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Executive Summary

Key Findings

• If live sheep producers and exporters are not confronted with the full costs of production (inclusive of the animal welfare concerns of the community) they may be making a suboptimal investment decision from the viewpoint of the wider society.

• The live export trade in sheep from WA became established at a time when the WA lamb processing market was regulated.

• There are significant subsidies paid on the slaughter of live sheep in the Middle East. There is also considerable indirect support for the live sheep trade in the Middle East including subsidised water, feed and infrastructure.

• These policies have influenced not only the sheep production decisions of Western Australian farmers but the development of processing capacity and the markets for WA sheep meat products.

• These trade distortions also potentially affect the WA economy. Not only is there greater value adding (output) from processing sheep domestically; every $100 of additional output from exporting sheep live produces additional Gross State Product (GSP) of $82.50; for every $100 of additional output in the meat processing sector GSP rises by $101.50.

• There appears to be significant and growing substitution between sheep meat and live sheep in most Middle East countries. That is, as live sheep imports fall sheep meat imports rise. An important factor in this relationship is the dramatic rise of GDP growth in this region. This suggests that live sheep at least in part compete with processed sheep meat from Australia.

• There also appears to be significant growth in the rest of the world for sheep meat at a time when almost all major sheep meat producing flocks are shrinking.

• The least cost way of reducing the externalities of the live sheep trade from WA appears to be to increase the level of substitution between the processed sheep meat and live sheep. This would ensure that:
  – there is limited substitution between Australian live sheep and sheep from other sources.
  – the full value adding opportunities can be captured by the WA and Australian economy.
  – there would be a reduction in the reliance on the live sheep trade to the Middle East by WA farmers.

Strategies to drive substitution of live sheep with Australian processed meat could include: reducing the trade distortions (subsidies and indirect support), greater marketing and promotion of Australian sheep meat, rationalisation in the WA processing sector, and even vertical integration between the Western Australian and Middle East meat industries.
ACIL Tasman has been commissioned by the World Society for the Protection of Animals (WSPA) to analyse the economics and policy settings of the live sheep export trade from Western Australia and sheep meat trade, from both national and regional perspectives.

**The nature of the problem**

Virtually all economic activity produces costs and benefits that spill over to others not party to the activity. These costs and benefits are called externalities as they are external to the decisions made by those involved in the activity. Some members of the Australian community are concerned about the welfare of live sheep being exported from Australia for slaughter in the Middle East.

While in this situation the community does not experience physical or financial impacts, as is the case with externalities such as pollution, the community does appear to place a value on the welfare of sheep being exported live from Australia.

When live sheep producers and exporters are not confronted with the full costs of production (inclusive of the animal welfare concerns of the wider community) they may be making a sub-optimal investment decision from the viewpoint of the wider society.

However, cessation of the live export trade, particularly without notice, would be costly to those currently engaged in it. This is the reciprocal nature of the problem: continuation of the trade causes concern for the welfare of the animals; while ceasing it reduces the return to the businesses involved and potentially the contribution the livestock industry as a whole makes to the economy.

Sheep have been exported from Western Australia to the Middle East in large numbers for thirty years. It appears that trade peaked in the 1980s, at a time when Western Australia regulated the slaughter and wholesale prices of lambs through the WA Lamb Marketing Board. At that time between 7 and 8 million sheep were being exported annually; live exports do not appear to have been regulated or subject to the same price controls as domestically slaughtered animals. The Lamb Marketing Board was wound up in 1999 and the assets acquired by the Western Australian Meat Marketing Company (WAMMCO), a grower-owned cooperative, which is currently the second largest sheep meat processor in Western Australia.

It also appears that Australian live sheep consumption in the Middle East is heavily subsidised and other direct and indirect policies appear to support the importation of live sheep, relative to sheep meat products. Frozen sheep meat
Australian live sheep exports

Executive Summary

attracts a 5 per cent tariff in most of the countries that are major importers of Australian live sheep.

It is highly likely that the regulation of the WA lamb market contributed significantly to the expansion of the live trade in the 1980s and 1990s. Continuing import subsidies in the Middle East are encouraging live sheep demand at higher levels than would otherwise be the case. It is understood that import subsidies are applied to ensure live sheep are available for cultural and religious ceremonies, support domestic processing in the Middle East, and as a general policy to ensure cheap food in importing countries.

These policies have influenced not only the sheep production decisions of Western Australian farmers, but also the development of processing capacity and markets for WA sheep meat products.

The result of these policies is that WA producers have responded rationally to the higher prices that have, in the past, been offered by the live export market and thus increased their gross returns. The trade-off the industry has made is that WA sheep production has become more reliant on a highly concentrated market, serviced by a very small number of merchants operating from Australia, than might otherwise be the case. Not only is this market highly concentrated, it is also prone to political risks and changes to animal welfare policies driven by the animal welfare concerns of the Australian and international community.

Live sheep exports

In 2008-09, Australia exported around 4.1 million sheep, valued at approximately $280 million (Fletcher, Buetre, & Morey, 2009). In that year, exports of live sheep accounted for around 11 per cent of total sheep turnoff in Australia and 15 per cent of the total value of sheep meat production by weight.

The vast majority (nearly 74 per cent in 2007-08) of sheep destined for the live export trade are loaded in WA (with Fremantle being the main loading port). In 2007-08, 14 per cent and 12 per cent of shipments were sourced from Victoria and South Australia, respectively. In WA, live sheep exports account for approximately 40 per cent of WA sheep turnoff.

Most sheep exported by Australia are destined for markets in the Middle East, including Kuwait, Saudi Arabia, Bahrain, Oman and Jordan. These countries account for 80 per cent of the total live sheep exports from Australia (see Figure ES 1 for their respective shares of total Australian live sheep exports to the region). Demand for Australian live sheep has been driven by consistency of product quality and low disease status. Australia’s principal competitors in
The Middle East live sheep market are Iran and North African countries, such as Somalia and Sudan. While sheep from North Africa appear cheaper than those from Australia, they are less likely to be disease-free.

**Figure ES 1** Shares of Australia’s live sheep exports to the Middle East by country (2007-08)

Data source: (MLA, 2008)

**Sheep meat exports**

The gross value of lamb and mutton production in Australia was $2.2 billion dollars in 2007-08. Of this, 45 per cent of lamb (valued at $800 million) and 82 per cent of mutton (valued at $400 million) produced are exported.

Australia is a major sheep meat¹ exporting country, dominating the world trade in sheep meat alongside New Zealand. Excluding intra-EU trade, 88 per cent of the world trade in sheep meat is sourced from Australia and New Zealand. The main export markets for Australian sheep meat are the United States, Saudi Arabia, the European Union, Japan, Papua New Guinea and Mexico.

The largest market for Australia lamb exports is the United States, where Australia has a 67.7 per cent market share, compared with 31.8 per cent for New Zealand. In 2008, the value of lamb exports to the US was in excess of $250 million. The US is also Australia’s third largest market for mutton, after Saudi Arabia and South Africa. The value of Australian mutton exports to the

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¹ Sheep meat is used in this report to mean all meat produced from sheep. Lamb and mutton are used to denote specific classes of sheep meat.
US has fluctuated between approximately $45 million and $75 million in the last five years.

As the demand for live sheep in the Middle East has increased in the past ten years, so too has the demand for sheep meat. The urban populations of many of the main importing countries are increasingly Westernised and do not have the same preference for freshly slaughtered meat as do their rural counterparts.

The demand for sheep meat is increasingly being met by large domestic and multinational supermarket chains. Between 2004 and 2008 supermarket sales increased by 77 per cent and hypermarket sales by 105 per cent. These supermarket chains account for 70 per cent of total sheep meat imports from Australia.

Currently, the largest markets for Australian lamb exports to the Middle East are the United Arab Emirates (UAE) and Saudi Arabia. In 2008, Australia exported approximately 14,000 tonnes (carcass weight) of lamb to the UAE and approximately 2,800 tonnes to Saudi Arabia, out of a total of approximately 26,000 tonnes exported to the whole of the Middle East. The value of sheep meat exports to the Middle East from WA as a proportion of the value of sheep meat exports from the whole of Australia declined from 19.0 per cent in 2000-01 to 12.9 per cent in 2002-03, before steadily increasing to 27.7 per cent in 2006-07. This is in part due to the various effects of drought across the country.

The demand for sheep meat in the Middle East has been met primarily by imports of frozen and chilled sheep meat from Australia, New Zealand, China, India, Pakistan, Uruguay and the Sudan. China has emerged as a strong competitor in the export of frozen sheep meat to the Middle East, chiefly due to the price difference between the Chinese and Australian products. However, while sheep meat exports from China to the Middle East are destined principally for Jordan, Australian exports go mainly to Saudi Arabia and the UAE.

**The meat processing sector**

The Australian meat processing industry consists of businesses mainly engaged in slaughtering livestock (excluding poultry); boning, freezing, preserving or packing meat; canning meat; manufacturing meals from abattoir by-products; or rendering lard or tallow.

In 2007-08 industry revenue totalled $12.8 billion, while industry gross product (or value added, which is the building block of Gross Domestic Product) was $2.0 billion. There were 551 businesses employing 30,405 persons. The value of exports that year was $7.9 billion.
While meat processing occurs in all States and Territories, operations tend to be concentrated in the eastern seaboard states of Victoria, New South Wales and Queensland. The scale of meat processors also tends to be larger in these states. This may be in part due to distortions caused by the lamb marketing policies of the WA Government between 1972 and 1999. The wide geographic spread of sheep production in WA would have also influenced the development of the processing sector in WA.

In Western Australia, the major export-oriented sheep meat processors are: Beaufort River Meats at Woodanilling, Fletcher International WA in Narrikup, Geraldton Meat Exporters, Hillside Meats at Narrogin, International Exporters Pty Ltd at Gingin, Walsh V & V Pty Ltd at Bunbury and WAMMCO International at Katanning. Fletcher International and WAMMCO International are the largest and second-largest meat processors in WA, respectively. The locations of these processors, as well as those that service only the domestic market, are shown in Figure ES 2.

Figure ES 2 Location of sheep meat processing facilities in Western Australia

Data source: ACIL Tasman, Geoscience Australia
Demand substitution between live sheep exports and sheep meat exports

ACIL Tasman has analysed historical sheep meat and live sheep exports to the Middle East, to determine if they are positively or negatively correlated over time. Specifically, we examined data from 1988 to 2007 for eight major export destinations of Australian sheep exports in the Middle East: Bahrain, Egypt, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE.

The results of our analysis show that in all countries except Bahrain and Oman there has been a steady decrease in live sheep imports and a rapid and sustained increase in sheep meat imports (both lamb and mutton). Our calculation of the correlation between live sheep and sheep meat (by weight) indicates a relatively strong negative relationship—that is, as sheep meat imports rise, live sheep imports fall. An important factor in this relationship is the dramatic increase in GDP growth in this region.

International prospects for increased Australian sheep meat exports

Not only is the Middle East market changing, leading to greater substitution between live sheep and sheep meat, but there is growing demand from existing and potential new markets for Australian sheep meat. This growth in demand is occurring at a time when the Australian sheep flock is declining rapidly. By 2010 Australia’s sheep flock is expected to be only 68 million head, a reduction of 30 per cent since 2005. At present the number of sheep being turned off and not replaced on the farm appears to be satisfying the majority of the demand but the current rate of turn off does not appear to be sustainable.

Global growth in sheep meat demand

According to the European consultancy GIRA, global sheep meat consumption is expected to remain strong to 2015, with a projected annual growth rate of 1.7 per cent. Sheep meat consumption is expected to remain strong because of rapid population and GDP growth, particularly in developing countries (such as China, India, and the Middle East), which have exhibited a preference for sheep meat.

The global financial crisis has slowed sheep meat demand in some markets but demand in the longer run is underpinned by rising population growth and long-term trend growth in per capita GDP.

Fortunately for Australia, global production of sheep meat is not expected to increase significantly. New Zealand supplies are, at best, expected to only increase gradually over the next several years. The only supplier likely to
expand substantially is China, but there are few global markets in which Chinese products would compete directly with quality Australian lamb. In addition, growth of China’s local demand is expected to continue and match production, leaving little room for growth in exports. Because of these factors, GIRA projects Australian sheep meat exports in 2015 to be 97,000 tonnes higher than in 2005, provided there are sufficient sheep bred to meet this demand.

In its mid 2009 sheep update, MLA forecasts substantial medium-term growth in lamb and sheep meat exports. The increase in exports is predicated on: continued growth in demand; a reduction of supply from New Zealand, contrary to GIRA forecast; and a levelling of the trend in sheep numbers in Australia, to a stable sheep flock of approximately 68 million head.

MLA’s 2009 mid-year update forecast that Australia’s processed lamb exports will rise 20,000 tonnes (or 19 per cent) by 2013, with a substantial proportion coming from growth in demand from the US and Middle East. Virtually all existing Australian lamb and sheep meat markets are expected to increase demand over the next 2-3 years.

A more detailed 2005 MLA study identified the US and China as offering high potential growth for Australian lamb sales. The market for Australian lamb in the US could grow from its 2005 level of about 40,000 tonnes to 60,000–80,000 tonnes by 2015. If per capita consumption of sheep meat in the US could be increased by 0.1 kg per annum (a 25 per cent increase on current levels) through aggressive and effective promotion, this alone would increase the annual demand for sheep meat by nearly 30,000 tonnes. Furthermore, the US trade is dominated by the more expensive lamb meat components, such as legs, loins and racks.

According to the MLA study, China is likely to provide the major sales growth for cheaper lamb cuts. The study concluded that exports of 20,000 tonnes or more to this market could be achieved, up from 13,000 tonnes in 2005.

The Middle East has a fast growing population of more than 600 million people, which is expected to grow to 870 million by 2025. It therefore represents a tremendous market for food and agricultural commodities. Consumer preferences for chilled sheep meat products are likely to continue to grow in line with GDP, increasing market share of major retailers, and requiring continued expansion of cold chain logistics and storage facilities.

Climate, lack of water and environmental issues are limiting factors for agricultural development in the Middle East. As a result, the region is likely to remain reliant on agricultural and food imports in the future.
The most promising markets for increased meat exports are expected to be: Saudi Arabia, Kuwait, Jordan, UAE, Qatar, Oman, Bahrain, Egypt, Lebanon, Morocco, Iraq, Algeria and Libya.

Apart from the US and China, the MLA study noted a number of other markets that are likely to offer growth prospects but to a more modest extent. Notable amongst these are Mexico (where the population is forecast to grow by 12 per cent by 2015. Over the same period GDP is expected to grow at 3.5 per cent per annum), Japan and countries in the Gulf Cooperation Council.

In addition, the EU and, to a lesser extent, India offer significant growth prospects if access difficulties can be resolved. While the EU is the largest sheep-meat market in the world, access is distorted towards New Zealand. New Zealand has a sheep-meat quota into the EU of 227,854 tonnes, compared with only 18,786 tonnes for Australia, despite Australia producing more sheep meat than New Zealand and the global volume of exports of both countries being similar. Australian access to the EU could improve if NZ supply continues to decline.

The continued existence of this quota imbalance is inconsistent with free-trade policies. Achieving a more equitable access to the EU market should be a priority for Australian trade negotiators.

Non-tariff trade barriers also currently preclude lamb imports into India. Apart from these barriers, the prospects for profitable commercial exports of Australian lamb to India are favourable. According to the MLA, if the sanitary standards applied to India were to ease, imports of 20,000 tonnes from countries such as Australia would be possible.

Overall, the market outlook for Australian sheep meat looks highly favourable for growth. Reducing trade barriers can only improve the industry’s export prospects.

**Economic implications of a conversion of live sheep exports to processed sheep meats**

There appears to be substantial opportunities to substitute significant quantities of Australian live sheep with Australian processed sheep meat in the Middle East.

Developing these opportunities relies on encouraging a progressive shift in demand by Middle Eastern consumers so that total demand for sheep meat from Australia is at least maintained at current levels (inclusive of meat exported live and processed). Heavy handed Government intervention in the trade (a ban) would extinguish the ability to test these opportunities.
The meat processing sector in WA

In 2007-08 approximately 5 million head were processed in WA. In 2002 the Western Australian meat industry taskforce had estimated that sheep processing capacity in WA was 8.1 million head.

In studies released by MLA in 2005 and in 2007, it was suggested that an additional 1.0 million to 1.5 million head processing capacity could be introduced into WA within 12 months following a cessation of the live export trade. This has been confirmed by our discussions with meat processors during the course of this study.

In ACIL Tasman’s consultations with the major sheep meat processors in Western Australia, the processors suggested that the industry in WA could process up to 6 million sheep annually without requiring the construction of any new processing plants. This would entail moving to two shifts per day in each processing plant, which may require the employment of some skilled abattoir workers from abroad under the ‘457 Visa’ scheme and/or the diversion of labour that would otherwise be employed by live sheep exporters.

To process domestically all of the 3-4 million live sheep domestically would require the addition of between 1.5 and 2.0 million head of additional capacity. This would most likely come from an expansion of the second and third largest processors, rather than the reinstatement of any of the plants that have been closed, which were typically smaller on average than eastern states facilities. The expansion of the second and/or third largest processors would require considerable capital investment but would secure a considerable increase in the economies of scale currently not present in the WA sheep processing sector.

The effects of this increase in turnover on the WA economy as a whole, and regional economies in particular, could be considerable, as there appear to be significant differences between the value added multiplier created by the live export trade and exporting sheep meat; for every $100 of additional output from exporting sheep live, the additional Gross State Product (GSP) produced appears to be $82.50; for every $100 of additional output in the meat processing sector, GSP rises by $101.50.

Impact on the live export supply chain

If all of the sheep currently exported live were processed domestically, many, if not all, of the activities in the supply chain for live sheep could be re-directed to other uses at relatively little cost. For example:

- Industry levies and charges paid by the live export sector are also payable on slaughtered animals.
• Receival fees, weigh bridge and other port charges would be replaced by sale yard fees, agents fees and abattoir fees.
• Virtually all transport services would be diverted from transporting live sheep to port, to moving live sheep to abattoir and sheep meat products to port. It is also likely that the sheep feed now used to condition the sheep to the fodder used on the ship, would be used instead to finish sheep for slaughter (anecdotally, prime lamb feed lotting appears to be expanding in Western Australia).
• Most of the AQIS fees, port costs, wharfage and other FOB charges (getting the sheep from the dock onto the ship and out to sea) would still be incurred in exporting chilled sheep meat products in containers.
• The bulk of shipping fees on live export vessels that would be foregone if the live export trade ended, are not relevant. They are revenues earned by foreign owned entities and thus do not contribute GSP or GDP to the Western Australian and Australian economies.

Reducing the animal welfare concerns of the export of live sheep

Part of ACIL Tasman’s brief for this project was to look at the ways in which the externalities associated with the live sheep export trade could be reduced. This can be achieved in two broad ways:
• improving the conditions for the animals in transit
• reducing the total number of animals exported live from all origins globally.

Improving animal welfare by reducing the total number of sheep exported live requires a net global reduction in sheep exported live. There is unlikely to be any welfare gain if exports of Australian sheep are replaced by sheep from other sources. Indeed, there could be a reduction in net welfare if the welfare standard in the alternative source is lower than that of Australia, or if the sheep have to travel further.

Reducing the effects of live export subsidies

The least cost way of reducing the externalities of the trade for Western Australian farmers and the WA economy, is to increase the level of substitution between Australian (and even global) live sheep and Australian processed sheep meat, in the major countries importing live sheep.

This would ensure that:
• There is limited substitution between Australian live sheep and sheep from other origins.
• The full value-adding opportunities can be captured by the WA economy.
Australian live sheep exports

- There would be a corresponding reduction in the reliance of the WA sheep industry on the live sheep trade to the Middle East, which is dependent on continuation of subsidies and other trade distortions. The Middle East market can be characterised as having high intervention risks, with a relatively small number of countries serviced by a small number of exporters, and prone to animal welfare concerns.

Substitution of Australian processed meat for Australian live sheep could be achieved using a number of strategies, including:

- Correction of the distortions caused by the subsidies by applying them to both live and processed products
- Removal of the 5 per cent tariff on frozen sheep meat that is applied in a number of Middle Eastern countries
- Greater dedicated marketing by government and industry, designed to promote Australian processed sheep meat products in the Middle East
- Vertical integration between the WA sheep industry and the Middle East, e.g. Middle Eastern investment in major processing facilities and/or an alliance between WA processors and major sheep meat wholesalers.

A reduction of the subsidies, and/or their application to processed products, requires Australian governments to lobby the major subsidising importing countries. Lobbying to reduce the distortions of the import subsidies appears to be in the interests of the Western Australian economy and animal welfare groups if the live sheep are substituted with sheep meat processed in WA. If this substitution is achieved WA farmers may be no worse off if it leads to improved processing efficiencies that they would in part benefit from, and it would lead to a reduction in the reliance on the Middle East market.

Other strategies for increasing sheep meat exports

Creating new or additional demand for WA processed sheep meat in other non-Middle Eastern markets would also provide opportunities to redirect sheep otherwise destined for the live sheep trade. There appear to be a number of existing markets, but to maximise their net value it would require reduced trade barriers for Australian sheep meat exports to Europe and India.

Strategies for increasing sheep meat exports, other than through trade negotiations, include undertaking more intensive international promotional campaigns and raising Australia’s international competitiveness through investments in research, development and extension. This could involve finding ways to increase the efficient use of water and energy, improve the recovery of saleable meat and edible offals, and improve working conditions. Other key areas where R&D can help increase competitiveness are: increasing reproductive rates, decreasing mortality rates, reducing age at sale, and lowering the cost of production.
Encouraging investment in modern processing capacity in WA

It is likely that the effects of the Lamb Marketing Board are still being felt in the WA processing sector. IBIS World data suggests that, on average, WA processors are smaller than those in the eastern states. This could in part be due to the WA Government’s lamb market intervention. Other possible factors include the geographic spread of sheep production and poor quality roads when the sites for these facilities were being chosen.

Improvements in the efficiency of the WA processing sector will make its meat products more competitive with the live sheep trade, even if the trade distortions remain. An increase in the capacity of one of the second-, third- or fourth-largest processors in WA would enable significant economies of scale to develop. This would reduce processing costs, some of which would be shared (in a competitive market) with sheep producers and consumers, and may translate to increased sales.

Increased processing efficiency could also be achieved by investments in research and development by the industry and governments.

Achieving significant scale economies in some of the existing plants would require a considerable level of investment. The ability of the current owners of these facilities to make such investments, particularly with the precarious state of the WA sheep flock, is likely to be seriously limited. This may be particularly so for WAMMCO, which is a cooperative. Some consideration should be given by WAMMCO members to the ability of the cooperative to raise the amount of capital to significantly increase its capacity, and whether their interests as sheep producers may be better served by demutualising and selling the processing facilities to a well-capitalised company. This may even raise the possibility of vertically integrating a portion of the WA processing sector with Middle Eastern processing, wholesaling, distribution, or retailing interests.

At present, WA sheep producers who are members of WAMMCO are potentially seeing their equity in the cooperative being eroded by the subsidies paid to the live export sector by some countries in the Middle East.

However, large investments in processing capacity raises a broader ‘investment sink’ issue if the WA sheep flock continues to decline. Continuation of the live export trade or an increased utilisation of exiting sheep processing capacity would not incur any additional significant investment.

Progressive tightening of animal welfare standards

While substitution and trade diversion are policies the Government and farmers could adopt to improve animal welfare, another is to increase the welfare standards of live exports.
Animal welfare, as measured by mortality rates, appears to have improved significantly for Australian live export sheep.

Progressively tightening animal welfare and safety standards would mean that Middle Eastern consumers would be confronted with more of the cost of the animal welfare concerns of the Australian community. The effect of this policy is that it would become increasingly more expensive and less profitable (perhaps even ultimately uneconomic) to export live sheep (unless buyers in the Middle East were willing to pay a large premium for improved animal welfare and safety practices).

An increase in the welfare standards, where the Middle East consumer bears at least some of the costs as they are passed through and not subsidised would lead to an increase in substitution of live sheep with processed meat. However, it may also increase the level of subsidy paid by Middle Eastern governments that would be required to support the live sheep trade. If the subsidy were simply raised to offset a rise in welfare standards then there is unlikely to be significant substitution with sheep meat.

Businesses in the live sheep supply chain that can most efficiently improve their animal welfare and safety practices (or who have already adopted good practices) will be able to continue exporting longer than other businesses. This self-selection process favours economic efficiency.

A drawback of this policy is that it may be difficult for the Australian Government to dictate and enforce animal welfare standards once the sheep are unloaded at the foreign port. Some will also argue that a long sea voyage, across multiple climatic zones, will always be stressful to an animal and inhumane, regardless of how high welfare and safety standards have been set.

Another risk of this policy is that, as animal welfare standards of Australian sheep are progressively improved, live sheep from other sources could be substituted for Australian sheep. If these sheep are not managed to the same standard, there may not be any welfare gains from this approach.

**Market-based allocation of declining export permits**

To ban the trade, the Government would need to be convinced that the net gain in animal welfare exceeded the costs to the industry and the economy from a cessation of the trade. Banning the trade incurs a risk of over-estimating the animal welfare gains and reducing economic activity. Sound risk management principles suggest that lighter handed policy instruments should be considered by Government and possibly tested before heavy handed policy options are imposed.
As noted previously, banning or restricting the trade also runs the risk of live export customers substituting live sheep from alternative suppliers for Australian sheep. This raises the risk that, unless the trade is banned by all sheep producing countries, or universal animal welfare standards are established, there is no net welfare gain and possibly a welfare loss.

The cost of phasing-out the trade could be reduced by imposing a declining quota on the number of live sheep that can be exported each year, with various means of allocating the quota to WA farmers.