MLA and LiveCorp into the LEP, it is difficult to ascertain the full extent of investments by Government and the live export industry.

- The Government investment has included the LATP but also the development of regulation and compliance mechanisms for regulation of the trade to help ensure that risks were reduced and additional risk management strategies introduced.
- Industry for its part has worked to the regulations, adopted the new standards and procedures and made significant investments which have directly reduced risks. The investment in new ships with better on board facilities and faster travel times has been of key importance.
- In addition, part of the commitment by industry, has been higher operational costs in terms of higher unit sea freight (as a result of lower stocking densities) and higher other on-board costs including higher numbers of stockmen.
The investments undertaken through the LEP/LiveCorp and the LATP, along with others by government and industry have together resulted in the benefits of higher exports and lower animal mortality rates during transportation.

- That is, the ‘without’ LEP/LiveCorp and the LATP case is most appropriately estimated by first, assessing the likely scenario without action through the LEP/LiveCorp and the LATP, government or industry and then attributing the benefits back to each party in the collaboration as appropriate using CRRDCC Guidelines (April 2009) 5.

The assessment of the relative contribution in terms of investment costs and investment outcomes is difficult. The inputs by MLA and LiveCorp, the government and industry have each played a part in achieving the observed outcome — generating the baseline scenario where in the absence of investments undertaken by these parties there would be minimal long haul transportation of live exports. In the baseline scenario, the Australian government is expected to have prevented almost all long distance animal transportation from occurring due to concerns for animal welfare, providing licenses to individual carriers separately only after establishing operator compliance with AQIS requirements.

The actions undertaken by Government have been particularly important to addressing the concerns of the Australian community and securing long term market access through interactions with foreign governments. Whilst the cost of government initiatives such as the Keniry review expenditure may be quantified, the full extent of government investment in the negotiation of MOU’s and protocols, additional expenditure through AQIS and other departmental resources is difficult to assess.

Industry has played an important role through investment in new technology, particularly into on-board transport, including better ventilation and feeding systems. The live export industry has invested in establishing strategic relationships with customers in export markets to the effect of fostering trade and minimising risk to animal welfare.

- Furthermore, the consolidation of the ‘northern’ cattle industries has resulted in greater control over the supply chain which also enables producers to minimise their risk.

- Similarly, live sheep exporters are also now integrating back down the supply chain to ensure reliability of supply and quality assurance.

Whilst the full costs incurred by government and industry are uncertain, there is also an absence of a clear case for one of these parties generating a disproportionate share

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5 Once the benefits have been described and quantified, and the counterfactual considered, the resulting total program benefits identified will have to be apportioned to the organisations that funded the project. In many instances it will be simply a matter of apportioning the benefits on the same basis as the funds were contributed p13.
of the benefits. Therefore, to be conservative in attributing the benefits of LEP, the methodology adopted is to apportion the benefits across the MLA and LiveCorp investment in LEP, the government and the live export industry. That is, one-third of the total benefits will be attributed to each of the following:

- LiveCorp and MLA (both within the LEP plus other activities by LiveCorp);
- government; and
- industry.

For this evaluation, we also need to make the attribution between LiveCorp and MLA. Reflecting the relative proportions contributed to the investment costs, the benefits associated with LEP has been similarly distributed (see the CRRDCC guidelines April 2009). Therefore within the one-third attributable to the combined action of the LiveCorp and MLA:

- 60 per cent of that benefit would be attributable to LiveCorp; and
- the remaining 40 per cent to MLA.

While being conservative, this recognises the overall collaborative approach.

**Benefits after attribution**

Table 4.8 shows the present values of benefits over the evaluation period from the LEP – is worth $1.11 billion.

- This value represents the change in farm incomes for cattle and sheep producers and the change in net margins (difference between output price and livestock acquisition costs) for both exporters and processors.

### 4.8 Present value of benefits and attribution for the collaborative approach^a^

<table>
<thead>
<tr>
<th>Contributor</th>
<th>Cattle industry</th>
<th>Sheep industry</th>
<th>Live exporters^b</th>
<th>Processors^b</th>
<th>Total benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
</tr>
<tr>
<td>LiveCorp</td>
<td>132</td>
<td>98</td>
<td>22</td>
<td>-23</td>
<td>229</td>
</tr>
<tr>
<td>MLA</td>
<td>88</td>
<td>65</td>
<td>15</td>
<td>-16</td>
<td>153</td>
</tr>
<tr>
<td>Industry</td>
<td>214</td>
<td>159</td>
<td>36</td>
<td>-38</td>
<td>371</td>
</tr>
<tr>
<td>Government</td>
<td>214</td>
<td>159</td>
<td>36</td>
<td>-38</td>
<td>371</td>
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<tr>
<td>Total benefits</td>
<td>648</td>
<td>481</td>
<td>109</td>
<td>-114</td>
<td>1 124</td>
</tr>
</tbody>
</table>

^a Benefits are quantified in nominal terms for farm value added, exporters net margin and processor’s margin. Totals may not add due to rounding.

Source: GMI model and CIE calculations.

- Around 57 per cent of the on-farm benefits accrue to cattle industry (including producers who supply the live trade) and 43 per cent to the sheep industry (including those producers in the wool industry who sell into the slaughter and live export markets).
The remainder of the impacts are shared between the live exporting industry and processors.

- Given the increase in opportunities arising from the collaborative approach to maintain and grow live exports, the processing industry is made worse off because of higher prices and lower throughput levels.

Based on the logic of the attribution, the sum of benefits in present value terms to LiveCorp and MLA is worth $382 million or one-third of the total benefits to the red meat industry — while the combined benefits to industry and government are worth $742 million.

**Bottom line for the collaborative approach**

Table 4.9 shows the bottom line for the LEP program. In total, the benefit cost ratio is estimated to be 7.9 to 1 for LiveCorp and MLA — the partner in the LEP. Overall, the total payoff to both LiveCorp and MLA is 7.9 to 1.

### 4.9 Final benefit cost for the collaborative approach for LiveCorp and MLA

<table>
<thead>
<tr>
<th>Total benefits</th>
<th>Total costs</th>
<th>Benefit-cost ratio</th>
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<tbody>
<tr>
<td>$m</td>
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<tr>
<td>LiveCorp</td>
<td>229</td>
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<tr>
<td>MLA</td>
<td>153</td>
<td>19.3</td>
</tr>
<tr>
<td>Total LiveCorp and MLA</td>
<td>382</td>
<td>48.3</td>
</tr>
</tbody>
</table>

a Net present value of benefits 2003 to 2015 in 2008-09 terms at a discount rate of 5 per cent.

**Source:** GMI model and CIE calculations.

**Payoffs between R&D and other**

One of the tasks for this evaluation is to identify the relative contribution of R&D versus other activities in the total LEP outcome. Table 1.2 showed that R&D accounted for one quarter of total LEP expenditure. It is important to note that in this context, the majority of other activities or outputs involve:

- initiatives to secure ongoing market access; and
- marketing related activities and outputs including development of the profile of Australian livestock and products within each overseas market.

The LEP R&D portfolio is largely a defensive strategy which in practice adds to industry costs in order for them to achieve best practice animal welfare outcomes. The heat stress models are a good example of these types of R&D outputs. They are used to examine the tradeoffs, for a range of prevailing climatic conditions, between stocking densities and on-board mortality and have been the focus of a significant proportion of this R&D and its extension. In addition to the R&D component of the LEP, one-third of the expenditure by the LATP has been classified as R&D expenditure in destination countries to directly benefit the sustainability of the live
trade. This is a conservative approach that again recognises the collaborative and integrated nature of R&D undertaken across industry and government. Total expenditure on R&D by the LEP and through the LATP is shown in table 4.10.

- To be conservative, a total of $11.4 million were spent on R&D over the evaluation period.

### 4.10 R&D expenditure by the LEP and the LATP

<table>
<thead>
<tr>
<th></th>
<th>LiveCorp</th>
<th>MLA</th>
<th>Government</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
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</tr>
<tr>
<td>2005-06</td>
<td>0.3</td>
<td>0.3</td>
<td>1.2</td>
<td>1.8</td>
</tr>
<tr>
<td>2006-07</td>
<td>0.2</td>
<td>0.2</td>
<td>1.2</td>
<td>1.6</td>
</tr>
<tr>
<td>2007-08</td>
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<td>0.2</td>
<td>1.1</td>
<td>1.4</td>
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<tr>
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<td>0.5</td>
<td>0.4</td>
<td>1.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Total</td>
<td>1.8</td>
<td>1.8</td>
<td>7.7</td>
<td>11.4</td>
</tr>
</tbody>
</table>

*a Includes matching contributions to LEP R&D plus one-third of total LATP expenditure.

Source: LiveCorp accounts, MLA Annual Operating Plans Final reports and CIE calculations.

The highly integrated nature of the LEP, makes this underlying R&D complementary with the objective of maintaining and improving market access. Therefore attribution is very difficult between contributors — as identified earlier — productivity improvements observed across live exporting can also be the result of action by industry particularly as a result of investment in shipping with improved ventilation and feeding systems.

- Once the research has been completed on a scientific basis, then this research must be extended not only to export industry players but also to the industry regulator, AQIS, and stakeholders in export markets.

This attribution also depends on time lags, which can be significant, between the commencement of research, its outputs and dissemination of results to industry and other stakeholders.

- There is currently no way of empirically measuring this contribution — even by measuring current performance against stated KPIs.
- It has therefore been conservatively assessed that 10 per cent of the total benefits from the LEP can be attributed to the R&D component of the LEP program (AgTrans, 2006).
- The marginal benefit is due to development and adoption of the heat stress model and is estimated to be at least 10 per cent of all long haul sheep and 10 per cent of one third of all long haul cattle exported live.

Table 4.11 shows the allocation between benefits R&D and other program benefits — identified across the contributors.
4.11 Benefits and costs allocated between R&D and marketing

<table>
<thead>
<tr>
<th>Contributors</th>
<th>R&amp;D</th>
<th>Marketing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>LiveCorp</td>
<td>$11</td>
<td>$218</td>
<td>$229</td>
</tr>
<tr>
<td>MLA</td>
<td>$11</td>
<td>$142</td>
<td>$153</td>
</tr>
<tr>
<td>Government</td>
<td>$37</td>
<td>$334</td>
<td>$371</td>
</tr>
<tr>
<td>Total</td>
<td>$59</td>
<td>$694</td>
<td>$753</td>
</tr>
</tbody>
</table>

**Total benefits**

- LiveCorp $m 11 218 229
- MLA $m 142 153
- Government $m 37 334 371
- Total $m 59 694 753

**Total costs**

- LiveCorp $m 2.3 26.7 29.0
- MLA $m 16.9 19.3
- Government $m 9.6 11.5 21.0
- Total $m 14.2 55.1 69.3

**Benefit cost ratios**

- LiveCorp 4.7 8.2 7.9
- MLA 4.7 8.4 7.9
- Government 3.9 29.1 17.6
- All contributors 4.2 12.6 10.9

\(a\) Across LiveCorp, MLA and the LATP. Net present value of benefits 2003 to 2015 in 2008-09 terms at a discount rate of 5 per cent. \(b\) Includes marketing and market access initiatives.

Source: GMI model and CIE calculations.

In summary the total payoff from R&D, as measured by the benefit cost ratio, is conservatively estimated to be 4.7 to 1 for LiveCorp and MLA through the LEP program. On the basis of this attribution and the total benefits from the difference between the without collaborative approach and observed case, the estimated payoff from marketing and market access initiatives for LiveCorp and MLA are 8.2 and 8.4 to 1 respectively.

**Other benefits to industry**

**Other cost savings**

The LEP/LiveCorp and the LATP has produced information which has reduced other costs to live exporters. For example, more efficient veterinary treatment; training packages and training delivery.

**Market development and in market support**

Development of existing and new live export markets is driven by importing interests and live exporters. However, much of the LEP/LiveCorp and the LATP has focussed on in-country liaison with importing interests and government agencies, particularly with the intention of both helping develop new opportunities as well as addressing regulatory/management issues as they arise.

- Over the longer term these activities help maintain and increase demand for live exports.
Application to other industries

The outputs from the LEP/LiveCorp and the LATP have also benefited other industries outside of the live exporting industries. For example, the R&D work focussed on local transport prior to voyage and development of sheep feeding systems has benefitted sheep producers in Australia more generally.

Additional issues

A key point about these savings and others generated by the LEP/LiveCorp and the LATP is that they are enduring. They will continue to benefit exports/producers since they have permanently lowered costs.
5 Spillover benefits of the collaborative approach

The previous section identified the economic impact of the LEP/LiveCorp and the LATP on the live export industry and the immediate suppliers of export sheep and cattle. It also quantified the spillover benefits to the wider Australian livestock industry of the live export demand — that is, increased overall demand for Australian livestock even allowing for the contraction in local Australian demand for meat processing. That analysis showed that Australian livestock prices have been higher as a result of the live trade and that without the LEP/LiveCorp and the LATP the live trade would have been much smaller.

This section outlines the range of other spillover benefits that have resulted from the increased level of exports than is likely to have been the case ‘without’ the LEP/LiveCorp and the LATP, and investment in process improvement.

These wider spillover benefits comprise:

- improvements in animal welfare, giving assurance to the Australian community that the welfare of animals is being continually improved;
- regional economic benefits from the live export trade; and
- social and economic benefits ‘in country’ — in the countries importing Australian live animals.

Benefits from improvements in animal welfare

Historically a major issue with the live export trade has been the actual or potential loss of animals during the voyage. Tighter regulation through AQIS has meant that the pre-conditions for live exports are much more stringent than before the Cormo incident. As noted earlier, the LEP/LiveCorp and the LATP enabled the industry to then meet these pre-conditions. The LEP/LiveCorp and the LATP has been committed to improving animal welfare in Australia, on-board vessels and at overseas destinations. The industry recognises that its survival depends on the community and government having confidence that the trade is conducted with the highest standards of animal care.

The LEP/LiveCorp and the LATP and other government support has achieved significant changes in stock selection, stock management, and ‘in country’ marketing.
and processing. This investment is recognised as having led to reduced mortality and humane handling and processing.

- Australian’s feel better for these changes having been made, even though there is no obvious direct monetary indicator of that gain or ready metric to gauge the value to Australian’s of this improvement.

Compared to the trade continuing as it was pre 2004, animal welfare has improved as evidenced by the substantial reduction, and now minimal, animal losses in transit (see chart 3.7).

Rudd Government support for the trade in early 2007 gave further confidence to Australians that the trade was being well managed with animal welfare of foremost concern. This was reaffirmed recently by the Minister:

... My view has been very simple on this: if there is an animal welfare issue then we deal with that issue and improve it. That’s why the Government has invested in it. And I’ve visited ports around the world, including Indonesia and the Middle East, and I’ve inspected firsthand the work that we’ve done.6

The processes now in place to manage the risks in live exporting, developed through the LEP/LiveCorp and the LATP, provide Australians with the assurance that as much as possible is being done to maintain and further improve animal welfare. Moreover, the industry and the Australian Government recognise that new issues may well arise and the processes now in place ensure that those issues can be dealt with in a speedy and effective manner.

Cost of compliance to industry

It can be argued that meeting the pre-conditions for live exporting has come at a significant cost to the industry in terms of higher compliance costs, including:

- lower stocking densities; restricted shipments (given heat stress and other issues) resulting in less capacity to meet specific market needs; more focussed selection of animals prior to export; higher costs of feeding and stockman/veterinary support on board and the appointment of in country animal welfare managers; and

- further, some of the current regulations are said by the industry to be too constraining and without science based support:
  - if there is a resulting loss in productivity this would be an additional cost on industry and could be viewed as part of the price of improving animal welfare.

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6 Tony Burke - address to Western Australian Farmers Association Conference, Perth, 26 March 2010
If there is a resulting loss in productivity this would be an additional cost on industry and could be viewed as part of the price of improving animal welfare. On the other hand the LEP particularly has reduced compliance costs for individual exporters. In the absence of these actions individual exporters would have had to support the research to make the case for their export shipments. To some extent other individual exporters may have been able to ‘free ride’ on that analysis but overall the costs to industry would have been higher.

In one sense the value to Australians of the improvement in animal welfare, at a minimum, is the cost of this net increase in compliance costs and subsequent ‘lost productivity’.

* That is, Australians are prepared to forgo the higher returns that would accrue to producers, employees of exporters and exporters if the old procedures were to continue to apply.

Whilst there is the potential that these pre-conditions may greater than what is required to meet animal welfare objectives, the achievement of animal welfare gains itself is not necessarily inconsistent with commercial incentives. The improvement to animal welfare standards is associated with higher numbers of animal exports as well as improved quality and quantity of meat. There has been significant investment by industry in infrastructure and processes to minimise the risk throughout the value chain, although the extent to which these are driven by commercial incentives or the preconditions to market entry (animal welfare gains) is difficult to ascertain.

Furthermore, it is important to note that without the LEP/LiveCorp and the LATP and other initiatives, there may have been greater stringency applied to the industry. The industry wide approach to meeting compliance through the LEP/LiveCorp and the LATP program has potentially resulted in a more streamlined and transparent approach to quality assurance – avoiding the otherwise case of individual companies being required to prove their compliance with AQIS pre-conditions. That is, to achieve basic access to markets without the LEP/LiveCorp and the LATP is likely to have further increased costs and productivity losses.

**Regional impacts of the live trade**

The live export trade is credited with substantially improving the regional economies in Western Australia, western Queensland and the Northern Territory. These improvements are reflected in a number of observable outcomes.

* Higher on-farm net returns, with consequential flow on effects to local communities though increased producer spending and consequential local employment.

* A broader economic base to farm incomes, resulting in more stable incomes for producers and to the local community more generally.
- Significantly, the live trade both lifts and smoothes prices through bolstering the demand for sheep when the seasonal supply is greatest.

- Similarly, in the northern cattle industry where the live trade has fundamentally changed the nature of production from one of extensive grazing to fatten bullocks for export meat processing, to that of turning off younger cattle for live export.

- As a result producers are better able to match annual turnoff to available feed supply and avoid forced sales of unfinished bullocks, at distressed prices, when the feed runs out.

The 2006 AgEconPlus study quantified the contribution of the live export industry to the regional economies of Western Australia, the Northern Territory, Queensland and Victoria in 2005-06.

- Using economic value measured in terms of the value of output, gross regional product (GRP or value added or returns to capital and labour) and employment.

- Given that these estimates primarily reflect the value of live exports (export) the regional contribution, region by region, over the period 2003 to 2009 can be estimated pro rata adjustment based on state level values, relative to 2006. However, in the absence of value data, volume data has been used (table 5.1).

The analysis points to several important regional impacts associated with the live export market:

- greater output and GRP in total across the regions — increasing by around 18 per cent between 2003 and 2006;

- access to a higher value and more resilient market — where cattle values have increased substantially, by between 20 and 40 per cent, depending upon the region;

- but corresponding sheep values have remained virtually static.

- dairy cattle values have fallen by some 40 per cent.

- there have been substantial variations year to year — where the presence of the live export industry provides a degree of flexibility for producers to take advantage of market conditions across both live export and meat processing markets.

**Productivity Improvements**

One of the key indications of regional contribution resulting from the live export industry is the improvement in the productivity experienced over the past 20 years. The benchmark indicator of productivity, which refers to the ability to produce goods and services (outputs) given the available resources (inputs), is total factor productivity (TFP).
5.1 Livestock export industry value to regional Australia: 2003-2009

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Cattle output</strong></td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Northern WA cattle</td>
<td>130</td>
<td>119</td>
<td>116</td>
<td>136</td>
<td>114</td>
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<td>156</td>
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</tr>
<tr>
<td>NT cattle</td>
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<td>1078</td>
<td>1467</td>
<td>1775</td>
<td>27%</td>
</tr>
</tbody>
</table>


The most important observation is that the northern beef industry has experienced strong productivity growth equivalent to that of broadacre cropping but also higher than that observed in southern beef. ABARE (2008b) estimated that trend TFP growth in the beef industry has been:

- 2.1 per cent per year for northern beef between 1985-86 and 2005-06; and
- 1.3 per cent per year for southern beef between 1977-78 and 2005-06.

The higher productivity growth rate in the north reflects the expansion in output occurring in recent years, resulting from the corporatisation of the northern beef industry by companies operating in the live export market, which has underpinned the greater use of the bos indicus breeds, higher fertility rates and increased turn-off weights (ABARE, 2009). Further, these gains also reflect the impact of MLA and other R&D during the evaluation period (see CIE 2009b). It is not possible to single out the
overall contribution from the collaborative approach to these overall gains in industry productivity.

**Land values**

According to ABARE, there has been a steady increase in land values in both southern and northern beef properties over the past decade, which coincides with a period of considerable investment in the live export industry. The increase in the acquisition of land, driving the increase in land values, may in part be a result of the increase in productivity and expected returns in the live export industry.

There has been an increasing trend in the beef industry towards corporatisation, particularly in the northern beef industry — where properties are increasingly owned and managed by larger companies. Whilst corporatisation may have contributed to the increase in land values, the extent to which this is driven by the live export industry is difficult to ascertain.

The demand and supply of land, which determine land values, are impacted by a range of factors, including the expected future returns, exchange rates and interest rates, the irrigation water supply and recent weather conditions — such as drought. The existence of the live trade realistically could only affect one of these factors – the expected future returns.

Recently there has been significant interest in cattle properties from investors throughout the Asia Pacific region. Where there is a demonstrated link between the live export trade prices and meat processing sector prices, and expected future returns are an important precursor for investment, the presence of the live trade would be one contributing factor to the increase in land values.

Chart 5.2 shows the consistent increase in the average land values for beef industry farms over the last decade. While, land prices in each broad sector of the industry have tracked each other since the early 1990s, prices have recently diverged slightly.

- The slight reduction in land values since 2007–08 in the southern industry reflects a range of factors including the continuation of dry seasonal conditions in many regions and other factors such the impact of high exchange rates on reduction in industry competitiveness of the beef and grains.
- The resilience of the northern cattle industry

**Other non-farm industry effects**

A study commissioned by the World Society for the Protection of Animals argued that the Western Australian economy was worse off because of the live sheep trade — implying that a ban on live sheep exporting from that state would improve the economic wellbeing of Western Australians:
5.2 Increase in average land values for beef industry farms


- the study calculated that additional sheep meat processing and flow on activity within Western Australia would more than compensate for the lost income of sheep producers and the flow on effects within Western Australia.
  - By implication the same would apply with respect to live cattle exporting.
- it reported that, using standard statistical multipliers, that every $100 of additional output from exporting sheep live produces additional Gross State Product (GSP) of $82.50 but for every $100 of additional output in the meat processing sector GSP rises by $101.50;  
- but that analysis assumes excess capacity in WA to deliver the meat processing needed and it fails to recognise the impacts, on both meat processing and producers, outside of Western Australia; and
- however, as outlined in the evaluation for this study, the flow on effects outside of WA are significant since sheep prices would be adversely affected across the whole Australian sheep market.

Furthermore, the fact that both the live sheep and cattle export trade has been able to out-compete the meat processing sector for sheep year after year points to a higher income for Australia from live exporting.

- Certainly the meat processing sector is smaller than otherwise but the farm sector, and the industries that benefit from higher farm incomes, are larger.

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Sheep and cattle meat processing is a competitive industry in Australia, meaning that the industry is able to expand where the risk and returns to investors warrant that investment:

- meat processing is eligible for Australian Government support for R&D in the same way as live exporting;
- there are no apparent state government policies (in Western Australia or elsewhere) which favour live exporting over meat processing or other industries; and
- thus suggesting that the live export trade is an efficient use of Australian labour and capital resources.

**Benefits to trading partners**

There are also a number of ways in which our trading partners benefit from higher levels of live exports from Australia, to which the collaborative approach is a contributing factor, and from direct investment through LEP in trading partners. Where there has been a strong focus on animal welfare objectives, the LEP has involved considerable investment in fostering capacity and process improvement within importing countries.

**Improvement in local, social and economic wellbeing**

Exports of live sheep and cattle from Australia directly benefits consumers and producers in importing countries.

- Consumers benefit from access to protein at a lower price than otherwise and enabling meat preparation to meet traditional needs.
- Producers benefit through the opportunity to add value to imported feeder cattle though fattening. This brings financial returns to the owners of feedlots as well as providing increased employment opportunities in situations typically characterised by high levels of unemployment, or under employment.

**Technology spillovers**

A significant element of the LEP is directed at addressing specific marketing and technical problems ‘in country’. In many cases both R&D and extension is required to achieve the improvements:

- there is a strong component of transferring technology or technical solutions arising from other MLA, Australian Wool Innovation or other industry or Australian Government programs/support, transferred across the range of in country services provided under the LEP. For example, breeding, feeding or general livestock management technologies and practices.
the LEP was important to, and can claim responsibility for, the application of these technical practices. The gains from the R&D underlying these changes are appropriately credited to those programs rather than the LEP.

however, a significant component of the LEP is directed at addressing specific marketing and technical problems ‘in country’, in many cases both R&D and extension is required to achieve these improvements.

Spillover benefits have resulted from the communication and adoption of improved processes in importing countries. Cattle and sheep handling, feeding, marketing and processing practices developed through the LEP for Australian livestock imports are being applied to live imports from other countries and the local livestock supply chains and meat processing industries.

These changes have delivered:

- improvements in animal welfare through reduced stress in handling, appropriate watering and feeding, and in more humane slaughter in local meat processing operations;
- higher quality meat products for consumers; and
- lower production costs for producers.

Capacity building

One of the major gains that have been identified through undertaking and applying agricultural R&D internationally is capacity building within recipient countries:

- including the capacity to manage and undertake R&D, to develop extension and pathways to adoption, to promote and achieve regulatory change.
- the LEP, through both its country specific ongoing R&D and advisory activities, and its periodic involvement of short term technical support, has improved the capacity of ‘in country’ researchers, extension support processes and individual businesses to better address animal welfare and production issues.

Conclusions from other benefits

In summary, several other pecuniary benefits would be important to take into account from a policy perspective in the consideration of the benefits of the LEP and broader government and industry initiatives. There is substantial evidence that higher live exports, resulting from LiveCorp/MLA, government and industry investments, has assisted regional Australia through raising productivity growth and supporting income growth.

There is some evidence that the demonstrated improvements in animal welfare outcomes has translated into an improved perception of the live export trade within the Australian community. Furthermore, investments in processes, capacity and technological transfer from the LEP program have fostered better animal welfare and
economic outcomes not only within Australia, but within countries importing Australia’s live exports — including throughout the Asia Pacific.
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Appendices
A Underlying market drivers

This appendix outlines the key drivers in the live export industry and thus provides the context for the activities of LiveCorp and the LEP. This section outlines the key industry market supply side and demand side drivers. It then goes on to summarise key events that have shaped the course of the industry.

Key market drivers of live exports

An up-to-date structure of the Australian live export industry identified in detail in the companion study by the CIE (2010) *The Contribution of the Australian live export industry*.

Value chain from farm gate to importing country

Value added in the industry shows the significance of the farmgate livestock cost, sea freight and the various onshore and offshore handling and feeding costs. In addition to these factors, variations in exchange rates can have a critical impact on both the landed price of these animals in respective markets and the return to exporters in Australia.

The acquisition of livestock at farm level is the largest single cost as a proportion of the landed price to the destination market for:

- cattle, it represents around 67 per cent of the total value; and
- sheep, it accounts for around 55 per cent of total value.

The next largest cost item is sea freight cost representing between 20 and 23 per cent of the landed value of the animal. Historically, sea freight rates have varied considerably over time corresponding to fuel costs and the level of capacity utilisation of the fleet of ships that are dedicated to carrying live animals.

Surprisingly, direct costs that could be associated with complying with the range of industry regulations and standards are relatively small account for around 1 per cent of the landed value of an animal in market. These ‘compliance’ costs would include expenditure on:

- third party veterinarians;
- stockmen onboard and at loading and disembarkation; and
- AQIS charges.
The remaining costs are probably determined elsewhere in their respective markets.

The live animal export industry has developed in response to changes in the key destination markets. For cattle, the industry has changed from one focused on breeding cattle for herd building, to one primarily exporting feeder and slaughter cattle, to developing regional feedlot industries (ABARE, 2008a). The live sheep export industry has been driven largely by Middle East consumers, whose incomes have been rising, but prefer consuming lamb that has been slaughtered as recently as possible.

**Live cattle market drivers**

Chart A.1 shows the composition of live cattle exports to key markets since 1990. Asian countries, especially Indonesia, form the backbone of Australia’s export trade. A range of demand side factors affect the trade of live exports into Asia.

- Limited availability of cold-chain storage and refrigeration in South East Asia. Refrigeration of meat is generally limited to abattoirs, wholesalers and retailers supplying the smaller-medium and higher priced markets.

- It is generally middle and upper class populations that purchase and store packaged meat in home refrigerators. In many rural areas, consumers would only access freshly slaughtered beef sourced from small livestock farmers.

**A.1 Live cattle exports by major destination**

- Growth in demand for beef in South East Asia, reflecting generally rising incomes.

- Beef, which is generally more expensive and much less widely available than poultry and other protein sources, is still only 10 to 20 per cent of overall meat
consumption in the key markets of Indonesia, Israel, Malaysia and the Philippines.

- The increasing tendency of consumers to consume meat as a function of per person incomes and a switch away from grain-based protein.

- Australian cattle saleyard (beef) price movements relative to those of the staple local protein sources in these markets, poultry, pork and fish;

- Competitive market forces — for example, the entry of Brazilian beef and buffalo meat from India has had a significant impact in markets such as Philippines and to a lesser extent Malaysia.

- Changes in market access can cause demand shifts — Australian live exports could face potentially greater competition from other beef and meat producers of boxed beef.

- Indonesian government policy currently restricts the entry of frozen beef from Brazil and frozen buffalo meat from India, because of the threat of foot and mouth disease.

- Israel primarily imports calves8 and these mostly come from Australia and Hungary. Poland had been a major supplier of calves to Israel before its BSE was discovered and Argentina was the source for half of frozen beef imports before its 2006 export ban (ABARE, 2008a).

As shown in Chart A.1, Australian cattle now primarily go to Indonesia, other countries including Israel, and to a lesser extent Philippines and Malaysia, driven by the economics of these markets. In these markets, imports of live cattle have met a shortfall in the supply of locally-reared beef relative to demand, because of:

- availability of suitable land, especially in the case of crowded and mostly arid Israel;

- traditional beef marketing systems;

- domestic policies constraining further development;

- limited supply of workers skilled in animal husbandry;

- cattle production systems of insufficient scale — smallholdings of less than ten cattle predominate; and

- lack of capital and infrastructure.

In contrast, these markets do have a number of comparative advantages — they have low cost agricultural by products that can be used for feed, and lower cost labour, which makes processing substantially cheaper than in Australia. They also have a

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8 Australian calves are imported at an average live weight of 220 to 250 kilograms and are fattened for up to 235 days until they reach slaughter weight of 500 to 600 kilograms. The Hungarian cattle are primarily air freighted at 60 to 70 kilograms and fed for up to 350 days to reach 450 to 580 kilograms (ABARE, 2008a).
poor cold-chain infrastructure from transportation and storage and within households (particularly in South East Asia), religious preferences for halal or kosher meat that has been certified locally.

- All of these factors have encouraged the import of live feeder cattle. In these markets, feedlots have developed around a food processing plant or oil mill to use low cost by products. The imports of live cattle occur for finishing or slaughter, to fill shortfalls (ABARE, 2008a).

As noted earlier, the key cost drivers for Australian supply into these markets (and also true for sheep live exports) are:

- the domestic cattle prices;
- feed and prevailing oil prices; and
- exchange rates.

This is because the largest items in the value chain are farmgate cattle prices and shipping transportation costs, which are largely a function of the oil price. The domestic cattle price is heavily influenced by local weather conditions, feed prices, domestic beef consumption, demand from foreign markets and the world beef price. Export demand in particular markets for Australian beef products can alter markedly with exchange rate movements, market access developments (such as the United States denied access to Japan and Korea on account of BSE) and weather conditions affecting local supply. Prolonged drought periods can reduce herd sizes as stocks are run down, putting upwards pressure on cattle prices, though the Australian herd recorded only a modest decline during the most recent drought (MLA Industry Projections Summary, 2008).

Australian cattle producers have a degree of flexibility about how to use their stock. In some regions, there can be competition for supply of cattle for live export from the domestic feedlot sector, which service chilled export markets. However, most, cattle producers specialising in the live export trade cannot easily or quickly divert all or some of their herd to alternative uses, and the closure of the live trade would impose significant costs on the national beef cattle industry (see box A.1).
A.1 The impact of live export closure on the national beef cattle industry

The Hassell’s (2006) study assessed the impact of a closure of the live trade on Australia’s beef cattle industries. The study assumed that:

- Indonesia would not switch to Australian boxed beef product but permit the import of Indian buffalo meat and South American product;
- cattle now exported through the northern ports would be diverted to eastern states for processing and export into US, Japanese and Korean markets, though some would need an additional year to reach sufficient weight for this purpose; and
- additional transport costs would result from diverting the cattle to eastern markets for slaughter.

Economic modelling of the impact on beef cattle industries was undertaken by the CIE. The modelling found that without live exports, beef and veal production would be 8 per cent higher and grass and grain fed cattle prices 7 per cent and 4 per cent lower respectively. The larger domestic production does not make up for the lost live exports, such that the national beef cattle industry would be 5 per cent smaller with the live trade.

Source: Hassell and Associates, 2006

Sheep market demand drivers

A range of factors particular to the key sheep live export markets underpin the trade. Chart A.2 shows that this trade is dominated by markets in the Middle East — the other notable feature is that volumes on an annual basis are highly variable over time in response to a range of economic and regulatory drivers in those countries.

- Demand for live sheep primarily reflects cultural and religious preferences. Lamb, which is reared locally but in insufficient quantities, is the preferred meat protein source in many parts of the Middle East. The main way of selling sheep meat products is in the *souk*, a traditional market where live animals are sold and slaughtered fresh for the buyer, who is generally the ultimate consumer. This approach assures customers that meat that is as fresh as possible and has been slaughtered *halal*. Butchers also supply retail consumers in the same manner (ABARE, 2008a).
- As with live cattle, rapidly rising incomes in the Gulf region have encouraged consumption of lamb (per person lamb and other proteins).
- Australian farm gate (sheep) price movements relative to those of the protein sources in these markets, poultry, pork and fish.
- Consumption is supported in some countries by various policies aimed at making retail lamb cheaper, for example the price caps in Kuwait and
government subsidised processing and distribution in Bahrain (Hassell’s, 2008). Imported sheep meat products do not benefit from these subsidies.

- Prices and exchange rate movements, although the live sheep markets appear to be less responsive to price than beef markets.
- Changes in market access can cause rapid demand shifts, most visibly in response to periodic export bans by Saudi Arabia.
- Substitution to chilled sheep meat, for which demand has risen in the last decade and primarily servicing urban consumers without the same demand for freshly slaughtered meat.
  - Middle East demand for chilled sheep meat has been met by Australia, and New Zealand, China, India, Pakistan, Uruguay and Sudan.
  - In recent years, cheaper Chinese chilled sheepmeat to Jordan has expanded markedly; in contrast, Australian sheepmeat exports largely go to Saudi Arabia and the UAE (ABARE, 2008a).

Australian sheep are primarily exported to the Middle East countries of Saudi Arabia, Kuwait, Jordan, Bahrain, Oman, UAE and Qatar. In these countries, attempts at intensive breeding have been limited by the dry arid conditions and the limited availability and high cost of imported feed. Consequently, the domestic supply of animals has been insufficient to satisfy the market-specific demand for live sheep slaughtered fresh for the consumer. Australia’s position in these markets reflects its ability to reliably and consistently deliver shipments of live sheep (ABARE, 2008a). There are also imports of cheaper sheep from North Africa and Iran, but the African sources (especially from the Horn of Africa) are inferior, as they are more likely to be diseased and of inconsistent quality (ABARE, 2008a).
As explained earlier for cattle, the key cost drivers for Australian supply into these markets are the domestic sheep price, feed and water prices, exchange rates and the oil price. As for cattle, the farmgate sheep purchase price and shipping transportation dwarf all other activities in the value chain. Domestic sheep prices and the size of the stock are heavily influenced by local weather conditions, feed prices, domestic and foreign sheepmeat consumption demand, and world lamb prices. Live sheep export numbers have been declining and sheep export prices rising since around 2000, reflecting the severe impact of several Australian droughts and declining profitability of wool production. This has contributed to a 30 million head (or 25 per cent) reduction in the Australian sheep flock during this period. In addition, stronger demand for lamb for slaughter has been boosted by higher mutton and lamb prices, themselves reflecting trends in world meat prices.

Stock rundowns and favourable prices for alternative domestic slaughter uses have been a key constraint on live sheep exports in recent years. Sheep producers therefore have a degree of flexibility about how to use their stock. If, however, the live trade were closed, there would be costs for the whole sheep industry, as is discussed in box A.2.

A.2 The impact of live export closure on national sheep industry

The 2006 Hassell’s study also assessed the impact of a closure of the live trade on Australia’s sheep industries. The study assumed that:

- sheep currently live exported would be diverted to the domestic processing industry for slaughter, with the meat sold on domestic and export markets.
- of the nearly 5 million sheep exported live in 2002 to 2004, approximately 30 per cent could be slaughtered as lamb;
- Western Australia has 3 million sheep exported live and one million of these could be processed there. Processing capacity may rise in the years after the trade was closed, but the study argues that labour is the key constraint to expansion. The remainder would therefore have to be transported to South Australia and Victoria for slaughter, which adds an additional transportation cost equivalent to 7 per cent of the farm gate price; and
- Live sheep currently exported from Victoria and South Australia are processed locally.

The economic modelling of these impacts found that without live exports, lamb and mutton production would be 18 per cent higher, lamb prices 4 per cent lower and mutton prices 18 per cent lower. The larger domestic production does not make up for the lost live sheep exports, such that the national sheep industry would be 11 per cent smaller.

Source: Hassell and Associates, 2006
Dairy cattle market demand drivers

As identified earlier, a major driver of growth and timing of the live dairy trade is government policy or donor-based aid programs in destination countries. Little is known about other market drivers such as freight rates or the relative price of acquiring dairy breeding stock between Australian and other countries with a modern genetics base such as New Zealand, Canada and the United States.

Exports of live dairy cattle are predominantly from Victoria. In most years, China has been the most important market for these cattle – mainly for breeding – although the basis of this trade is largely opportunistic rather than based on long-term strategies. In recent years, Russia is becoming an important market.

The primary driver of these exports are policies in China and Russia to establish a domestic diary industry and reduce reliance on imported milk products.

- In Russia, there has been a significant push for higher production ad increased food security following the significant loss of production capacity during the Perestroika period.
- An important consideration for exports to China is the sensitivity of authorities to protocols around zoning of cattle from declared arbovirus areas.
- Exports also occur sporadically to a range of other Asian countries — such as Vietnam — largely as the result of donor-based programs which also have the objective of reducing reliance on imports.

Goat market demand drivers

Goat exports in recent years have been driven by demand by Malaysia for a mix of breeding and processing animals — it imported more than 80 per cent in 2007–08, with nearly all of the remainder going to Thailand, Singapore and Brunei. Saudi Arabia was a large market before 2003, when a ban on Australian live goat imports was imposed. In Jordan, Chinese goat meat is a substitute for other proteins, and this most recent increase in demand partially reflects substitution away from beef and poultry (LiveCorp, 2008). The Malaysian-centred demand for breeding stock has resulted in most exports now going by air transport.

The value of goat live exports was around $11 million in 2007 (LiveCorp, 2008), so it is a much smaller trade than cattle and sheep. The supply of goats for the live trade has largely been in the form of feral animals from south eastern Australia and Western Australia. Taiwan is an important export destination for the feral goat meat trade.

- Commercially raised goats or rangeland goats that have been backgrounded on farm are becoming a larger share of goat exports from the eastern states.
Suitability, efficiency and availability of ships for livestock transport

The suitability, efficiency, and availability of ships for livestock export, that can satisfy regulators at export and import points, have a significant impact on industry performance. The key economic factors that underlie the profitability and sustainability of the live trade include:

- supply of ships that conform to accreditation requirements and new ship delivery lags;
- These factors dictate capacity utilisation and so freight rates. Periods of excess capacity have resulted in low rates and competitive live exports.
- ship efficiency and the fuel prices; and
- alternative uses for ships — scope to backload the return journey.

Market access

Access to markets for live exports can change dramatically over time, reflecting decisions made by governments at home and in destination export markets affecting all livestock exports. Foreign governments have rapidly closed markets at the import end due to perceived risks and poor conditions of landed stock. These closures can be long-lasting, such as the 1989 to 1999 closure of the Saudi sheep market. Australian government agencies have also imposed tighter restrictions at the export point, in response to specific concerns. Australian trade officials have subsequently assisted with negotiations and agreements, to underpin the restart of the trade.
Chapter 2 identified the wide range of regulatory and institutional structures around the Australian live export industry. Therefore there are a large number of rules, standards and regulations that the industry has to comply with. Much of this regulation reflects the government’s desire to assure the public that appropriate animal welfare standards are upheld, particularly during ship transport and unloading offshore. Domestic regulations and standards also assure importers in the destination markets that arrivals of Australia livestock will be consistently in good health. Businesses in the trade deal with several layers of regulation, imposed by a wide range of governments in Australia and overseas.

**Animal welfare**

Animal welfare issues are central for the industry and heavily influence the nature of handling and transport practices and facilities. In addition to health and food safety reasons, a central purpose for much of the regulation outlined earlier is to satisfy governments and the general public that animals are treated humanely in the course of their export. The methods and techniques used to handle export livestock at pre-export preparation, during land, air and sea transportation, and the post arrival arrangements have big impacts on animal welfare. There are vociferous and public debates on animal welfare matters, with a wide range and large number of groups pushing for a ban on the live export trade. Opinions about the appropriate treatment of animals vary markedly, reflecting culture, income, lifestyle, and other factors unique to the respondent.

**The OIE animal welfare code**

The OIE is the global intergovernmental organisation responsible for improving animal welfare, with 172 member states. OIE considers that animal welfare relates to:

How an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is **healthy**, **comfortable**, **well nourished**, **safe**, **able to express innate behaviour**, and if it is not suffering from unpleasant states such as **pain**, **fear**, and **distress**. Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment. (OIE, 2008)
The OIE’s *Terrestrial Animal Health Code* contains recommendations on appropriate animal welfare management and practices for transportation by land, sea and air, and for slaughter. These recommendations outline standards regarding condition, health, welfare and handling arrangements, strategies and techniques for the purposes of ensuring satisfactory animal welfare. The OIE code does not recommend specific levels or acceptable ranges for space, temperature, body mass accretion, etcetera, but specifies its standards in the generality.

**Australia’s livestock transportation standards**

Government legislation, compliance measures, and quality assurance programs support Australia’s livestock transportation standards. Policy responsibility and regulatory oversight of the industry is a shared arrangement between the Australian Government and the States and Territories. The latter have responsibility for production, management and transport of the animals, and the Australian Government has responsibility for the actual export of the animals. There are also codes of practice to assist and guide industry. The Australian Government’s 2003 *Live Export Review* observed that the live export trade ‘…faces a complex regulatory system, with a myriad of disparate responsibilities spread over a large number of parties’ (DAFF, 2003).

**Australian Standards for the Export of Livestock**

To be permitted to export livestock, the central piece of regulation for operators to be compliant with are the *Australian Standards for the Export of Livestock* (ASEL), version 2.2. The ASEL set requirements for the export process across the transportation chain, from property of origin, road transport, pre-export assembly, loading and shipment, and were developed in consultation with industry, governments and animal welfare groups including the Royal Society for the Prevention of Cruelty to Animals (RSPCA). These standards take an outcome-based approach to risk management, and specify condition, health, welfare and handling arrangements in great detail all the way along the value chain. They embody the standards for the conduct of the livestock export trade, as required by the Australian, state and territory governments and endorsed by the Primary Industries Ministerial Council. ASEL is very similar in scope and standards to the OIE code, but also mandate specific levels or acceptable ranges regarding per head space, animal temperature, change in body mass, among others.

Several Australian government agencies have key roles in implementing the standards. Market Access and Biosecurity of DAFF are responsible for negotiating

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9 The standards were conceived in 2005 and reviewed and amended in 2006, in response to advances in knowledge and understanding of animal welfare and changes in community expectations.
the health agreements which importing countries want the Australian Government to certify. AQIS administers the *Australian Meat and Live-stock Industry Act* 1997, which requires exporters to first gain an export licence, and the *Export Control Act* 1982, which requires a licensed exporter to meet local and the importers’ criteria related to health and welfare of the animals. An AQIS veterinarian inspects the animals and reviews documentation prepared by the exporting company’s veterinarian, before deciding whether to issue an export permit. The Australian Maritime Safety Authority (AMSA) is responsible for matters of animal welfare on board ships and during an export journey, per the *Navigation Act* 1912 and associated Australian Commonwealth Marine orders. These orders, embodied in ASEL, contain provisions about:

- loading facilities;
- ship design;
- fodder and water supplies;
- the number of animals that may be carried;
- stocking density;
- design and arrangement of pens; and
- the care of livestock onboard ships.

From the industry’s perspective, satisfying the regulatory code is a ‘defence’ against charges of poor and inhumane treatment of livestock in the course of exporting. As long as operators comply with the regulatory framework and standards, and satisfy the regulators, they cannot be held legally liable for adverse outcomes. The Australian Government, as regulatory service provider, is an important producer in the value chain, so takes on partial responsibility for adverse outcomes, regardless of whether this is actual or perceived.

*State and Territory regulations*

The range of state and local government laws and regulations have big impacts on the industry, governing matters of general animal health and welfare, production, feedlots and holding yards, transportation of the animals to port of loading. States and territories have the responsibility to support market access by disease surveillance, enable identification and traceability and to have effective disease responses in the event of an outbreak. States, with assistance from the RSPCA administer arrangements pertaining to livestock cruelty, contained in the various Animal Welfare Acts, which are consistent with, and largely restate the key provisions and tenets of the ASEL and OIE standards (Commonwealth of Australia, 2003).

State governments’ veterinarians and stock inspectors act as animal welfare officers and animal welfare inspectors, respectively. State governments oversee livestock production standards incorporating biosecurity, animal health and welfare.
standards. The use of chemicals in livestock and chemical residue surveillance and control are also legislated by states\(^{10}\) (Northern Territory Government, 2006). The state governments’ Departments of Agriculture issue a range of recommendations regarding all livestock movements, suggesting techniques from its R&D activities found to improve animal welfare, among others. Again, these recommendations are consistent and reinforce the risk-management approach outlined in the OIE and ASEL codes.

**Industry codes of practice**

The Australian Government and state governments have consulted with industry and welfare groups to develop Model Codes of Practice for the welfare of farm animals, which are used by the states to develop their own codes and set standards for husbandry and transport that can be prescribed and enforced by legislation. Some of these codes were developed from industry codes\(^{11}\). For the most part, the codes are not mandatory and have not been implemented consistently in all states’ Animal Welfare Acts\(^{12}\). The codes also provide a basis for animal welfare standards in industry programs (Commonwealth Government, 2003).

There is a raft of mechanisms which work together to achieve compliance and protect expectations surrounding animal welfare with regard to livestock. Table B.1 summarises the roles of legislation, regulations, standards and voluntary commitments by operators in achieving good outcomes regarding animal welfare, in the course of livestock management in Australia.

**Importing country health and animal welfare standards and policies**

Once landed in destination markets, Australian regulations and frameworks do not apply. The OIE’s *Terrestrial Animal Health Code* describes the responsibilities of the importing country’s authorities, to satisfy its definition of animal welfare, as:

- establishing minimum standards for animal welfare, including requirements for inspection of animals after their travel, and for certification and record keeping;
- approving facilities, containers, vehicles and vessels for the holding and transport of animals;

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\(^{10}\) For example, the Northern Territory’s *Agricultural and Veterinary Chemicals Control and Use Act* 2006.

\(^{11}\) For example, the Western Australian *Code of Practice for the Transportation of Sheep* is based on the *Code of Practice for the Welfare of Animals* produced by the Livestock Transporters’ Association of WA.

\(^{12}\) In South Australia, codes are mandated, Victoria and Queensland have non-regulatory based application of the code, and in the other states’ legislation recognises them to varying extents (Animal Health Australia, 2007).
B.1 Animal welfare compliance framework in Australia

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Scope</th>
<th>Current situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislation</td>
<td>Commonwealth and state laws to give effect to policy relating to animal welfare</td>
<td>While animal welfare legislation varies between states its effect throughout Australia is to prevent cruelty to animals.</td>
</tr>
<tr>
<td>Regulations</td>
<td>Details of how legislation is interpreted and applied in practice — for example, Marine orders and Export Control orders</td>
<td>Linked to legislation by provisions. Spells out the details of how the legislation will be interpreted and enforced and the associated penalties. Can be changed often and at short notice.</td>
</tr>
<tr>
<td>Standards or directives</td>
<td>Actions and systems that must be followed to achieve a specified and acceptable outcome — for example, ASEL</td>
<td>Not yet the basis for animal welfare legislation within Australia. The development of standards uses contemporary knowledge to specify the actions and systems that must be adopted. Often based on objective criteria coming out of latest R&amp;D.</td>
</tr>
<tr>
<td>Codes</td>
<td>Agreed guidelines for delivering outcomes but stem from current practices and preference — for example, model codes of practice</td>
<td>Voluntary guidelines developed through consensus and observed to varying degrees by the States. Can be used as a defence of the legislation where enacted.</td>
</tr>
<tr>
<td>Best practice</td>
<td>May reflect existing standards but can also reflect practices actually being used by the industry’s best operators</td>
<td>Best practice is an empirical statement of the methods being employed by an industry’s best operators and will change through time according to community expectations, innovations coming out of R&amp;D and affordability considerations.</td>
</tr>
</tbody>
</table>


- setting competence standards for animal handlers and managers of facilities;
- implementing the standards, including through accreditation of/interaction with other organisations and the authorities;
- ensuring that the exporting country is aware of the required standards for the vessel transporting the animals;
- monitoring and evaluate health and welfare of the animals at the point of unloading;
- giving animal consignments priority to allow import procedures to be completed without unnecessary delay.

The OIE codes are not treaties, so are not binding on member states. They are recommendations that countries have agreed, in the broadest generality, to work towards. There is obviously a wide variety of application of these standards between countries, and weak application of these standards leads to poor animal welfare, and potentially threatens the quality and reputation of the exporter, and raises domestic public opinion against the industry. The industry therefore has some interest in ensuring that importers have satisfactory arrangements in place.

Standards adopted by other livestock exporting countries

The LEP R&D program, investigated the specificity and rigor of the livestock export standards applying in individual countries that participate significantly in the trade.
The MLA (2006) study benchmarked the ASEL against standards applying in New Zealand, Ireland, UK, EU, Canada, Brazil, Argentina, Uruguay, Mexico, China, Djibouti, Ethiopia, Kenya, Somalia, Sudan and Uganda. The study documented the standards or procedures, but did not attempt to verify actual compliance by exporters. The benchmarking assessed standards in terms of coverage (of species and phases of transportation) and capacity to deliver acceptable outcomes (measured against animal welfare indicators).

The study found a large range in standards. Some exporting nations (primarily in Africa) did not have standards at all; in others (South America), the study could find no evidence of standards. It was found that there are not features of standards or regulations adopted by other countries that would add significantly to the effectiveness of Australian livestock export standards in terms of coverage and welfare outcomes.

**Rejected shipments and welfare**

When shipments are rejected on the grounds of poor health or disease by the importing countries’ authorities, this creates an immediate animal welfare predicament. Even if the importing countries are rejecting the shipment, the welfare of the animals would, in theory, be best served by unloading as soon as practicable. Australian shipments of sheep to Saudi Arabia have been rejected, and authorities have not allowed livestock to unload temporarily. These rejections focus heavy attention and scrutiny on the immediate management steps taken, and on the live export industry generally.

The so-called Cormo incident was a pivotal time for the Australian livestock export industry (see box B.1).

**Measuring animal welfare**

**Mortality rates**

In the case of live exports, mortality is currently the main welfare indicator in the livestock export industry, and the industry reports on mortality rates to government.

Mortality levels on all voyages are reported and if these exceed predetermined trigger levels a full investigation occurs. These levels are two per cent for sheep and 1 per cent for cattle on voyages over ten days and 0.5 per cent for voyages under ten days. Mortality rates vary with the distance of the voyage, the time of year and type of stock.

Mortality rates have their drawbacks as a useful indicator into animal welfare. They only measure extreme events and do not tell us much about animals’ treatment and conditions in handling and transportation. A further limitation of mortality as an
B.1 The Cormo Express incident

On 5 August 2003, consignment of 57,937 sheep loaded on MV Cormo Express departed Fremantle Western Australia for Saudi Arabia. A Saudi principal owned the shipment and the vessel was chartered from Dutch owners. On arrival at Jeddah, the overall mortality rate was less than 1 per cent.

The Saudi Arabian Ministry of Agriculture rejected the ship on the grounds that 6 per cent of the sheep were infected with scabby mouth. This was above the 5 per cent normal acceptance level for the Saudi trade. The Australian veterinarian on board estimated the incidence to be 0.35 per cent.

Negotiations by industry and Australian government representatives failed to gain acceptance for the consignment by Saudi Arabia or any other country in the region. Ultimately it was accepted by Eritrea. At this point, the sheep had been onboard the vessel for 80 days with a mortality rate of 9.8 per cent.

The Keniry inquiry subsequently found that the remaining sheep were discharged in good condition and attributed this outcome to the professionalism of the crew and stockman on board.

But this chain of events and the resulting vision and reports distributed through media outlets would prove to have a profound impact on the perceptions of the Australian public and their attitudes to the legitimacy of the live trade.

Source: Keniry 2003.

indicator is that rates have declined so markedly in the last two decades that there are likely to only be proportionally small, and smaller decreases in mortality going forward. Interpreting observed changes at such low levels is increasingly difficult — factors other than improvements in handling, such as disease outbreaks or extremely hot weather may explain trends and swamp other observables in the data.\(^{\text{13}}\)

The mortality rate as specified is in isolation. It would be more usefully specified as a measurement of decreases in mortality, compared with a benchmark, such as mortality levels for farm animals (non-transported), and those transported on land.

\(^{\text{13}}\) Mortality approach zero, but seems unlikely to ever zero. Cattle mortality rates are unlikely to go much lower since poor weather or outbreaks of disease, or ship sinkage will occur at some stage, regardless or how well the industry manages these risks. A target of a zero per cent mortality rate is not achievable, nor, arguably shed much light on how the animals have been faring and treated up to that point.
C Modeling approach

If there are complex adjustments in response to changes in demand or supply, quantification of the economic impacts for the industry requires the use of a sophisticated model of the industry.

MLA has adopted the CIE’s Global Meat Industries (GMI) model as the standard approach to such analysis. For example, a project that improved market access in one country by meeting a set of standards brings value in the extent to which a higher price can be obtained in this market. The gain is the price difference as the product sold here is not sold in another market. It must also be adjusted for higher costs if meeting the standard imposes additional costs. In the long run producers may expand production to replace that diverted, and may try to expand product into the higher price market driving down the prices somewhat. If this is the adjustment pathway, consumers end up better off in the market with standards, worse off in the market without, and while producers gain, the amount depends on their cost structures.

The results presented in this report are generated according to the guidelines provided in the economic module of the evaluation framework (footnote to website). This module provides a set of ‘rules of thumb’ for estimating industry benefits arising from changes in demand and supply. However, the economic module only distinguishes between domestic and export markets in aggregate. Because of this, the GMI model is linked with the Integrated Framework (IF) model to estimate the benefits to the industry. This approach is illustrated in chart C.1.

The GMI model provides a global representation of production, consumption, trade and prices at the bilateral level for meat (beef, sheepmeat, pigmeat and poultry) and live animals (cattle and sheep). It measures payoffs to Australian beef and sheepmeat producers in terms of changes in prices, production and gross value of production at an aggregate industry level. But the GMI model is purely a meat industry model and as such, it does not measure effects on other industries or the economy as a whole.

The IF is a model of the Australian economy. It captures interactions between the red meat value chain and other sectors of the economy. These interactions include purchased input use at the farm level and value adding factors such as capital and labour. In terms of red meat sector coverage, the IF includes farm production, feedlots, processing, wholesaling, retailing, domestic consumption and exports. The IF measures the effect of changes on each industry (in terms of output, prices, net income etc.) and the economy as a whole (in terms of GDP, employment,
consumption, trade balance etc.). The linked GMI/IF system as shown in chart C.1 then links the outcomes in specific global markets with details at the domestic industry level and broader economy.

Of relevance to this evaluation, the IF identifies relevant industry detail including:

- northern and southern beef; and
- feedlots.

In terms of key markets, the IF identifies for each industry the exposure to each of the markets through the:

- export of live cattle;
- slaughter of cattle — for domestic and export markets; and
- sale of feeder cattle into feedlots.

While the IF is ideally suited for this task, it does not encompass two components of the live trade:

- beef cattle for breeding; and
- dairy cattle for breeding and milking.

As noted in chapter 2, while these components of the trade are important, the volumes of cattle export are highly irregular and the drivers of demand are difficult to identity and articulate using a quantitative approach.