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Summary

Australia’s livestock export industry has developed over a number of decades to meet the needs of its markets. South-East Asia’s development of feedlot industries in the 1980s and 1990s and the associated demand for feeder cattle resulted in the northern Australian cattle industry increasingly specialising in production of feeder cattle, initially for the Philippines and then Indonesia. Likewise the sheep export industry, mainly in Western Australia, has developed to meet the needs of markets, principally in the Middle East and North Africa, by maximising production of wethers suitable for long-distance shipping rather than for prime lamb or wool production.

Yet the livestock export industry has come under pressure in recent years with a number of significant changes altering the operating landscape. These include changes to import policies in our largest cattle market, Indonesia, as a result of the Indonesian Government’s self sufficiency aspirations and interruptions to some of our largest live export markets as a result of animal welfare incidents. Demand has grown in other markets, providing opportunity for diversification of trade.

This report presents information on domestic and international factors that drive the export of livestock for feeder or slaughter purposes and assesses the benefits to producers and the economy in export returns, farm incomes and employment.

Key findings

- Australia typically exports around 500 000 to one million head of cattle for feeder or slaughter purposes each year, which generally accounts for between 6 and 10 per cent of annual cattle turn-off. Most are exported to South-East Asia, particularly Indonesia.

- Around two to three million head of sheep are exported each year, predominantly to the Middle East. Australia’s live sheep exports have declined considerably since the 1980s, when annual exports frequently exceeded six million head each year.

- Australia typically exports between 60 000 and 80 000 live goats, representing around 3 to 4 per cent of goat turn-off. Most are destined for Malaysia.

- The value of live cattle exports has ranged between $400 million and $600 million a year (in 2013 dollars) over the past 10 years. Over the same period, the value of live sheep exports has ranged between $170 million and $350 million a year and for live goats between $8 million and $14 million. In 2013 the combined value of cattle (excluding breeder and dairy cattle), sheep and goat exports was $685.5 million.

- The majority of cattle exported are sourced from northern Australia and are typically Bos indicus breeds such as Brahman, which are more suited to tropical climates. Western Australian farms supply the majority of sheep for export and are more reliant on the live trade than producers in eastern Australia. Goats are mainly sourced from New South Wales, South Australia and Queensland and are typically transported by air to their destination.

- According to the ABARES Australian Agricultural and Grazing Industries Survey (AAGIS), of an estimated 1500 farm businesses identified as beef cattle specialists in the northern live cattle export region, around 180 derived more than half their receipts from live exports in the three years ending 2012–13. Those most reliant on the live export trade were located in the Kimberley and Pilbara regions of Western Australia and the upper western portion of the
Northern Territory. For farms selling sheep, live exports accounted for a larger share of
sheep and lamb receipts in Western Australia (48 per cent) than in the other states (around
30 per cent).

- The livestock export industries—including in ancillary industries such as transport,
veterinary and feedlot services—generate employment for between 8000 and 10 000
people. The live cattle export trade also provides employment opportunities for Indigenous
people in the northern Australian live export region.

- Australia is one of more than 100 countries exporting livestock globally. In 2011 Australia
was the fifth-largest exporter of live cattle but the second-largest exporter of live sheep and
the 13th-largest exporter of live goats.

- The primary markets for Australian livestock exports are South-East Asia, the Middle East
and North Africa. Other markets include North Asia and, until recently, Turkey.

- Australia is the main exporter of livestock to South-East Asia. Australia’s main competition
in the region is from intra-regional trade (cattle from Thailand and goats from Indonesia) as
well as beef from low cost suppliers (India, Brazil and Uruguay).

- Australia’s share of Middle East sheep imports has declined over the past decade, while
Africa’s share has increased, despite Australian sheep generally being preferred in several
countries because of their consistent quality and healthy status. Australia’s major
competitors in the Middle East are African and European countries and significant intra-
regional Middle East trade.

- North African countries are relatively small importers of live animals. In Egypt Australia’s
major competitors are Brazil, Ethiopia, Sudan and Croatia. Romania is the dominant supplier
of live cattle and live sheep to Libya.

- Australia does not currently export feeder and slaughter cattle to China, but strong
commercial interest exists in developing a trade. Japan’s demand for imported live animals is
relatively small, accounting for 2 per cent of Australia’s feeder and slaughter cattle exports in
2013.

- In Australia’s livestock export markets, a number of factors determine an importing
country’s demand for live animals over meat. These factors also influence the likelihood of a
country substituting Australian live animals with meat imports. They include:
  - preference for domestic slaughter for religious, cultural or other reasons
  - lack of refrigeration and cold chain facilities
  - support for local feedlot/meat processing industry
  - lower tariffs or higher subsidies for imported live animals than imported meat.

- In South-East Asia, cultural and religious preferences, declining domestic herds and a lack of
infrastructure drive demand for livestock imports. The potential for meat imports to
substitute for live cattle imports has increased in recent years, reflecting improving
availability of refrigeration and increasing supply of low-cost beef imports. However, in
some parts of South-East Asia live cattle imports remain important because of limited
household refrigeration and cold chain facilities. In these areas, Australian live cattle and
imported beef are not readily substitutable.
• In the Middle East, substitutability between Australian live sheep and sheep meat imports has increased in recent years, largely reflecting growth in incomes, urbanisation, refrigeration availability and popularity of western style supermarkets. However, demand for live animal imports is particularly strong during religious festivals such as Eid-ul-Adha.

• While Middle East consumers strongly prefer meat from freshly slaughtered animals for religious and cultural reasons, they are likely to purchase imported meat if given no alternative. Bahrain increased its imports of sheep carcasses from Australia recently. Its government-subsidised meat market used them to make up for a shortfall of live sheep after the Australian industry suspended live exports to Bahrain from 2012. Bahrain turned to other suppliers of live sheep, principally Somalia, around the time of Eid-ul-Adha but relatively high prices and health concerns constrained demand for African sheep.

• Substitution of imported beef for live imports has also been observed in North Africa. Egypt and Libya prefer to import live animals over meat, partly because of distrust in foreign halal products. However, evidence shows that Egypt has accepted substitution of imported meat for live animal imports, particularly during periods of restricted access to livestock imports because of disease concerns.

• In Israel the desire to use domestic slaughtering capacity drives cattle imports. Similarly, the ability of feedlots to create jobs was regarded politically as highly desirable in the early development of the Indonesian trade.

• In Turkey substitutability between live animal imports and imported meat is low because of high tariffs on meat imports.

• Absence of Australian livestock in overseas markets does not necessarily directly translate into potential for increased meat imports from Australia. Many other countries supply meat less expensively and, for livestock, Australia has many competitors in Africa and Europe.

• A number of factors risk constraining the sustainability and growth of Australia’s live export trade, including transport, meat processing, market access and animal welfare:

  - Transport—Northern Australian road networks vulnerable to wet season disruptions shorten the season of availability of cattle for export. Poor road conditions can also affect the health and wellbeing of livestock transported long distances. Port congestion and competition with other industries for berths cause delays and increase costs for exporters. The Australian Government is focused on improving transport infrastructure through the Agricultural Competitiveness White Paper and the White Paper on Developing Northern Australia and an audit of existing nationally significant infrastructure in Australia.

  - Meat processing—Meat processing facilities planned for northern Australia may increase competition for livestock. However, irrigation is likely to be required to support production of grain and fodder to grow out cattle for slaughter. In the short to medium term, a meat processing sector in northern Australia is likely to complement and benefit the live export trade, providing a market for older and out-of-specification cattle that currently have little value.

  - Market access—Imports of Australian cattle, sheep and goats in foreign markets are generally subject to low tariffs. However, Australia faces challenges in technical market access issues and self-sufficiency policies to gain market access. Ongoing government and industry efforts to improve access will be important.

  - Animal welfare—There has been considerable community concern in Australia over the welfare of livestock exported to foreign markets. However, the Australian Government
and industry are working together to ensure the welfare of livestock across the entire supply chain through the Exporter Supply Chain Assurance System (ESCAS) and other measures such as training and capacity building in overseas markets.
1 Introduction

Australia’s livestock exports are an important component of the Australian cattle and sheep industries, adding significantly to the total value of Australian farm exports. In each of the three years to 2011–12, live exports of all cattle (feeder/slaughter, breeder and dairy), sheep, goats and buffalo totalled around $1 billion or around 3 per cent of Australia’s total farm export revenue. In 2012–13 export revenue received from live exports fell by around 20 per cent to $790 million as a result of tighter import restrictions in Indonesia, Australia’s largest live cattle market, and interruptions in trade to some of our important sheep markets in the Middle East.

Australia’s live animal export trade has transformed over the past two to three decades. Initially the trade provided opportunistic income to producers, such as from the export of sheep that were beyond their wool-producing prime. This has evolved to a specialised industry producing animals to the specification of importing countries. This is perhaps most evident in the development of the feeder cattle trade from northern Australia. Breeding and management systems were developed to produce young cattle for South-East Asian feedlot sectors, firstly in the Philippines and subsequently in Indonesia.

The importance of South-East Asian markets to live cattle exports and Middle East markets to sheep exports is shown in Figure 1 and Figure 2. The fact that live exports are a relatively small share of total turn-off in both the cattle and sheep industries can also be seen. In 2013 live cattle exports represented 7 per cent and live sheep 6 per cent of total turn-off in their respective industries, with the remaining livestock disposals processed in Australia for domestic meat consumption or meat export. Nevertheless, some regions of Australia have a high reliance on the live trade and the share of turn-off in these regions for live export is much larger. This is particularly so in northern Australia for cattle and in southern Western Australia for sheep.

Since 2010 significant changes have altered the operating landscape of the live export industry: the Indonesian Government’s beef self-sufficiency aspirations resulted in import restrictions in our largest cattle market; animal welfare incidents resulted in trade interruptions in some markets; and the Australian Government implemented the Exporter Supply Chain Assurance System (ESCAS) to assure improved animal welfare outcomes for Australian feeder and slaughter livestock in destination countries.

The Australian Government Department of Agriculture commissioned ABARES to conduct an economic assessment of the live animal export trade. The assessment considers: the drivers of demand and the supply situations in our major export markets; the potential for meat imports to substitute for live animal imports; the domestic drivers of the live export industry, including the reliance of some regions in Australia on the trade; revenues received and farm performance of Australian producers engaged in live exports; and the flow-on effects of the trade to the wider Australian economy in export returns and employment. It also canvasses issues affecting the sustainability of the live export trade. The assessment covers the export of cattle, sheep and goats for feeder or slaughter purposes—breeder and dairy cattle are not included. For sheep and goat exports, breeding animals cannot be disaggregated. Nevertheless, these are assumed to account for a very small share of the trade in these animals.
Figure 1 Australian beef cattle industry, 2013

- Live export: 7%
  - Northern ports: 74%
  - Southern ports: 26%
- Domestic slaughter: 93%
- Domestic beef consumption:
  - Northern meat processing (Qld): 48%
  - Southern meat processing: 52%
- Beef exports:
  - Northern meat processing: 85%
  - Southern meat processing: 57%
- Commercial slaughter
  - Northern ports: 74%
  - Southern ports: 26%
- Domestic beef consumption:
  - Northern meat processing (Qld): 48%
  - Southern meat processing: 52%
- Beef exports:
  - Northern meat processing: 85%
  - Southern meat processing: 57%
- Domestic beef consumption:
  - Northern meat processing (Qld): 48%
  - Southern meat processing: 52%
Figure 2 Australian sheep meat industry, 2013

Australian producer

- Live export 6%
  - Fremantle 82%
    - Kuwait 40%
    - Qatar 29%
    - Jordan 15%
    - UAE 5%
    - Israel 3%
    - Oman 3%
    - Other 5%
  - Other ports 18%
    - Jordan 15%
    - UAE 5%
    - Israel 3%
    - Oman 3%
    - Other 5%

- Domestic slaughter 94%
  - Domestic sheep meat consumption 34%
    - Middle East 26%
    - China 26%
    - United States 12%
    - Malaysia 5%
    - Other 31%

- Sheep meat export 66%
2 Australia’s red meat livestock industries

Australia’s beef cattle industry

Australia’s beef cattle industry comprises around 70,000 producers and, as at June 2013, a herd of around 26 million head (ABS 2014a). More Australian farms are engaged in running beef cattle than are involved in any other form of agricultural activity, with around 55 per cent of all Australian farms carrying beef cattle. These farms manage more than 75 per cent of the total area of agricultural land in Australia (Martin et al. 2013).

The estimated gross value of production of beef cattle and calves was around $7.7 billion in 2012–13 (Figure 3) (ABS 2014b). Averaged over the two decades to 2012–13, sales of cattle for domestic slaughter accounted for the greatest share of farm gate gross value at 93 per cent, followed by live export of feeder/slaughter cattle (6 per cent) and export of breeder cattle (1 per cent).

Figure 3 Gross value of cattle and calf production, Australia

Beef cattle production is the most geographically widespread agricultural industry in Australia, with operations in each state and territory. Queensland has the largest beef cattle herd at 12.6 million head, followed by New South Wales (5.6 million head), Victoria (2.4 million head), the Northern Territory (2.2 million head) and Western Australia (1.9 million head).

The beef industry is highly export oriented and Australia is the third largest exporter in the world (in terms of volume) (USDA–FAS 2014). Of the 2.4 million tonnes (carcass weight) of beef produced in Australia in 2013, around 68 per cent was exported. Australia’s major markets for beef and veal are Japan, the United States, the Republic of Korea and China. These markets accounted for 73 per cent of beef and veal exports in 2013.

Cattle production systems in northern and southern Australia vary because of the difference in soil quality and climatic conditions. Northern Australia—generally above the Tropic of
Capricorn—accounts for around 49 per cent of the national herd and comprises mainly *Bos indicus* cattle breeds ideally suited to tropical climates (Map 1) (Gleeson et al. 2012). The cattle in southern Australia are mainly *Bos taurus* breeds such as Angus and Hereford, which are more suited to the temperate southern climate.

Cattle farming operations in northern Australia are generally larger than those in southern Australia. This offsets lower productivity from the poor pasture conditions caused by a harsher climate and poor soil quality. For example, in northern Australia 87 per cent of the beef cattle herd is on properties with more than 800 head of cattle, compared with only 38 per cent in southern Australia (Martin et al. 2013).

**Map 1 Northern and southern Australia**

Source: ABS

**Live cattle exports**

The live export trade is the primary focus of the beef cattle industry in the upper Northern Territory and the Kimberley and Pilbara regions of northern Western Australia—where *Bos indicus* breeds, predominantly Brahman and Brahman crossbreeds, dominate (Gleeson et al. 2012). Restructuring of the cattle sector in these regions in the 1970s and 1980s, as a result of the Australian Government’s Brucellosis and Tuberculosis Eradication Campaign (BTEC), led to improvements in herd management, animal husbandry techniques and animal genetics. In particular, the region was restocked with *Bos indicus* breeds, which have a much greater tolerance to heat and are tick resistant. These cattle were important to the development of the live export trade as they provided a product that was competitive with local stock in export markets (Drum & Gunning-Trant 2008).

In northern Australia, strong export demand in the early 1990s resulted in cattle being diverted from domestic processing to live exports, and the number of abattoirs fell. Production in the northern live export region is based on a breeder/feeder production system, where cattle are turned-off younger for export or sold/transferred to fattening properties elsewhere. In southern Australia, production systems are mainly oriented toward finishing cattle for slaughter and processing domestically.
Australia’s main markets for live cattle exports are in South-East Asia, in part because of the proximity of the northern cattle producing region to these markets. In 2013, Australia exported 727,009 head of cattle to Indonesia, accounting for 62 per cent of exports. Other important markets in South-East Asia include Vietnam (9 per cent), Malaysia (6 per cent) and the Philippines (3 per cent). Israel was also an important destination in 2013, accounting for 13 per cent of exports. Potential trade may be developing with Russia, with a shipment of 30,000 head of cattle exported in April 2014. In addition, commercial interest in establishing exports of cattle to China is strong.

**Figure 4 Australian feeder and slaughter cattle exports, by destination**

Source: ABS 2014c

**Australia’s sheep industry**

Australia has around 42,000 sheep producers and, as at 30 June 2013, a national flock of around 75.6 million head (ABS 2014a). The sheep industry has two primary outputs, wool and sheep meat, and market conditions for each commodity affect the size and composition of the national sheep flock. Flock numbers have fallen from around 170 million head in 1990, following the collapse of the wool reserve price scheme. The Australian sheep industry underwent considerable adjustment, with many wool producers responding to falling wool prices by shifting into lamb production or cropping (Caboche & Thompson 2013; Dahl et al. 2013). As producers shifted into lamb and increased breeding stocks, the proportion of wethers in the adult sheep flock fell.

In 2012–13, the estimated gross value of production was around $2 billion for sheep slaughtered domestically and $194 million for live sheep exports (Figure 5) (ABS 2014b, 2014c). Live sheep exports fell from around 20 per cent of sheep gross value of production in 2002–03 to 9 per cent in 2012–13.

New South Wales has the largest sheep population of all the states with around 27.8 million head, ahead of Victoria (16.1 million), Western Australia (15.5 million) and South Australia (10.8 million) (ABS 2014a). The Australian sheep flock is mostly concentrated around the wheat–sheep and high rainfall zone in these states, while smaller sheep populations also exist in Australia’s pastoral zones and in various parts of Queensland and Tasmania (Map 2).
The Australian sheep meat industry is highly export focused and accounts for around 6 per cent of world sheep meat supply (MLA 2014a). Of the 682 000 tonnes (carcass weight) of lamb and mutton produced in Australia in 2013, around two-thirds was exported. Australia’s major export markets for sheep meat are in Asia (predominantly China), the Middle East and the United States. These three markets accounted for 82 per cent of Australian sheep meat exports in 2013.

**Live sheep exports**

Australian live sheep exports grew substantially during the 1970s, as rising incomes and population growth resulted in increased meat demand in the Middle East (Figure 6). During this period, Australian wool-producing farmers, requiring an outlet for wethers at the end of their wool-productive life, were well suited to meet the growing demand of these emerging live
export markets (Kingwell et al. 2011). Sheep exports continued to grow in the 1980s, peaking at 7.3 million head in 1983.

Australian live sheep exports declined in the 1990s, following disruptions in trade to several markets and a fall in the number of sheep available for export. Since the early 2000s, sheep exports have continued to decline. The number of Australian live sheep exports fell to 1.97 million in 2013, the lowest recorded since 1975.

**Figure 6 Australian exports of sheep for slaughter**

In 2013 the major markets for live sheep were Kuwait, Qatar, Jordan and Oman (Figure 7). Saudi Arabia and Bahrain have also been significant export markets during the past 10 years.

**Figure 7 Australian exports of sheep for slaughter, by destination country**

Note: Exports for 2012 and 2013 contain sheep for purposes other than slaughter.

Sources: ABARE 1992, ABS 2014c, BAE 1983
The Australian live sheep export trade is highly concentrated in Western Australia. Live sheep exports represented 47 per cent of sheep meat industry gross value of production in Western Australia in 2012–13 (ABS 2014b, 2014c). According to ABARES Australian Agricultural and Grazing Industries Survey (AAGIS), approximately 38 per cent of farms in Western Australia sold sheep for live export in 2012–13, compared with 3 per cent of farms in Victoria and 1 per cent in South Australia.

Like all other Australian states, the Western Australian sheep flock has declined significantly since the early 1990s, largely reflecting a shift in land use to grain production, particularly wheat (Figure 8). This decline in sheep numbers, particularly merino wethers, has reduced the supply of sheep available for export.

Figure 8 Sheep numbers and hectares planted to winter crops, Western Australia

![Graph showing sheep numbers and hectares planted to winter crops, Western Australia](image)

Source: ABARE, ABS 2014a

**Types of sheep exported**

Merino and first-cross wethers are the most common type of sheep exported live and are typically aged between one and two years. Results from a survey of Western Australian sheep producers showed that 80 per cent of producers supplying wethers for the live export trade indicated that the average age of sheep supplied was two years (Kingwell et al. 2011). Around 60 per cent of sheep exported from Australia by sea in 2012 were classed as adult wethers, while another 19 per cent were lamb wethers and 8 per cent were hogget wethers. Rams and ewes accounted for 8 per cent and 5 per cent, respectively (Norris & Norman 2013).

The existence of the live sheep export trade in Western Australia has influenced the flock structure of some sheep producers, who maximise production of wethers suitable for shipping rather than prime lambs or wool. Production of shipping wethers, rather than prime lambs, is suited to crop-dominant farmers who prefer a sheep enterprise that requires less time and management (Kingwell 2011). Wethers have a longer selling window than prime lambs and, on average, have lower finishing costs, particularly in the face of varying seasonal conditions. Another source of sheep for live export is specialist lamb producers. For these enterprises, live exports provide an outlet for lambs that could not be brought up to slaughter weight in their short selling window (Kingwell et al. 2011).
Some exotic, fat-tailed breeds of sheep, such as the Awassi and the Damara, were introduced into Western Australia because of high demand for these varieties in some Middle Eastern markets. The Awassi breed genetics were imported from Israel in the 1980s after the breed was identified as having potential to supply premium live sheep markets in the Middle East. A flock was built up on the Cocos Islands under Australian quarantine provisions and introduced to mainland Australia in 1993 (Livecorp 2004). Breeds such as these, originating from Africa and the Middle East, are well suited to farms on more marginal land as they can withstand drier pasture conditions.

Demand for Australian fat-tailed sheep breeds, however, has fallen in recent years. Exporters have reportedly had problems introducing traceability requirements in abattoirs that process these breeds, while increased competition from other export markets, such as North Africa, has resulted in a decline in demand for these breeds from Australia (Prendergast 2012). In response, commercial processing trials for Damara sheep were undertaken in Western Australia in 2013 to test the suitability of the carcasses for domestic slaughter (DAFWA 2013; Grieve 2013). Uptake from processors has been limited because of quality and supply constraints, and demand for live Damara sheep from importing countries has remained weak in 2014. These factors have led to producers in rangeland areas opting for other specialty meat breeds, such as Dorper.

**Australia’s goat industry**

Goats are a versatile animal used to produce meat, milk, fibre (cashmere and mohair) and skins. In Australia, goat meat production has the highest value among these industries. In 2011–12 the gross value of goat meat production was around $81 million, compared with $11 million for goat dairy production and $1.5 million for goat fibre production (Foster forthcoming).

Goats were introduced to Australia with the first fleet in 1788. Some of those goats escaped into the wild and evolved into what are now called Australian rangeland goats (GICA 2014). Today, around 90 per cent of the goats slaughtered for meat production in Australia are rangeland type goats, the majority of which are found within Australia’s pastoral zone (Map 2) (MLA 2014b). The Australian rangeland flock is widely spread and estimated at between four and six million head (MLA 2014c).

Specialist meat breeds, such as the Boer goat and Kalahari red goat, are also produced and slaughtered in Australia. The Boer goat originated in South Africa and is the only breed of goat that has been specifically bred for meat production. Boer goat genetics were first imported into Australia in the late 1980s and released from quarantine in the mid 1990s. An extensive cross-breeding program using Boer bucks in Australia has led to good availability of Boer–rangeland crossed goats (MLA 2008). Crossing the breeds reduces the time to reach slaughter weight for rangeland goats and introduces hybrid vigour to the goat flock. The Kalahari red goat evolved in the Kalahari Desert in South Africa and is well suited to conditions in the Australian pastoral zone (GICA 2014). Specialist fibre and dairy goats can also be used in meat production when turned off from production of their primary outputs. The managed goat flock in June 2012 was around 516 000 head, with the majority of the flock in New South Wales (46 per cent), Queensland (39 per cent) and Victoria (10 per cent) (MLA 2014c).

Australia is a relatively small producer of goat meat but is the world’s largest exporter. Australia slaughtered approximately 2.07 million goats in 2013, yielding around 31 700 tonnes of goat meat (MLA 2014b), around 95 per cent of which was exported. In 2013 the major export destinations for Australian goat meat were the United States (47 per cent), China (14 per cent) and Taiwan (12 per cent).
Live goat exports

Live goat exports represent around 3 per cent of total goat turn-off in Australia. Since 2010 Australia's annual live goat exports have ranged between 60,000 and 80,000 head (MLA 2014c). The majority of live goat exports come from New South Wales (34 per cent in 2013), South Australia (34 per cent) and Queensland (26 per cent). Malaysia is the major export market for Australian live goats, accounting for around 80 per cent of live goat exports in the 10 years to 2013, the majority of which were air freighted.
3 Live export markets

Australia is a significant exporter of live cattle and sheep on a global scale. While Australian exports are subject to competition from other exporting nations, the disease-free status and high quality of Australian livestock contributes to Australia’s competitiveness as a supplier. The primary markets for Australian live exports are South-East Asia, the Middle East and North Africa. North Asia is also an important market, as was Turkey between 2010 and 2012. Important drivers of demand for live animals in many of these regions include religious and cultural preferences, particularly in South-East Asia and the Middle East (see Box 1). Other demand drivers include a lack of cold chain infrastructure and the desire to increase domestic value from livestock supply chains.

Government policies also affect the livestock trade. Australia’s cattle exporters felt this most keenly when the Indonesian Government imposed weight restrictions and import quotas to restrict imports, as a result of its self-sufficiency drive (see Box 2). Other policy interventions (government and/or industry) include suspending trade as a result of animal welfare or alleged disease concerns (see Box 3 on Bahrain as an example). The Australian Government’s Exporter Supply Chain Assurance System (ESCAS) has also resulted in a halt to trade with those markets yet to develop ESCAS-compliant supply chains. For example, the lack of ESCAS-compliant supply chains in Saudi Arabia has resulted in the halting of trade to that market.

The potential to substitute imported meat for live imports has increased in many of Australia’s export markets in recent years. This is particularly true for parts of the Middle East where the availability of household refrigeration has increased. While many consumers in this region continue to prefer freshly slaughtered meat, the ability and willingness of consumers to purchase imported meat has increased. However, this is not the case in some parts of South-East Asia, where limited cold chain facilities and lack of household refrigeration result in lower substitutability between live imports and meat imports.

Box 1 Case study: Religious and cultural preferences

While all Australian sheep meat and beef exports to Muslim countries are slaughtered consistent with Islamic law—that is, to halal specification—many Muslim consumers prefer animals to be slaughtered in country under the supervision of local religious officials (Department of Agriculture 2011; MLA 2014d). In these countries demand for live animal imports and meat from freshly slaughtered animals peaks around religious festivals, particularly Eid-ul-Adha (festival of sacrifice) and Eid-ul-Fitr (festival of breaking of the fast). Eid-ul-Adha, known as Korban in Singapore, occurs at the end of the Hajj (annual Islamic pilgrimage to Mecca). Muslims who can afford it traditionally celebrate the holiday by slaughtering a cow, goat, sheep or camel as part of a symbolic act. It is customary to keep one-third of the meat produced and to divide the remaining meat among relatives and poor residents (Rooplall 2013). Eid-ul-Fitr, known as Idul Fitri in Indonesia, occurs at the end of Ramadan (Islamic holy month of fasting).

The purchase of live animals and fresh meat from traditional markets is an important cultural practice in much of the Middle East and South-East Asia. For example, in the Middle East people purchase live sheep primarily in markets. Buyers can view the slaughter of animals they purchase to ensure the meat they receive is from their chosen animal and it has been slaughtered in line with religious customs (Drum & Gunning-Trant 2008). A premium is often paid for freshly killed meat (Manton-Pearce 2013).

In Israel and other countries with Jewish populations, demand for kosher meat contributes to demand for live animal imports. Kosher meat is from animals slaughtered according to the specific religious requirements of Judaism, including use of equipment such as a turning box (used to hold the animal still at ninety degrees). Stunning prior to slaughter is forbidden and, additionally, the health of the animal is judged post-slaughter before the meat is declared kosher. Kosher meat is traded internationally, but foreign slaughter plants must be approved by the Chief Rabbinate of Israel (Drum & Gunning-Trant 2008).
This chapter presents information about each of the major markets for Australia’s live exports: the drivers of demand; local supplies of animals for meat production; their imports from all sources, including Australia; and the potential for meat imports to substitute for live animal imports. The analysis in this chapter is based largely on data from the United Nations Statistics Division and the Food and Agriculture Organization databases. Live cattle, sheep and goat data may include some breeder animals but these account for a small share of the overall trade. Dairy cattle are excluded from the analysis.

Global export of live animals

Australia is one of many nations exporting live animals but features prominently as the world’s fifth-largest cattle exporter and second-largest sheep exporter. Australia is not as significant in live goat exports, ranking 13th in the world.

In 2011, 95 nations exported a total of 10.4 million head of cattle. Mexico was the largest exporter of cattle, with other large exporters in Europe and North America (Table 1). Australia’s exports accounted for around 6 per cent of global cattle exports in 2011, with South-East Asia the main destination.

Sheep were exported by 80 countries, with the global tally around 15 million head in 2011. Sudan was the largest exporter in 2011, followed by Australia, Somalia and Romania (Table 2). Australia’s exports accounted for around 16 per cent of global sheep exports in 2011, with the Middle East region the primary destination for Australian sheep.

Around six million goats were exported by 63 countries in 2011. The major exporters of goats were Somalia, Iran, Oman (most likely re-exports) and India (Table 3). Australia’s exports accounted for only 1 per cent of global exports. Most goat exports from Australia are to Malaysia.

Table 1 World’s largest cattle exporters (volume), 2011

<table>
<thead>
<tr>
<th>Nation</th>
<th>Percentage of world trade</th>
<th>Main export destinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>18</td>
<td>United States</td>
</tr>
<tr>
<td>France</td>
<td>15</td>
<td>Intra-European Union</td>
</tr>
<tr>
<td>Canada</td>
<td>7</td>
<td>United States</td>
</tr>
<tr>
<td>Germany</td>
<td>6</td>
<td>Intra-European Union</td>
</tr>
<tr>
<td>Australia</td>
<td>6</td>
<td>South-East Asia</td>
</tr>
<tr>
<td>Brazil</td>
<td>4</td>
<td>Venezuela, Lebanon</td>
</tr>
<tr>
<td>Netherlands</td>
<td>4</td>
<td>Intra-European Union</td>
</tr>
<tr>
<td>United States</td>
<td>2</td>
<td>Canada</td>
</tr>
</tbody>
</table>


Table 2 World’s largest sheep exporters (volume), 2011

<table>
<thead>
<tr>
<th>Nation</th>
<th>Percentage of world trade</th>
<th>Main export destinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sudan</td>
<td>17</td>
<td>Middle East, Egypt</td>
</tr>
<tr>
<td>Australia</td>
<td>16</td>
<td>Middle East</td>
</tr>
<tr>
<td>Somalia</td>
<td>13</td>
<td>Middle East</td>
</tr>
<tr>
<td>Romania</td>
<td>12</td>
<td>Intra-European Union, Jordan, Libya</td>
</tr>
<tr>
<td>France</td>
<td>6</td>
<td>Spain, Italy</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>5</td>
<td>Turkey, Intra-European Union</td>
</tr>
</tbody>
</table>


13
Table 3 World’s largest goat exporters (volume), 2011

<table>
<thead>
<tr>
<th>Nation</th>
<th>Percentage of world trade</th>
<th>Main export destinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somalia</td>
<td>34</td>
<td>Middle East</td>
</tr>
<tr>
<td>Iran</td>
<td>26</td>
<td>Intra-regional (Middle East)</td>
</tr>
<tr>
<td>Oman</td>
<td>9</td>
<td>Intra-regional (Middle East)</td>
</tr>
<tr>
<td>India</td>
<td>5</td>
<td>Nepal</td>
</tr>
</tbody>
</table>

Sources: FAO 2014, United Nations Statistics Division 2014

South-East Asia

South-East Asia has been the largest market for Australian feeder and slaughter cattle exports since the early 1990s. In 2013, 81 per cent of Australia’s cattle exports were destined for the region. South-East Asia is also the largest market for Australian goat exports, accounting for almost 99 per cent of shipments in 2013. Sheep are exported to the region, but these account for only a small proportion of Australia’s sheep exports (2 per cent in 2013) and are mainly destined for Malaysia (ABS 2014c).

Drivers of demand for live animal imports

Beef production has grown significantly in South-East Asia but has been largely constrained by the dominance of traditional smallholder operations, the lack of land availability, poor breeding technologies and lack of infrastructure (Drum & Gunning-Trant 2008, ABARES 2013a). Unable to meet growing demand, many countries in the region supplement domestic cattle production with beef imports and live cattle imported either for direct slaughter or for finishing in feedlots before slaughter.

In South-East Asian countries with large Muslim populations (Indonesia, Malaysia and Brunei Darussalam), people prefer animals to be slaughtered by ritual methods consistent with Islamic law (halal slaughter) (see Box 1). Particularly during Ramadan, Muslims traditionally enjoy a feast with family and friends and consume traditional dishes, many of which include freshly slaughtered meat. As a result, beef prices in South-East Asia tend to rise sharply during Ramadan (Figure 9).

Live cattle imports are also preferred to imported chilled meat in some parts of South-East Asia because of a lack of cold chain infrastructure. In South-East Asia, ‘wet’ markets form the traditional meat marketing system with meat typically sold in open air stalls. Often wet markets are the only option for consumers, particularly rural consumers, to purchase meat, (Drum & Gunning-Trant 2008). Animals are usually slaughtered in close proximity to the market so that the meat is available for purchase very soon after, overcoming the need for refrigeration.

There also remains a preference from some consumers in South-East Asia for ‘hot’ meat, which is fresh meat from newly slaughtered animals. For example, Indian consumers of goat and sheep meat in Malaysia prefer fresh meat rather than chilled or frozen meat imports (MLA & Livecorp 2011). This preference can only be met in some areas by live animal imports.
Additionally, the import of feeder cattle is favoured in the region because the feedlot sector can use the agricultural by-products available and increase employment (FAO 2007). Many South-East Asian nations have a comparative advantage in the feedlotting process—with lower feed, labour and meat processing costs than Australia (Drum & Gunning-Trant 2008).

Live cattle imports will be increasingly important into the future for some South-East Asian countries, to support domestic beef production to meet strong consumer demand in the region. Growing domestic demand for beef in the region has resulted in most South-East Asian countries running down their cattle herds in the past few years. In 2012 the cattle and buffalo populations in Thailand, Cambodia and Vietnam declined by between 4 and 14 per cent (FAO 2014).

**Domestic meat production**

Beef production in South-East Asia reached 1.5 million tonnes in 2012 with Indonesia, Vietnam and Myanmar accounting for 67 per cent of the beef produced (Figure 10) (FAO 2014). Beef cattle production in much of South-East Asia consists of smallholdings, where traditionally a small number of native cattle are fattened in household yards to provide food and supplementary income for families. From the mid 1990s the number of commercial cattle farms and feedlots increased in South-East Asia to meet the growing demand for beef. These operations have been important contributors to growth in domestic beef production over the past decade or so (ABARES 2013a).

South-East Asia produced 229 000 tonnes of sheep and goat meat in 2012, with goat meat production accounting for 76 per cent. Similar to beef production, sheep and goat meat production in South-East Asia is largely undertaken by traditional smallholdings. Indonesia is the largest producer in the region, accounting for 50 per cent of production in 2012, followed by the Philippines (23 per cent) and Myanmar (21 per cent) (Figure 11) (FAO 2014).
Trade in live animals

Cattle

South-East Asia’s cattle imports expanded rapidly in the early 1990s, when commercial feedlot operations were introduced (Figure 12). Australia became the main supplier of cattle and sheep to the region because of its proximity, disease-free status as a producer and comparative advantage in producing both feeder and slaughter animals. The Asian financial crisis and associated local currency depreciations against the Australian dollar resulted in a sharp decline in imports of live animals in 1998. While Indonesian cattle imports from Australia recovered quickly, Malaysia increased beef imports from India and the Philippines turned to lower priced imported meat alternatives such as chicken (Gleeson et al. 2012). Indonesia is now the largest
Cattle importer in South-East Asia and accounted for 70 per cent of imports in 2011, followed by Thailand (14 per cent) and Malaysia (13 per cent) (United Nations Statistics Division 2014).

Figure 12 Live cattle, sheep and goat imports, South-East Asia

Note: Data includes a small number of breeder animals.
Source: FAO 2014

Live cattle imports have been important to Indonesia to meet growing domestic demand for beef and are preferred to imported beef in many parts of the country. Imported cattle can be transported to rural markets and are often slaughtered at night and available for purchase in wet markets several hours later (Gleeson et al. 2012). Most beef from imported Australian cattle is destined for Indonesian wet markets (Figure 13) (MLA & Livecorp 2011).

Figure 13 Distribution of beef from Australian live cattle imports in Indonesia

Source: MLA & Livecorp 2011
Box 2 Case study: Indonesia’s cattle and beef import policies

Since 2010 the Indonesian Government has controlled the number of cattle imported through policy measures aimed at achieving beef self-sufficiency. Achieving self-sufficiency in beef production has been an Indonesian Government policy aim since 2000, with the target date of 2005 postponed firstly to 2010 and then to 2014. Indonesia defines beef self-sufficiency as 90 per cent of supply coming from domestic beef production.

In 2010 the Indonesian Government imposed a 350-kilogram weight restriction on all cattle imports and restricted the number of import permits. The following year, it introduced import quotas on cattle and beef and reduced them in 2012 and further at the start of 2013 (Table 4). Since adopting these measures, beef prices in Indonesia have risen by as much as 100 per cent for some secondary cuts of beef. In September 2013 the Indonesian Government disbanded the cattle and beef import quotas and adopted a reference price mechanism for imports aimed at stabilising beef prices, effective from October 2013. The Indonesian Government intends to issue import permits when the Indonesian beef price for secondary cuts exceeds the reference price of 76,000 rupiah a kilogram and restrict imports when the price is below the reference price. Beef prices in May 2014 in the Kebayoran Lama wet market in Indonesia were around 100,000 rupiah a kilogram for secondary cuts (Figure 14).

Figure 14 Prices for secondary beef cuts, Kebayoran Lama wet market, Jakarta

Source: Morelink Asia Pacific 2014

Table 4 Indonesian trade policy measures—cattle and beef imports

<table>
<thead>
<tr>
<th>Year</th>
<th>Trade measures</th>
</tr>
</thead>
</table>
| 2010 | 350-kilogram weight restriction imposed on cattle imports  
Import permits for cattle restricted with a 32 per cent decline in number of cattle imported |
| 2011 | Cattle import quota of 500,000 head adopted  
Beef import quota of 72,000 tonnes adopted |
| 2012 | Cattle import quota reduced to 283,000 head  
Beef import quota reduced to 34,000 tonnes, increased to 41,000 tonnes in second half of year |
| 2013 | Cattle import quota reduced to 267,000 head  
Beef import quota reduced to 32,000 tonnes  
Bulog (Indonesian rice trading enterprise) permitted to import additional 3000 tonnes of beef in second half of year  
Additional import permits issued for 25,000 head of slaughter-ready cattle in second half of year  
Reference price mechanism applied from October  
Import quotas removed for cattle and beef |
| 2014 | Indonesian Government indicative plan to import up to 750,000 feeder and slaughter cattle in 2014  
125,000 head of quarter 1 permits issued for feeder cattle  
45,000 head of quarter 1 permits issued for slaughter cattle  
278,000 head of quarter 2 permits issued for feeder/slaughter cattle |
Vietnam has recently increased cattle imports, primarily sourced from Australia, because of domestic supply shortages. As turn-off increased in response to strong demand for beef, Vietnam’s cattle numbers declined. Vietnam has also been a large importer of unrecorded live cattle from neighbouring countries, many of which have also faced supply shortages recently.

**Unrecorded trade**

South-East Asia has considerable unrecorded intra-regional trade in cattle and beef. As a consequence, the live animal trade in South-East Asia may be understated in official statistics. For example, it is estimated that in the early 2000s around 100,000 head of cattle from Lao People’s Democratic Republic entered Thailand each year, unrecorded, to be processed into beef (Knips 2004). Unrecorded cattle trade has contributed to recent cattle supply shortages in Vietnam, Cambodia and Myanmar, adding to shortages in Thailand.

Australian industry sees the drawdown on domestic herds in these countries as opening opportunities to export Australian cattle to the region. Exports are already flowing to Vietnam and commercial interest is increasing incentives for the completion of trade protocols to develop trade with Thailand and Cambodia (Australian Livestock Exporters’ Council 2014).

**Other livestock—goats, sheep and buffalo**

Numbers of live goat and sheep imports to South-East Asia are much lower than for live cattle imports. Imports of both goats and sheep expanded in 2006, with Malaysia nearly doubling its imports. Malaysia has been the largest importer of both goats and sheep since the late 1990s and accounted for 73 per cent of South-East Asia’s goat and sheep imports in 2011, followed by Singapore (27 per cent) (United Nations Statistics Division 2014).

Buffalo have historically been traded between neighbouring countries in South-East Asia. Thailand was the largest importer of buffalo through the 1990s and early 2000s but recorded imports declined to negligible quantities in 2007 (FAO 2014). Indonesia and Brunei Darussalam have in the past imported buffalo from Australia. In February 2014 Vietnam imported its first shipment of Australian buffalo (around 200 head) with further shipments expected later in the year.

**Competition**

**Cattle**

Australia is the largest supplier of live cattle to South-East Asia, supplying 80 per cent of imports in 2011 (Figure 15). This reflects a strong market presence in Indonesia, Vietnam, the Philippines and Brunei Darussalam. Indonesia, the largest live cattle import market in South-East Asia, prohibits the import of cattle and beef from countries affected by foot and mouth disease (European Commission 2013). As a result, no cattle or beef can be imported from Brazil and India, both of which are low cost suppliers of beef and cattle to other countries in the region. Australia remains the only supplier of feeder and slaughter cattle to Indonesia.

The main competition for Australian cattle in other South-East Asian countries is Thailand. Thai cattle exports are predominantly destined for Malaysia and Vietnam. Thailand has been the largest cattle exporter to Malaysia since it overtook Australia in this market in 2008. Historically, Thai cattle prices have been significantly lower than Australian cattle prices (60 per cent less in 2011) (United Nations Statistics Division 2014).
Sheep and goats

Australian sheep and goat exports face little competition in South-East Asia (Figure 16). From 2009 to 2011 South-East Asia sourced around 80 per cent of sheep and goat imports from Australia, with the remainder largely drawn from intra-regional trade (United Nations Statistics Division 2014).

Meat imports and potential to substitute for live trade

South-East Asia’s meat imports expanded rapidly over the two decades to 2011 with significant growth in imports of pig meat, chicken meat and beef (Figure 17).
Less expensive than other meats, chicken meat is the largest imported meat type. Vietnam, the Philippines and Singapore are the largest chicken meat importers. Beef is the second-largest meat import. Malaysia, the Philippines and Indonesia are the largest beef importers. In 2011 these three countries accounted for 84 per cent of total South-East Asian beef imports. The major suppliers of beef to the region are India (accounting for 48 per cent of imports in 2011), Australia (29 per cent), New Zealand (13 per cent) and Brazil (4 per cent) (United Nations Statistics Division 2014).

Malaysia is the largest sheep meat and goat meat importer in the region and accounted for just over half of South-East Asia’s imports of these meats in 2011, followed by Singapore at 26 per cent. Australia is the largest supplier of sheep meat and goat meat to the region, accounting for around two-thirds of imports, with the remainder largely from New Zealand (United Nations Statistics Division 2014).

Through the early 1990s, predominantly in Indonesia, the Philippines and Malaysia, live cattle imports increased more rapidly than meat imports (Figure 18). These countries had tariff structures that favoured the import of live cattle, particularly feeder cattle (FAO 2007). However, in the decade to 2010 imports of meat rose more rapidly than imports of live animals. Between 2007 and 2009 live cattle imports to the region increased sharply, mostly directed to Indonesia, largely because of increased supply of Australian cattle available for export.

The rise in meat imports since the early 2000s is a reflection of rising incomes in the region, increasing urbanisation, changing consumer preferences and increased availability of more affordable imported meat. For example, over the decade to 2012, gross national income (GNI) per person (purchasing power parity) increased by 106 per cent in Indonesia and the proportion of the population in urban areas increased by almost 8 percentage points (Table 5). Similarly, over the same period, GNI per person (purchasing power parity) increased by 75 per cent in Malaysia and the proportion of the urban population increased by 9 percentage points. As refrigeration has become more available, some consumers in South-East Asia have chosen to buy imported meat over meat produced from animals imported live. However, in many parts of South-East Asia the limited extent of cold chain facilities remains a constraint on the broad substitution of imported meat for live imports. In Indonesia, 63 per cent of the urban population...
and 78 per cent of the rural population (around 170 million people) did not have refrigeration in 2010 (Guharoy 2010).

Figure 18 Live cattle and beef imports, South-East Asia

![Graph showing live cattle and beef imports, South-East Asia]

Note: Cattle import data may include breeder cattle.
Source: FAO 2014

<table>
<thead>
<tr>
<th>Country</th>
<th>Change in GNI per person (PPP) (per cent)</th>
<th>Change in the proportion of urban population (percentage points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>124</td>
<td>1.4</td>
</tr>
<tr>
<td>Indonesia</td>
<td>106</td>
<td>7.9</td>
</tr>
<tr>
<td>Laos</td>
<td>107</td>
<td>11.2</td>
</tr>
<tr>
<td>Malaysia</td>
<td>75</td>
<td>9.1</td>
</tr>
<tr>
<td>Philippines</td>
<td>73</td>
<td>1.1</td>
</tr>
<tr>
<td>Singapore</td>
<td>77</td>
<td>0.0</td>
</tr>
<tr>
<td>Thailand</td>
<td>77</td>
<td>2.9</td>
</tr>
<tr>
<td>Vietnam</td>
<td>102</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Note: PPP is purchasing power parity.
Source: The World Bank 2014

In South-East Asia, particularly Malaysia and the Philippines, beef imported from low-cost producers such as India, Brazil and Uruguay has a degree of substitutability with beef produced from imported cattle. In contrast, beef imported from Australia is mostly destined for the high-end market (including restaurants and modern retail outlets) and manufacturing. Beef produced from Australian imported cattle is largely destined for wet markets.

The Middle East

The Middle East region is the largest destination for Australian live sheep exports. In 2013 Australia exported 1.9 million head of sheep to the Middle East, 98 per cent of Australia's total live sheep exports. The primary destinations were Kuwait, Qatar, Jordan and the United Arab Emirates. In previous years Saudi Arabia and Bahrain were also significant destinations.
In contrast, the Middle East is a relatively small destination for Australian cattle exports. In 2013 only 15 per cent (112 000 head) of Australia’s cattle exports were shipped to the Middle East, most destined for Israel and Jordan.

Drivers of demand for live imports

Religious and cultural preferences, primarily for halal slaughter, drive demand for live animal imports in the Middle East. In 2010 almost 91 per cent of the Middle East population was estimated to be Muslim (Pew Research Center 2011). In contrast with other Middle Eastern countries, Israel’s predominantly Jewish population requires food to be kosher (see Box 1).

Some Middle Eastern countries use live animal imports to increase domestic value from livestock supply chains. For example, Israel imported the second-largest number of live cattle of the Middle Eastern countries in 2011. This was largely driven by its desire to use domestic slaughtering capacity as its infrastructure has developed (Keogh & Tomlinson 2013).

In contrast with many Asian countries, lack of refrigeration is not a significant problem in the Middle East. According to a market study of households in the United Arab Emirates, Kuwait, Qatar and Bahrain, ownership of refrigerators is around 99.5 per cent and freezers around 73 per cent (Market Vision 2011). Public refrigerated warehouse capacity has also grown substantially. However, the ratio of public refrigerated warehouse capacity to urban population is still low compared with more developed countries such as the United States and Japan. Lack of refrigeration is a more significant problem in poorer countries, such as Yemen, where 15 million people live in homes without access to electricity (Keogh & Tomlinson 2013).

Domestic production

Most Middle Eastern countries have small domestic livestock industries. Production is limited by arid conditions and availability and cost of feed, which is largely imported (Drum & Gunning-Trant 2008). Sheep are the largest stocked animal in the region, followed by goats, cattle and buffalo. In 2012, FAO estimated there to be 100 million head of sheep in the Middle East, more than 46 million goats, 16 million cattle and fewer than 700 000 head of buffalo (Figure 19).

Figure 19 Livestock inventories, Middle East

![Livestock inventories, Middle East](source: FAO 2014)
In 2012 Iran accounted for roughly half of all sheep and goats in the region (Figure 20). Iran had the world’s fifth-largest sheep flock (49 million head) and the ninth-largest goat herd (24 million head) in that year. Following Iran, the most significant sheep producers in the Middle East are Syria (18 million head in 2012), Saudi Arabia (11 million head), Yemen (9 million head) and Iraq (8 million head).

**Figure 20 Sheep flocks, Middle East**

Source: FAO 2014

**Live animal trade**

The Middle East region as a whole is a significant importer of live animals, particularly sheep (Figure 21 and Figure 22). In 2011, 8.5 million head of live sheep were imported, primarily by Saudi Arabia (accounting for 56 per cent of imports), Kuwait (11 per cent), Bahrain (9 per cent) and Qatar, Jordan and Yemen (5 per cent each). Countries in the Middle East also exported considerable numbers of live sheep, with 1.6 million head exported in 2011. Most of this was intra-regional trade.

**Figure 21 Live sheep, goat and cattle imports, Middle East**

Source: FAO 2014
Live goat and cattle imports are small compared with live sheep imports but generally increased between 1990 and 2011. In 2011 the Middle East imported 4.5 million live goats, and the major import destinations were Saudi Arabia, United Arab Emirates and Oman. It imported 781,000 head of live cattle in the same year, with Lebanon, Israel and Yemen the main importers.

**Competition**

Australia’s major competitors in the Middle East are countries in Africa and Europe. The Middle East also has significant intra-regional trade (Live sheep imports in the Middle East declined over the past decade, as did Australia’s share of those imports (Figure 23). The Australian Government’s introduction of the Exporter Supply Chain Assurance System (ESCAS) in 2012 and trade suspensions in response to animal welfare concerns have potentially eroded this share further. For example, Saudi Arabia is the largest importer of live sheep in the world and was once a significant destination for Australian live sheep. However, Saudi Arabian imports of Australian sheep have declined since the early 2000s—with it importing only 24,000 head in 2011—largely because of greater competition from Africa. Additionally, Saudi Arabia’s supply chains are not ESCAS-compliant and it has not imported Australian sheep since 2012.

Live sheep imports in the Middle East declined over the past decade, as did Australia’s share of those imports (Figure 23). The Australian Government’s introduction of the Exporter Supply Chain Assurance System (ESCAS) in 2012 and trade suspensions in response to animal welfare concerns have potentially eroded this share further. For example, Saudi Arabia is the largest importer of live sheep in the world and was once a significant destination for Australian live sheep. However, Saudi Arabian imports of Australian sheep have declined since the early 2000s—with it importing only 24,000 head in 2011—largely because of greater competition from Africa. Additionally, Saudi Arabia’s supply chains are not ESCAS-compliant and it has not imported Australian sheep since 2012.
Table 6 Suppliers of live sheep and goats to selected countries in the Middle East, 2011

<table>
<thead>
<tr>
<th>Import destination</th>
<th>Largest supplier</th>
<th>Second–largest supplier</th>
<th>Third–largest supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Arabia</td>
<td>Sudan</td>
<td>Somalia</td>
<td>Syria</td>
</tr>
<tr>
<td>Bahrain</td>
<td>Australia</td>
<td>Saudi Arabia</td>
<td>Somalia</td>
</tr>
<tr>
<td>Yemen</td>
<td>Somalia</td>
<td>Ethiopia</td>
<td>Djibouti</td>
</tr>
<tr>
<td>Oman</td>
<td>Somalia</td>
<td>Iran</td>
<td>Australia</td>
</tr>
</tbody>
</table>

Note: Kuwait and Qatar not included because of data limitations.
Source: Keogh & Tomlinson 2013

Figure 23 Australia’s share of Middle East live sheep imports (by head)

Sources: ABS 2014c, FAO 2014

Bahrain is also traditionally an important destination for Australian live sheep, but trade was suspended between 2012 and early 2014 while new import conditions were negotiated after a shipment of sheep was rejected over alleged disease concerns. Box 3 provides additional information about the market for live sheep in Bahrain, a market that had become increasingly significant to Australia prior to the trade suspension.

In 2011 imports from Sudan, Somalia and Djibouti accounted for 62 per cent of total imports to the Middle East region (United Nations Statistics Division 2014). Further, the share of African sheep in the Middle East region’s sheep imports has increased over recent years. In 2011 Africa supplied 84 per cent of Saudi Arabia’s live sheep imports compared with 25 per cent in 2006. Saudi Arabia is the primary destination for African sheep. Bahrain has imported live sheep from Somalia in recent years (see Box 3).

During the early 2000s sheep imported from Australia were generally cheaper than African sheep. However, since 2007 prices of Australian sheep have been higher than African sheep (ABS 2014c; United Nations Statistics Division 2014). Despite this, Australian sheep are often preferred because they are consistent in quality and more likely to be disease free (Manton-Pearce 2013). Countries in the Middle East have suspended imports from Africa at various times because of disease risk, including foot and mouth disease and Rift Valley Fever.
Other suppliers of live sheep to the Middle East are countries in Europe, particularly France, Spain and Romania. However, imports from these countries are small compared with imports from Australia and Africa.

Intra-regional trade is also an important source of live sheep in the Middle East. Syria and Iran are net exporters of live sheep and primarily export to other countries in the region. Additionally, Saudi Arabia and Jordan are net importers of live sheep but re-export a significant number of live sheep to other countries in the region (FAO 2014; United Nations Statistics Division 2014).

Brazil and Somalia are the primary suppliers of live cattle to the Middle East. However, Australian cattle have a larger share of the import market in Israel, accounting for 44 per cent of total imports in 2011. Australia’s main competitors in the Israeli market are Lithuania, Jordan, Serbia and Hungary (United Nations Statistics Division 2014).

**Meat imports and potential to substitute for live trade**

The Middle East region as a whole is a significant beef importer, reflecting low domestic production and limited imports of live cattle. Beef imports have grown since 1999 and were 457 000 tonnes in 2011, driven by increased consumer demand as incomes rose (Figure 24). In 2011 the major importers of beef were Iran (accounting for 32 per cent of imports), Saudi Arabia (24 per cent) and Israel (16 per cent). Imports were primarily supplied by India, South America and Australia.

Over the 10 years to 2011 sheep meat imports rose to 130 000 tonnes, peaking in 2008 at 165 000 tonnes (Figure 24). In 2011 the largest importers of sheep meat in the Middle East were Saudi Arabia, the United Arab Emirates and Jordan. Most sheep meat is sourced from Australia and New Zealand.

**Figure 24 Meat imports, Middle East**

![Graph showing meat imports, Middle East]

Source: FAO 2014

The substitutability between live sheep and sheep meat imports has increased in recent years, partly reflecting growth in incomes and urbanisation in some parts of the Middle East (ACIL Tasman 2009). For example, over the decade to 2011, GNI per person (purchasing power parity) increased by 72 per cent in Saudi Arabia and the proportion of urban population increased by 2 percentage points (Table 7). In Kuwait, GNI per person (PPP) increased by 21 per cent but the
Proportion of the urban population increased only slightly. Additionally, the popularity of Western-style supermarkets has increased, facilitating greater imports of chilled and frozen meat (MLA 2012). While many Middle Eastern countries strongly prefer fresh meat, consumers will purchase chilled and frozen imported meat or meat from imported carcasses if given no alternative.

Live sheep imports in the main importing countries in the Middle East (excluding Iran and Syria) declined from a peak of 13 million head in 1993 to 8.3 million head in 2010 (Figure 25). In contrast, sheep meat imports in these countries generally increased, more than doubling in the two decades to 2010. A sharp rise in sheep meat imports in 2007 and 2008 coincided with a decline in live sheep imports by Saudi Arabia and the United Arab Emirates after an outbreak of Rift Valley Fever in Sudan, a significant supplier to these regions in the previous year.

Table 7 Change in income and urbanisation, Middle East, 2001 to 2011

<table>
<thead>
<tr>
<th>Country</th>
<th>Change in GNI per person (PPP) (per cent)</th>
<th>Change in the proportion of urban population (percentage points)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Bahrain</td>
<td>4</td>
<td>0.3</td>
</tr>
<tr>
<td>Israel</td>
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<td>0.6</td>
</tr>
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<td>1.1</td>
</tr>
<tr>
<td>Oman</td>
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<td>1.8</td>
</tr>
<tr>
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<td>72</td>
<td>2.2</td>
</tr>
<tr>
<td>Yemen</td>
<td>25</td>
<td>5.5</td>
</tr>
</tbody>
</table>

Note: PPP is purchasing power parity. Change in GNI per person (PPP) for Bahrain and Oman is calculated over the period 2000 to 2010.
Source: The World Bank 2014

Figure 25 Live sheep and sheep meat imports, main importers in Middle East

Note: Excludes Iran and Syria.
Source: FAO 2014

The Middle East imports both live sheep and sheep meat from Australia. While imports of live sheep from Australia varied between 1990 and 2013, imports of sheep meat increased by more than 150 per cent to 96 000 tonnes.
Australian industry promotion of Australian red meat in the Middle East may help to increase the substitutability between imported meat and meat from imported live animals. For example, Meat & Livestock Australia is working collaboratively with government officials in the Middle East to promote Australian chilled and frozen sheep meat. They aim to increase consumer confidence that Australian red meat is halal and safe to eat. They have developed an Australian Halal Marketing Brand logo and run education programs to promote Australian sheep meat (Manton-Pearce 2013).

Imports of both live cattle and beef have increased in the Middle East over the past two decades. It is difficult to determine the substitutability of these commodities in the region as a whole. However, in Israel (Australia’s primary live cattle market in the region), the potential for beef imports to replace live cattle imports is low. As previously mentioned, Israel imports cattle to use its domestic slaughtering capacity and benefit from value adding.

Box 3 Case study: Bahrain

Bahrain has two main market segments for sheep meat. The dominant market provides meat for the low-income population and is subsidised by the government. The subsidy covers both live imports and carcass imports. In this market the price of meat has been fixed below market rates for more than 20 years and the meat is primarily sold in wholesale meat markets. While consumers in this market strongly prefer for locally processed fresh meat (including meat from live imports), they will purchase meat from imported carcasses if given no alternative. Australia is a large supplier of this market segment through livestock for slaughter and chilled and frozen carcasses. The other main market segment is chilled cuts of meat, sold mostly at higher-end supermarkets, hotels and restaurants. This meat sells for prices similar to those in Australia and is primarily supplied by New Zealand and Australia.

Australia has been the main supplier of live sheep to Bahrain, with imports coming sporadically from neighbouring and Horn of Africa countries. Between 1990 and 2009 Bahrain’s live sheep imports from Australia increased from just over 240 000 head to almost 750 000 head (Box 3 Case study: Bahrain (continued)).

Figure 26). However, imports declined each year from 2009, largely reflecting the response of the Bahraini Government to an increase in the price of Australian sheep. Between 2009 and 2011 the average price of Bahrain’s sheep imports from Australia increased from $98 a head to $147 a head (2013 dollars). The Bahraini Government reduced subsidy costs by substituting some live sheep imports with carcass imports, which were significantly cheaper at the time per kilogram. Bahrain’s imports of Australian carcasses increased from around 790 tonnes in 2009 to 7250 tonnes in 2011 (Figure 27).

In 2012, Australian industry voluntarily suspended live sheep exports to Bahrain after a shipment of 21 000 head of sheep was rejected because of disease concerns. As a result of the suspension, Bahrain did not import any sheep from Australia in 2013. According to Australian industry, Bahrain has imported some live sheep from Somalia since the trade suspension. One shipment occurred around the time of the Eid-ul-Adha festival when demand for live sheep is particularly high. However, live sheep imports from Somalia are constrained by consumers’ lack of confidence in African sheep, mainly regarding health concerns, as well as the smaller carcass size compared with Australian sheep and associated costs of meat on a per kilogram basis. Bahraini media reported at the time that meat from live sheep imported from Somalia cost 71 per cent more than Australian fresh meat per kilogram (Omari 2013). There has also been reluctance in Bahrain to risk food security by relying on countries with endemic exotic diseases that may result in supply inconsistency.

Following the suspension, Bahrain further increased imports of Australian sheep meat (Figure 27). Bahrain also increased sheep meat imports from other suppliers, including Pakistan, Ethiopia, Sudan, Kenya and Somalia. However, greater import volumes of carcasses presented logistical issues, including limited cargo space on aircraft and gaining access to chilled transit infrastructure and facilities at airports.

Australian industry lifted the suspension in February 2014 after the Australian and Bahraini governments reached agreement on requirements for the live trade to recommence. Exports from Australia resumed in April 2014 through an ESCAS-compliant supply chain and Australia sent 25 000 head in April 2014 and 50 225 head in May 2014 (ABS 2014c). Industry forecasts that Australian live sheep exports to Bahrain will gradually increase from a base volume of 300 000 head annually.
North Africa

Egypt was an important destination for Australian live exports in the 1990s and early 2000s (Figure 28). Libya also intermittently imports live sheep and cattle from Australia.

Australia’s cattle exports to Egypt reached a peak of 240,482 head in 1999 (29 per cent of total Australian cattle exports in that year). However, a large depreciation in the value of the Egyptian pound relative to the Australian dollar contributed to Australian cattle becoming relatively more expensive and shipments declined (Gleeson et al. 2012). In February 2006 the Australian Government suspended live cattle exports to Egypt because of animal welfare concerns in
Egyptian abattoirs. This was followed by suspension of live sheep exports to Egypt in December 2006, also because of animal welfare concerns (Department of Agriculture 2014a).

In 2010 Australian cattle exports to Egypt resumed through a single facility at the Port of Sokhna comprising an integrated port, feedlot and abattoir. A second integrated facility (Ismailia) opened in 2012. Trade has not recovered to previous levels.

The last shipment of Australian cattle to Egypt was in July 2012. In August 2012 Egypt suspended imports from Australia when hormonal growth promotants were detected in two shipments of cattle (Department of Agriculture 2014a). Further concerns about animal welfare in May 2013 resulted in Australian industry voluntarily suspending the trade to Egypt.

In March 2014 Australian industry lifted the voluntary suspension following an announcement that the Australian and Egyptian governments had agreed to recommence the livestock trade under ESCAS. Australian live cattle exports to Egypt are expected to recommence in the second half of 2014.

**Drivers of demand for live imports**

Per person red meat consumption in Egypt is low compared with other countries, at around 8.7 kilograms a year in 2012 (USDA–FAS 2012a). This is mainly the result of limited local production, low incomes and high prices (USDA–FAS 2012b). Meat consumption in Libya is also limited (Pereltsvaig 2013). Despite relatively low consumption, production of meat from local animals in Egypt and Libya is generally unable to meet demand. As a result, live animals and meat are imported.

In 2012, 90 per cent of Egypt's population and 97 per cent of Libya's population was estimated to be Muslim (Keogh & Tomlinson 2013). Egyptian consumers reportedly distrust foreign *halal* slaughter practices and strongly prefer domestically produced beef over imported beef (USDA–FAS 2013). They also prefer fresh beef to frozen beef, with wealthier consumers considering frozen beef inferior. Most frozen imported beef is from low quality cuts and is sold at reduced prices at government outlets (USDA–FAS 2012b).
**Domestic production**

Inventories of sheep, cattle, goats and buffalo have increased in Egypt since the early 1990s but have changed little since the mid 2000s (Figure 29). In 2012, there were 9.8 million head of sheep and goats and 8.8 million head of cattle and buffalo. Egypt’s cattle and buffalo herd is primarily used for dairy production, with beef a by-product (USDA–FAS 2012a). Egypt’s cattle herd consists of imported dairy cows and mixed breeds, with no specific beef breeds (USDA–FAS 2013).

Feed shortages in Egypt are often a constraint on livestock production, with local livestock production largely depending on imported feed. Other constraints on livestock production are limited water availability and lack of cultivable land. Egypt has also had problems with livestock diseases in past years, including an outbreak of foot and mouth disease in 2012 (USDA–FAS 2012b).

**Figure 29 Livestock inventories, Egypt**

![Livestock inventories, Egypt](image)

Source: FAO 2014

Libya’s livestock production consists primarily of sheep and goats. In 2012 the sheep flock was 7.2 million head and the goat herd was 2.6 million head, while cattle stocks were significantly lower at around 200 000 head.

Livestock production in Libya is constrained by water shortages, frequent droughts and limited arable land (Akraim 2012; Laytimi 2002). There is also limited availability of feed, which is often of low quality. This is a significant problem for cattle production, while sheep and goats are more tolerant of these conditions (Akraim 2012). As in Egypt, Libya is largely reliant on feed imports.

**Live animal trade**

Egypt is a relatively small importer of live animals, with cattle imports of almost 59 000 head (about 1 per cent of world trade) and sheep imports of 53 000 head in 2011 (0.3 per cent of world trade) (Figure 30). Egypt’s live cattle and live sheep imports peaked in the late 1990s and early 2000s and were primarily sourced from Australia. Declining imports since then are largely the result of a significant depreciation in the value of the Egyptian pound and trade interruptions, including a ban on all cattle imports in June 2006 because of disease concerns (USDA–FAS 2008).
For similar reasons, Libya’s imports of live animals were negligible during the mid 2000s. In 2011 Libya imported 95,000 head of sheep and 11,000 head of cattle.

**Competition**

In Egypt, Australia’s major competitors in the live cattle market are Brazil, Ethiopia, Sudan and Croatia (United Nations Statistics Division 2014).

Brazil is an important supplier of cattle to Egypt. However, the mortality rate for Brazilian shipments is often higher than for other suppliers. In March 2012 Egypt rejected a shipment of 5000 cattle from Brazil because 3000 head died en route (USDA–FAS 2012b).

Figure 30 Live cattle and sheep imports, Egypt, from all sources

![Graph showing live cattle and sheep imports, Egypt, from all sources](image)

Note: ABS data for Australian exports to Egypt is used instead of FAO data for total imports by Egypt when ABS data exceeds FAO data.
Sources: ABS 2014c, FAO 2014

Egypt aims to improve trade relations with other Nile Basin countries to ensure continued access to upstream water. This includes favouring cattle imports from Ethiopia and Sudan (USDA–FAS 2013). Additionally, in June 2012 the Egyptian Ministry of Agriculture and Land Reclamation and Sudan’s Ministry of Agriculture, Livestock and Irrigation signed a memorandum of understanding to establish a joint livestock production facility in Sudan. The facility will cover 735 hectares and handle around 4000 cattle and a similar number of sheep a year (USDA–FAS 2013).

The major disadvantages of live cattle imports from Ethiopia and Sudan are disease risks and high transport costs because of inadequate roads (USDA–FAS 2013). In 2007 Egypt suspended imports from Ethiopia after outbreaks of foot and mouth disease, lumpy skin disease and three-day fever. They resumed in 2010, but Egypt’s 2012 outbreak of foot and mouth disease was caused by infected live cattle imports from Ethiopia (as well as smuggled animals from Libya) (USDA–FAS 2013). Similarly, Egypt suspended live cattle imports from Sudan between 2007 and 2012 after an outbreak of Rift Valley Fever.

Until 2003 Australia was the primary supplier of live sheep to Egypt. Since then its live sheep imports have been significantly reduced and mainly supplied by other countries, including Sudan, Uruguay, Ethiopia and Saudi Arabia (United Nations Statistics Division 2014).
Romania is generally the dominant supplier of live cattle and live sheep to Libya (United Nations Statistics Division 2014). Libya has also recently resumed imports from the Republic of Ireland, which was a significant supplier of live cattle to Libya in the mid 1990s.

**Meat imports and potential to substitute for the live trade**

Egypt's primary meat import is beef, as consumers in Egypt prefer beef over other animal proteins such as lamb and poultry (Figure 31) (USDA–FAS 2012a). The major suppliers of beef to Egypt are Brazil, India, the United States and Australia (United Nations Statistics Division 2014).

![Figure 31 Meat imports, Egypt](image)

Note: ABS data for Australian exports to Egypt is used instead of FAO data for total imports by Egypt when ABS data exceeds FAO data.
Sources: ABS 2014c, FAO 2014

Beef is also the main imported meat in Libya, but imports were limited until the early 2000s. The rise in imports in the remainder of the decade reflects significantly lower domestic beef production. Sheep meat imports are much lower than beef imports, reflecting higher domestic production. Beef and sheep meat imports are mostly sourced from Australia, Uruguay and Brazil (United Nations Statistics Division 2014).

There appears to be substitutability between live cattle imports and beef imports in Egypt (Figure 32). While Egyptian consumers strongly prefer freshly slaughtered beef, live cattle imports are constrained by various factors, including disease concerns. In the 10 years to 2011 live cattle imports averaged 54 000 head a year, significantly lower than the annual average of 144 000 head in the decade prior. In contrast, beef imports averaged 140 000 tonnes a year in the 10 years to 2011, compared with 115 000 tonnes a year in the previous decade.

In Libya, because beef import volumes are so small, it is unclear from the trade data whether the two commodities can be substituted (Figure 33). In the 10 years to 2011 live cattle imports averaged 13 000 head a year compared with 96 000 head a year in the preceding decade. In contrast, beef imports averaged 14 000 tonnes annually in the 10 years to 2011, compared with 3000 tonnes a year in the previous decade. Live sheep imports and sheep meat imports in Libya show a similar pattern. A sharp reduction in imports of both live animals and meat occurred in 2011 as a result of disruption caused by Libya’s civil war in that year.
Figure 32 Live cattle and beef imports, Egypt

Note: ABS data for Australian exports to Egypt is used instead of FAO data for imports by Egypt when ABS data exceeds FAO data.
Sources: ABS 2014c, FAO 2014

Figure 33 Live cattle and beef imports, Libya

Note: ABS data for Australian exports to Libya is used instead of FAO data for total imports by Egypt when ABS data exceeds FAO data.
Sources: ABS 2014c, FAO 2014
Turkey

Turkey emerged as a major export market for Australian live sheep and live cattle in 2010 and in that year became Australia’s second-largest market for live cattle (64,338 head) (Figure 34). In 2011 Turkey became Australia’s third-largest market for live sheep, importing just over 352,000 head. However, exports of both sheep and cattle have since declined.

Figure 34 Imports of Australian live sheep and cattle, Turkey

Source: ABS 2014c

In 2010, in response to high domestic red meat prices caused by lower production and high feed prices, the Turkish Government introduced import quotas for slaughter cattle at reduced tariff rates in what was intended to be a short-term market intervention (USDA–FAS 2010a).

Continued high meat prices resulted in the government reducing import tariffs on live slaughter and feeder cattle to 40 per cent in August 2010 (USDA–FAS 2010b). In September 2010, tariffs were reduced for slaughter cattle imports to 30 per cent, feeder cattle to 20 per cent and sheep to 20 per cent. In December 2010 feeder cattle imports became duty free (USDA–FAS 2010b, USDA–FAS 2010c).

Tariffs on red meat carcass imports (including bovine, sheep and lamb) were also reduced from 225 per cent to 30 per cent in September 2010 (USDA–FAS 2010c). Beef imports in Turkey rose from zero in 2009 to more than 110,000 tonnes in 2011 (FAO 2014). However, in March 2011 the Turkish Government began increasing the tariff on red meat carcass imports to protect domestic producers. By July 2011 the tariff rate was 75 per cent (USDA–FAS 2011). Beef imports fell significantly in 2012 (United Nations Statistics Division 2014).

ESCAS was implemented in Turkish supply chains in February 2012, and in April the first cattle and sheep were exported from Australia. However, in November 2012 the Turkish Government increased tariffs on live cattle and lamb imports to 40 per cent. Further, in May 2013 Turkey suspended livestock imports from all countries to review import arrangements. Australia has not exported live cattle or live sheep to Turkey since then.

Australia’s main competitors in the Turkish live cattle import market are Uruguay and Hungary, while in the live sheep import market Bulgaria is the major competitor. In Turkey, substitutability between live animal imports and meat imports is low because of different tariff rates that favour importing live animals.
North Asia

Australia does not export slaughter and feeder animals to China because the central governments of the two nations are negotiating animal health protocols. Commercial interest in developing a feeder and slaughter cattle trade with China is strong. Strict animal health protocols are in place for Australian breeder animals and dairy cattle exported to China. In 2013 China was the largest market for Australian breeder and dairy cattle exports. In recent years Australia also exported breeder sheep to China.

Japan imported 12,900 head of feeder and slaughter cattle from Australia in 2013, accounting for 2 per cent of Australia’s beef cattle exports in volume. Japan does not currently import sheep or goats from Australia for feeder and slaughter purposes (ABS 2014c).

Drivers of demand for livestock imports

In China and Japan demand for meat has increasingly exceeded domestic production, resulting in greater demand for imported meat.

Drivers of China’s growing meat demand include rapid population growth, rising incomes, changing dietary preferences and increasing urbanisation. Consumer concerns about food safety have also supported demand for imported beef and sheep meat in recent years (MLA 2013a).

Japan’s demand for imported live animals is low. It imports large quantities of meat to satisfy domestic demand.

Domestic production

Beef production in China (6.3 million tonnes in 2012) increased rapidly in the early 1990s (Figure 35) (FAO 2014). Most Chinese beef production originates from cattle raised on smallholdings, with the majority of Chinese cattle farms maintaining herds with fewer than 50 head. While specialist beef producers remain in the minority, they are increasing in number. China has limited capacity for large numbers of lot fed cattle, with only a small number of medium-sized feedlots operating with capacity of up to 10,000 head (ABARES 2013a).

Figure 35 Red meat production, China

Source: FAO 2014
In 2012 China was the world’s largest producer of sheep and goat meat. Sheep meat production was 2.1 million tonnes and goat meat production was 1.9 million tonnes (FAO 2014).

In Japan, beef production averaged 530 000 tonnes a year from 1990 to 2012, with growth restricted by limited grazing land (ABARES 2013a; FAO 2014). Around two-thirds of Japan’s beef production is comprised of meat from the domestic dairy industry, with the remainder from wagyu breeds (ABARES 2013a).

**Live animal trade**

China’s recorded imports of live cattle, sheep and goats for feeder and slaughter purposes are negligible.

Since the mid 2000s Japan has only imported feeder and slaughter cattle from Australia (United Nations Statistics Division 2014). In 2013 Japan imported 12 900 head of mainly wagyu cattle from Australia. Beef from these imported cattle largely enters the premium market (restaurants, supermarkets and hotels). In 2013 imported cattle accounted for around 1 per cent of total cattle slaughtered in Japan.

**Competition**

As China’s recorded live animal imports are negligible there is officially little competition between live animal suppliers.

In the past five years Japan only imported live cattle from Australia, with no competition from other suppliers as a result of the specific breed (wagyu) demanded. However, the meat produced from the imported live cattle enters the premium market and may compete with imported beef from both Australia and the United States as well as domestically produced wagyu beef.

**Meat imports and potential to substitute for live trade**

China’s beef imports have grown strongly since 2008, reaching a record 294 000 tonnes in 2013 (Figure 36) (China Customs Bureau 2014). In 2013 Australian beef accounted for 53 per cent of China’s imports, followed by beef from Uruguay (24 per cent) and New Zealand (12 per cent).

![Figure 36 Red meat imports, China](image)

*Note: Goat data unavailable for 2013.*

*Sources: China Customs Bureau 2014, United Nations Statistics Division 2014*
Sheep meat imports grew rapidly over the five years to 2013, reaching 247 000 tonnes (China Customs Bureau 2014). China’s goat meat imports have remained low. New Zealand and Australia are the largest suppliers of sheep and goat meat to China.

Japan is a significant importer of beef, with imports accounting for almost 70 per cent of beef consumption in some years (ABARES 2013a). Beef imports in the early 2000s fell as a result of bans on imports from Canada (2002) and the United States (2004) because of the detection of bovine spongiform encephalopathy (BSE) (Figure 37). Japan has been relaxing restrictions on imports from the United States since 2005 and, while Australia remains the largest supplier of beef to Japan, imports from the United States account for an increasing share.

Japan’s sheep meat imports declined over the two decades to 2011, falling to 17 000 tonnes, while goat meat imports remained relatively stable, averaging around 170 tonnes a year. Australia and New Zealand are the main suppliers of sheep and goat meat to Japan.

Japan’s imports of beef increased sharply in the early 1990s, coinciding with a significant fall in imports of Australian cattle. This was followed by an increase in imports of Australian cattle in the early 2000s when beef imports fell. Since 2005 this trend has reversed (Figure 38).

The cultural and religious incentives in parts of South-East Asia for live animal imports do not exist to the same extent in China and Japan.
Figure 38 Australian live cattle exports to Japan and Japanese beef imports

Note: Australian cattle exports to Japan are used as a proxy for Japanese cattle imports.
Sources: ABS 2014c, United Nations Statistics Division 2014
4 Valuing Australia’s live export trade

While the majority of Australian livestock are slaughtered domestically, the live export trade is an important source of revenue for many Australian farmers. In 2013 the value of Australia’s livestock exports (feeder/slaughter cattle, sheep, goats and buffalo) was $686 million, an 8 per cent increase on the $634 million in export revenue in 2012, when cattle exports to Indonesia were severely limited as a result of import quotas. The live export trade is a major source of revenue for many cattle producers in northern Australia and sheep producers in southern Australia (mainly southern Western Australia and South Australia). As a result, the contribution of the trade to farm incomes and employment is concentrated in these areas.

Share of Australian turn-off exported live

Cattle

In 2013 live feeder and slaughter cattle exports accounted for around 7 per cent of cattle turn-off and breeder cattle exports accounted for 1 per cent (Figure 39). As a share of cattle turn-off, live feeder and slaughter cattle exports have fluctuated between 6 and 9 per cent since the mid 1990s. This reflects policy changes in major importing countries and in Australia, global economic conditions and competition in Australia between meat processors and live exporters.

In the short term, the share of cattle turn-off to the live export trade is expected to rise, reflecting continued strong demand from South-East Asia. Beef prices in Indonesia remain historically high. Local production is likely to fall in coming years, resulting in continued demand for imports of feeder and slaughter cattle from northern Australia (ABARES 2014).

Figure 39 Australian cattle turn-off

Sheep

Over the past two decades, the Australian sheep industry turned off, on average, around 35 million head a year. At its peak in 2001 live sheep exports made up around 17 per cent of total sheep turn-off. This has since declined to 6 per cent in 2013 (Figure 40).
In Western Australia, live sheep exports represent a much larger share of annual sheep turn-off and industry output. In 2013 live sheep sales represented 30 per cent of total sheep turn-off, down from 39 per cent in 2012 (Figure 41).

**Figure 40 Australian sheep turn-off**

Note: From July 2007, slaughter data does not include on-farm kills.
Source: ABS 2014c, ABS 2014d

**Figure 41 Western Australian sheep turn-off**

Note: From July 2007, slaughter data does not include on-farm kills.
Source: ABS 2014c, ABS 2014d

**Goats**

Australian live goat exports accounted for around 3 per cent of total goat turn-off in 2012 and 2013 (Figure 42). At its peak in 2001 this share was 13 per cent but both the increase in goat slaughter and the decrease in live exports shipped to the Middle East resulted in the share of live exports falling over time. Annual goat slaughter has increased from around 730 000 head in 2000 to more than 2 million head in 2013, as red meat processors have responded to growing
demand for goat meat in various importing markets, particularly North America and the Caribbean.

Figure 42 Australian goat turn-off

![Graph showing goat turn-off from 1998 to 2013.](image)

Sources: ABS 2014c, MLA 2014c

**Sources of livestock for live export trade**

**Cattle**

**Farms selling cattle for live export**

The majority of farms involved in the export of live feeder and slaughter cattle are in northern Australia where there are around 1500 farm businesses. Australian Agricultural and Grazing Industries Survey (AAGIS) data indicate that around 180 of these businesses derived more than 50 per cent of their beef cattle receipts from live export sales in the three years ending 2012–13.

**Reliance on live exports**

The northern live cattle export region is most reliant on the trade. However, not all areas within this region rely heavily on cattle exports. Generally farm businesses with the greatest reliance on the sale of live export cattle are located in the far northern and western parts of the region. Many farm businesses in the upper western portion of the Northern Territory, as well as the Kimberley, Pilbara and Murchison-Gascoyne regions of Western Australia, derived more than 50 per cent of their total beef cattle receipts from sale of cattle for live export, on average, in the three years ending 2012–13 (Map 3). Businesses in southern Australia are far less reliant on live export sales.
Proportion of total farm cash receipts from sale of beef cattle for live export, average for three years ending 2012–13

Source: AAGIS

Sheep

Farms selling sheep for live export

According to AAGIS, on average during the two years ending 2012–13:

- an estimated 2071 farms sold sheep for live export. This is around 7 per cent of all farms in Australia with more than 100 sheep

- 38 per cent of farms in Western Australia (1733 farms) with sheep sold sheep for live export. In Victoria, this share was 3 per cent (212 farms), while in South Australia it was 1 per cent (75 farms)

- around 1000 farms (4 per cent of all farms with more than 100 sheep) sold more than half of their total turn-off of sheep for live export. The majority of these farms were located in Western Australia.

- Additionally, the total number of sheep exported in 2012–13 was lower than in the previous year. The number of farms selling sheep for live export is estimated to have declined to around 1893, with just over 86 per cent of these farms located in Western Australia.

Reliance on live exports

According to AAGIS data, over the two years ending 2012–13, receipts from the sale of sheep or lambs for live export accounted for 0.7 per cent of the total cash receipts of all farms with more than 100 sheep.

For farms selling sheep or lambs for live export, live exports accounted for a larger share of sheep and lamb receipts in Western Australia (around 48 per cent) than in the other states (around 30 per cent). However, because of the much larger contribution of crops to total cash
receipts for Western Australian farms, the share of average total cash receipts from live export sales for Western Australian farms was not significantly different from the other states, averaging around 7 per cent for the two years ending 2012–13. Some parts of South Australia, including the western Eyre Peninsula, the mid-north and Yorke Peninsula, as well as northern Victoria and the New South Wales Riverina recorded significantly higher reliance on receipts from the sale of sheep and lambs for live export during this period (Map 4).

The majority of farms selling sheep or lambs for live export are mixed enterprise farms combining sheep, lambs and wool enterprises with grain growing and beef cattle. For farms selling sheep or lambs for live export in the two years to 2012–13, live export sales accounted for 7 per cent of average total cash receipts and 45 per cent of average sheep and lamb receipts.

Map 4 Proportion of total farm cash receipts from sale of sheep and lambs for live export, average for 2011–12 and 2012–13

Goats

The major goat producing states for the live export trade in 2013 were New South Wales (25,863 head), South Australia (25,732) and Queensland (19,174) (Figure 43). These three states accounted for 81 per cent of goats exported between 2007 and 2013. Around 96 per cent of Queensland goats exported in 2013 were loaded in New South Wales (MLA 2014a).
Value of live export trade

Australian livestock exports were valued at $685.5 million in the 2013 calendar year, an 8 per cent increase from $634 million in 2012 but well below the $886 million in 2009 (Table 8). A substantial recovery in live feeder and slaughter cattle exports is the reason for the rise in 2013, along with changes to Indonesia’s cattle and beef import policy during the year and an increase in cattle exports to other markets, including Vietnam. The increase in cattle exports more than offset the decline in sheep exports caused by the temporary loss of the Bahrain market.

Table 8 Value of Australian livestock exports to all destinations, $ million

<table>
<thead>
<tr>
<th>Year</th>
<th>Feeder and slaughter cattle</th>
<th>Sheep a</th>
<th>Goats a</th>
<th>Buffalo</th>
<th>Total livestock</th>
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<td>9.2</td>
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</tr>
<tr>
<td>2009</td>
<td>551.5</td>
<td>323.0</td>
<td>11.5</td>
<td>na</td>
<td>886.0</td>
</tr>
<tr>
<td>2010</td>
<td>531.4</td>
<td>322.5</td>
<td>10.3</td>
<td>na</td>
<td>864.2</td>
</tr>
<tr>
<td>2011</td>
<td>423.1</td>
<td>328.1</td>
<td>8.4</td>
<td>na</td>
<td>759.6</td>
</tr>
<tr>
<td>2012</td>
<td>352.5</td>
<td>272.9</td>
<td>8.1</td>
<td>0.4</td>
<td>634.0</td>
</tr>
<tr>
<td>2013</td>
<td>504.7</td>
<td>172.0</td>
<td>8.4</td>
<td>0.3</td>
<td>685.4</td>
</tr>
</tbody>
</table>

Note: a Includes feeder, slaughter and breeding animals. na not available

Source: ABS 2014c

Appendix A provides detailed data for the five years to 2013 on the volume and value of livestock exports to all markets and exports by port of loading. The following sections provide detail on the value of livestock exports for the individual commodity industries—cattle, sheep and goats—and livestock export prices received.
Cattle

The value of Australian live feeder and slaughter cattle exports in 2013 was $505 million. Despite recent growth in shipments, the value of exports in 2013 was 36 per cent lower in real terms than the peak recorded in 2002, when exports were valued at $784 million (in 2013 dollars) (Figure 44).

Figure 44 Value of live feeder and slaughter cattle exports from Australia

In 2013 live cattle exports from the Northern Territory were valued at $258 million. This was 58 per cent higher than the previous year, reflecting the relaxation of import restrictions in Indonesia and the emergence of Vietnam as a significant market. The highest value destinations in 2013 were Indonesia ($203 million), Vietnam ($31 million) and the Philippines ($12 million).

The value of feeder and slaughter cattle exports from Western Australia was $164 million in 2013. This is 34 per cent lower than in 2010 (in real terms), as increased exports to Israel and Turkey only partially offset reduced exports to Indonesia. The highest value destinations in 2013 were Indonesia ($71 million) and Israel ($60 million).

In Queensland, the value of live feeder and slaughter cattle exports was $49 million and has been highly variable year-on-year since the mid 1990s. For example, live cattle exports from Queensland fell in the mid 2000s after domestic cattle prices rose and cattle producers increasingly sold cattle to meat processors. Indonesia was the major export destination for Queensland cattle in 2013, with a value of $29 million.

Live export prices received

In 2013 the export price (unit value) of live cattle averaged around $700 a head. This was 25 per cent lower than 1990 (in real terms), largely because of changes in the type of cattle exported (Figure 45). In 2013, Bos indicus feeder cattle to Indonesia accounted for the majority of total live cattle exports, whereas wagyu steers exported to Japan comprised around half the trade in the early 1990s.

Prices received for Australian cattle exports vary depending on their market (Figure 46). This reflects the type and weight of cattle exported as well as the number of countries competing in the market. Cattle exports to Japan received the highest price (per head) of any Australian export market in 2013, as these cattle are primarily wagyu feeder cattle exported to be fattened.
on grain to produce a highly marbled meat (Lake Wagyu 2013). Exports to Mauritius, Vietnam and Brunei Darussalam also received relatively high prices, as the majority of cattle exported to these countries in 2013 were at slaughter weight (Figure 47).

**Figure 45 Average live export cattle price**

![Average live export cattle price chart]

Source: ABS 2014c

**Figure 46 Average live cattle export prices, 2013**

![Average live cattle export prices chart]

Source: ABS 2014c

Prices received for Australian cattle exported to Indonesia in 2013 averaged $662 a head. Since 2010 prices have been low compared with the long-term average, reflecting a higher proportion of feeder cattle exports after the Indonesian Government imposed a 350-kilogram weight restriction on imported cattle. Additionally, Indonesian Government quota restrictions resulted in the supply of Australian cattle for the Indonesian market exceeding demand. These cattle cannot be easily redirected to other export markets because of low demand in the South-East Asian region for feeder cattle (Figure 47).
Sheep

The value of live sheep exports fell from a peak of $540 million in 2002 to $172 million in 2013 (in 2013 dollars) (Figure 48), reflecting lower export volumes and falling sheep prices. Between 2007 and 2011 strong price growth largely offset the decline in the volumes of live sheep exported.

In 2013 live sheep exports from Western Australia were valued at $145 million. The highest value destination markets were Kuwait ($62 million), Qatar ($38 million) and Jordan ($25 million). Exports fell in value terms by around 30 per cent compared with the previous year, largely because of substantial decreases in export prices to major markets and a decline in the volume of exports to Bahrain and Turkey.
In Victoria, the value of live sheep exports increased by around 2 per cent in 2013 to $18 million, while export volumes rose by 60 per cent. Major export destinations for Victorian sheep were Qatar and Kuwait. In South Australia, live sheep exports fell by around 85 per cent in 2013 to around $7 million, following significant year-on-year reductions in the number of sheep exported to Bahrain. Shipments from South Australia to Jordan and Kuwait also fell, with sheep to these two markets primarily sourced from Western Australia.

**Live export prices received**

In 2013, the export price (unit value) of live sheep averaged around $87 a head. The export unit value of sheep fell by 35 per cent between 2011 and 2013. The live export trade has a greater influence on domestic prices in Western Australia than it does on prices in other states. This is reflected in the similarity between the trends of the average saleyard price (price received by producers) and the live export price (price received by the exporter) for sheep in Western Australia over the past 20 years (Figure 49).

Sheep destined for export can be purchased directly through livestock brokers or at saleyards. Costs in exporting the livestock (including purchased feed, veterinary fees and shipping costs) will influence the gap in price received between the farmer and the exporter. Holding these costs constant, higher demand leading to higher prices received by exporters will place upward pressure on the saleyard prices received by sheep producers.

![Figure 49 Live sheep export unit value and average saleyard price, Western Australia](image)

Sources: ABARES, ABS 2014c, MLA

**Goats**

The value of Australian live goat exports in 2013 was around $8.4 million, 3 per cent higher than in the previous year. Increased export volumes offset a decline in export prices received (Figure 50).

Australian live goat exports to South-East Asian countries were valued at around $8 million, or 96 per cent of the value of total exports in 2013. Malaysia is the largest export destination for Australian goats in the region, with exports valued at $6.1 million (55 400 head) in 2013, down from $7.8 million in 2012. The other significant South-East Asian market in 2013 was Singapore, which imported 16 800 goats valued at $1.6 million.
The Middle East, which was once a major export destination for Australian goats, accounted for 1 per cent of Australian goat exports between 2004 and 2013. Australia exported around 100,000 goats to Saudi Arabia between 2001 and 2003 following a ban on livestock imports from Somalia, a large supplier at the time (Manson 2013).

**Live export prices received**

Goat export prices (unit values) to South East Asia averaged $109 a head in 2013, a fall of around 16 per cent from 2012. The price of Australian live goat exports to the region has declined in real terms since 2005 (Figure 51). Given that live export represents around 3 per cent of total goat turn-off in Australia, it is unlikely that domestic prices are strongly affected by the trade.

Over the five years to 2013, goat prices averaged $123 a head for exports to Malaysia and $115 a head for exports to other South-East Asian countries. Over the same period, prices of goats exported to the Middle East and other countries (including Turkey, New Zealand, China, Uruguay, Canada and the United States) averaged much higher, reflecting smaller volumes and a higher proportion of higher value breeding stock and fibre-producing goats.

**Figure 51 Australian live goat export unit values to South-East Asia**

Source: ABS 2014c
Main ports of export

Most animals for live export from Australia are transported by sea to their destinations (around 96 per cent of the livestock trade in 2013). Generally goats and sheep to Malaysia and breeder animals are the only livestock exported by air. Multiple species can be transported by ship, with consignments to the Middle East often including both cattle and sheep. Map 5 illustrates the direction of trade from each of the ports used for live export in Australia.

Map 5 Australian livestock export ports and destinations

Source: Department of Agriculture 2014 (unpublished)

In 2013 live cattle were exported from 12 Australian ports. Darwin accounted for almost half of total exports, followed by Fremantle (19 per cent), Broome (10 per cent), Townsville (9 per cent) and Wyndham (5 per cent) (Figure 52). Most cattle exported from Darwin are destined for South-East Asia, reflecting proximity to the major cattle producing regions in northern Australia and the major markets in South-East Asia. In contrast, cattle exported from Fremantle are largely destined for the Middle East and North Africa. Many producers in the Kimberley, Pilbara and Gascoyne–Murchison regions send cattle south into areas with good feed to grow out the cattle for export through southern ports.

The northern wet season affects supply of livestock to smaller ports in northern Australia. This rainfall pattern determines when management operations such as mustering and transport can occur. For example, more than 80 per cent of exports from Broome are loaded between April and September (Curtis & McCormick 2013). Similarly, 78 per cent of exports from Wyndham are loaded during this period.
For sheep, 82 per cent of live exports were shipped from Western Australia in 2013, with Fremantle the major port of loading. Smaller shipments of sheep have been loaded at Geraldton and Broome in recent years, although no sheep were exported from these ports in 2013.

Other major ports of loading in 2013 were Portland (Victoria), with 264 000 head, and Port Adelaide (South Australia), with 58 000 head (Figure 53). Live sheep exports from both ports have declined since 2002, when annual loadings were around 1.3 million head in each port. Annual live sheep exports loaded in Devonport (Tasmania) averaged around 70 000 head between 2001 and 2006, but no live sheep have since been loaded there for export.

When supply of wethers in Western Australia is sufficient, voyages to the Middle East are usually loaded in Fremantle. It takes less time to reach the Middle East from Fremantle than from Portland or Port Adelaide and the voyage is therefore less costly. Where consignments cannot be filled in Western Australia, or sheep can be purchased sufficiently cheaper elsewhere, exporters may purchase and load sheep from other states, typically South Australia or Victoria. Exports from these states have declined in recent years because of growth in sheep supply in Western Australia and fall in demand from live export markets. Sheep can be loaded at more than one port; this occurred for eight voyages of sheep in 2013.
Studies on the effects of the loss of the live export trade

A number of studies have analysed the effect of live exports on domestic livestock prices and profitability of livestock producers. Most of these reports concluded that the absence of the live export trade would result in lower domestic livestock prices.

- The Centre for International Economics (2014) estimated that, without the live export trade, the average saleyard price of older sheep in Australia would fall by $13.30 a head (24.4 per cent), while lamb prices would fall by $4.07 a head (4.5 per cent). It also estimated that the greatest impact would be in Western Australia, where the price of older sheep would fall by $35.99 a head (66 per cent), and the sheep flock would fall by around 1.8 million head.

- The Centre for International Economics (2011) estimated that, without the live export trade, grass-fed and grain-fed cattle prices in Australia would have been 4 per cent and 1 per cent lower, respectively, over the four years to 2008–09. The study also estimated that the farm gate price of older sheep in Australia would have fallen by 14.6 cents a kilogram (on a live weight basis) between 2005–06 and 2008–09 without the live export trade, while the price of lambs would have fallen by 12.2 cents a kilogram. In Western Australia, the price of older sheep would have fallen by 42 per cent (46 cents a kilogram) on a live weight basis.

- The Western Australian Department of Agriculture and Food simulated the effects of two live export scenarios on business profit of farms in Western Australia (Kingwell et al. 2011). The first was a ban on exports to Indonesia for a short period and the second was a total ban on exports to all countries.
  - A ban on exports to Indonesia for a short period was found to lower farm business profit because farmers would receive lower export prices when trade resumed ‘because of greater competition between pastoralists and higher compliance and monitoring costs’. During the ban, farm business profit would also be reduced because producers would incur higher transport costs on cattle sold domestically.
  - A ban on exports to all markets was found to result in a more significant decline in farm business profit. Farmers would be disadvantaged because of lower saleyard prices and increased transport costs. The loss of the live export market forces producers to have all cattle processed through Australian abattoirs. National competition among cattle producers was assumed to cause a 10 per cent reduction in the sale price received. The simulation assumed that many pastoralists would not have more profitable alternative enterprises to turn to and would continue to supply similar volumes of beef cattle, in spite of their reduced profitability.

- ACIL Tasman (2009) found the value of the average sheep flock in Western Australia would fall by around $11 000 a farm and the value of the sheep industry in Western Australia would fall by $74.5 million (at 2006–07 flock levels), if the live sheep trade were to be phased out over a five-year period. The study assumed, however, this would have no sustained impact on sheep and lamb prices, justified by the expectation that stronger demand for processed sheep meat in the Middle East and BRIC countries (Brazil, Russia, India and China) would absorb the impact of the live trade ban. The reduction in the flock value reflects the cost of flock adjustment to sheep producers, in response to the loss of the live export trade.
Clarke et al. (2007) quantified the effect of cessation of Australian live exports on cattle prices. In the Northern Territory, the immediate short-term effect was estimated to be a farm-gate price decline of around 59 cents a kilogram to accommodate the freight cost to central and southern Queensland. In northern Western Australia, cattle prices were estimated to fall from $1.60 a kilogram to $1.10 a kilogram with the imposition of additional costs of $0.21 a kilogram for transport, fees and animal husbandry. In southern Western Australia, the estimated effect was a reduction in cattle prices from $1.80 a kilogram to $1.40 a kilogram.

Hassall and Associates (2006) estimated that closure of the live export industry between 2002 and 2004 would have resulted in Australian grass-fed and grain-fed cattle prices falling by 7 per cent and 4 per cent, respectively. For sheep they estimated that the national sheep price, on a live weight basis, would fall by around 17 cents a kilogram (or 18 per cent) while lamb prices would fall by 7 cents a kilogram (or 4 per cent). The study, which used data for 2002 to 2004, also estimated a reduction in the gross value of the Australian sheep meat industry of around $219 million.

The Keniry review (2003) noted: ‘Since the closure of the Saudi Arabian market in late October 2003, wether prices in Western Australia have dropped by A$10 to A$20 per head. This highlights the significance of the livestock export trade in providing market competition with improved returns to producers.’

These studies reached the common conclusion that interruptions to the live export trade would result in a redirection of livestock toward the domestic market, placing downward pressure on saleyard prices. The potential for the domestic market to absorb the increased supply without a decline in price appears to be limited. Additionally, for cattle, producers in northern Australia would face substantially higher transport costs to move stock to southern Australia for further backgrounding or entry into feedlots.

**Employment**

The livestock export trade provides economic benefits and employment to a range of participants in the Australian supply chain besides farmers selling their livestock for export. Businesses that derive revenue from the trade include on-farm contractors, road transporters, suppliers of hay/fodder to export yards and cattle ships, freight companies, veterinary and feedlot service providers and fuel suppliers (Australian Livestock Exporters’ Council 2014).

Clarke et al. (2007) estimated the employment generated by live export industries both directly (that is, on the farm) and in other industries. Data from the five years to 2005–06 showed 9854 full-time equivalent (FTE) jobs were generated from the live sheep and cattle export industries, excluding dairy cattle (Table 9).

**Table 9 Employment generated by live export industries**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Region</th>
<th>Direct FTEs</th>
<th>Indirect FTEs</th>
<th>Total FTEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>Northern Western Australia</td>
<td>775</td>
<td>270</td>
<td>1 045</td>
</tr>
<tr>
<td>Cattle</td>
<td>Southern Western Australia</td>
<td>825</td>
<td>847</td>
<td>1 672</td>
</tr>
<tr>
<td>Cattle</td>
<td>Northern Territory</td>
<td>1 048</td>
<td>773</td>
<td>1 821</td>
</tr>
<tr>
<td>Cattle</td>
<td>Queensland</td>
<td>534</td>
<td>679</td>
<td>1 213</td>
</tr>
<tr>
<td>Sheep</td>
<td>Southern Western Australia</td>
<td>2 025</td>
<td>2 078</td>
<td>4 103</td>
</tr>
<tr>
<td>Total</td>
<td>All regions listed above</td>
<td>5 207</td>
<td>4 647</td>
<td>9 854</td>
</tr>
</tbody>
</table>

Note: FTE is full-time equivalent.
Source: Clarke et al. 2007
ABARES estimates that, between 2011 and 2013, around 4200 people were employed directly on farm in producing sheep or cattle for live export. It calculated on-farm employment by using the estimates of total employment in the combined industries of grains, sheep and beef cattle farming from the 2011 ABS Agricultural Census as the base employment figure.

ABARES estimated employment by applying relative labour intensities for cattle and sheep farming from its Australian Agricultural and Grazing Industries Survey (AAGIS) to the base employment figure and then applied the average share of turn-off exported live in each industry over a three-year period. This provided estimates for the cattle industry of 2427 people and for the sheep industry 1775 people. Assuming a ratio of indirect to direct employment similar to that estimated by Clarke and colleagues (2007), 3800 people would have been employed indirectly in the live export trade, bringing the total number employed by the live export trade to around 8000.

The live cattle export trade provides employment opportunities for Indigenous people in the Northern Australian live cattle export region. For example, the Indigenous Land Corporation (2010) reported that, in 2009–10, 59 Indigenous people were employed full time and 120 part time on the 28 Indigenous-held properties that participate in the Kimberley Indigenous Management Support Service (KIMSS) project.

Properties in the Kimberley have established training facilities for station hands. They focus on training Indigenous youth in preparation for employment in the industry and provide on-the-job training on working stations. In 2009–10 Indigenous people attended 147 KIMSS-facilitated training courses in the Kimberley (Indigenous Land Corporation 2010). These courses covered corporate governance, land management, strategic planning and animal welfare.
5 Farm financial performance

This chapter presents financial performance estimates for farms involved in the sale of cattle and sheep for live export. The estimates are based on data collected in the ABARES Australian Agricultural and Grazing Industries Survey (AAGIS).

Farm businesses selling cattle for live export

The average herd size of farm businesses operating in the northern live cattle export region (see Map 3) is four times larger than for specialist beef cattle producers in the rest of northern Australia and around 10 times larger than in southern Australia. As a result, average farm cash income for the northern live cattle export region has historically been well above that for the balance of northern Australia and southern Australia (Figure 54). However, farm cash incomes of cattle producers in the northern live export region have been generally declining since 2005–06. Over the three years to 2012–13, average farm cash incomes declined as a result of reduced turn-off of cattle for live export. The reduction was in both the number of farms selling cattle for live export and the average number of cattle sold for live export per farm. The effect on farm cash receipts of the reduction in turn-off for live export was partially offset by the sale of other cattle.

Initially, the average price received for other cattle (cattle sold for slaughter in Australia) rose in 2011–12 as excellent seasonal conditions resulted in increased sale weights. Wet seasonal conditions in 2010–11 and 2011–12 and abundant pasture, together with the slowdown in live cattle exports, resulted in an increase in beef cattle numbers across northern Australia. The increase in cattle numbers halted abruptly in 2012–13 as failure of the northern wet season resulted in dry conditions and led to increased cattle turn-off and lower beef cattle prices.

Average total cash receipts declined by 25 per cent between 2010–11 and 2012–13 as a result of lower turn-off in 2011–12 and then lower average sale prices for cattle in 2012–13. Despite reductions in purchases of beef cattle and transfer of beef cattle to properties in the region by corporate operators, average farm cash income declined from an average of $157 200 a farm in 2010–11 to $96 400 in 2012–13 (Table 10).

In 2013–14 turn-off of cattle for live export is projected to increase with both the number of farm businesses selling beef cattle for live export and the average number of cattle sold per farm for live export increasing (Table 10). The increase in live cattle exports is not expected to result in an increase in average total cash receipts, as continuing high beef cattle turn-off is projected to result in lower sale prices. In addition, average total cash costs are projected to increase as a result of higher fodder expenditure during 2013–14 and increased transfer of beef cattle to properties in the region, with some improvement in seasonal conditions from March 2014.

Farm cash income is projected to average $27 000 a farm in 2013–14—well below the average of $165 000 for the 10 years ending 2012–13 (Table 10 and Figure 55).

Many of the largest herd size farms in the northern live cattle export region are corporate entities. These farms dominate turn-off and performance estimates. Their financial performance is typically well above the average for smaller herd size businesses in the region and often their performance is very variable from year to year.
Figure 54 Farm cash income, specialist beef cattle producers

ABARES provisional estimate.
Source: AAGIS

Figure 55 Financial performance of beef producing farms, northern live cattle export region

ABARES provisional estimate.
Source: AAGIS
Table 10 Financial performance of beef cattle producing farm businesses, northern live cattle export region

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Farms selling cattle for live export</td>
<td>%</td>
<td>32</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Beef cattle numbers at 30 June</td>
<td>no.</td>
<td>4 914</td>
<td>4 569</td>
<td>4 092</td>
</tr>
<tr>
<td>Beef cattle purchases</td>
<td>no.</td>
<td>135</td>
<td>120</td>
<td>89</td>
</tr>
<tr>
<td>Beef cattle transferred in</td>
<td>no.</td>
<td>209</td>
<td>117</td>
<td>79</td>
</tr>
<tr>
<td>Beef cattle sold—total</td>
<td>no.</td>
<td>1075</td>
<td>899</td>
<td>838</td>
</tr>
<tr>
<td>Beef cattle sold—live export</td>
<td>no.</td>
<td>261</td>
<td>205</td>
<td>101</td>
</tr>
<tr>
<td>Beef cattle transferred out</td>
<td>no.</td>
<td>355</td>
<td>347</td>
<td>260</td>
</tr>
<tr>
<td>Cattle turn-off rate</td>
<td>%</td>
<td>29</td>
<td>28</td>
<td>28</td>
</tr>
</tbody>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Beef cattle sales—total</td>
<td>$</td>
<td>660 850</td>
<td>587 170</td>
<td>497 000</td>
</tr>
<tr>
<td>Beef cattle sales—live export</td>
<td>$</td>
<td>149 100</td>
<td>112 210</td>
<td>47 700</td>
</tr>
<tr>
<td>Value of cattle transferred out</td>
<td>$</td>
<td>187 910</td>
<td>154 400</td>
<td>116 200</td>
</tr>
<tr>
<td>Total cash receipts</td>
<td>$</td>
<td>895 010</td>
<td>799 090</td>
<td>678 400</td>
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</tbody>
</table>

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</tr>
</thead>
<tbody>
<tr>
<td>Hired labour costs</td>
<td>$</td>
<td>75 110</td>
<td>71 260</td>
<td>59 200</td>
</tr>
<tr>
<td>Materials</td>
<td>$</td>
<td>194 040</td>
<td>187 200</td>
<td>186 700</td>
</tr>
<tr>
<td>Services and contracts</td>
<td>$</td>
<td>162 470</td>
<td>148 680</td>
<td>152 800</td>
</tr>
<tr>
<td>Cattle purchases</td>
<td>$</td>
<td>80 710</td>
<td>83 210</td>
<td>58 900</td>
</tr>
<tr>
<td>Value of cattle transferred in</td>
<td>$</td>
<td>130 900</td>
<td>76 750</td>
<td>41 500</td>
</tr>
<tr>
<td>Total cash costs</td>
<td>$</td>
<td>737 810</td>
<td>652 550</td>
<td>582 000</td>
</tr>
</tbody>
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<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Total cash receipts</td>
<td>$</td>
<td>895 010</td>
<td>799 090</td>
<td>678 400</td>
</tr>
<tr>
<td>less total cash costs</td>
<td>$</td>
<td>737 810</td>
<td>652 550</td>
<td>582 000</td>
</tr>
<tr>
<td>Farm cash income</td>
<td>$</td>
<td>157 200</td>
<td>146 550</td>
<td>96 400</td>
</tr>
<tr>
<td>Farms with negative farm cash income</td>
<td>%</td>
<td>37</td>
<td>40</td>
<td>58</td>
</tr>
<tr>
<td>Farm business profit</td>
<td>$</td>
<td>139 870</td>
<td>132 760</td>
<td>96 400</td>
</tr>
<tr>
<td>Profit at full equity</td>
<td>$</td>
<td>226 570</td>
<td>208 490</td>
<td>108 100</td>
</tr>
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</table>

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</tr>
</thead>
<tbody>
<tr>
<td>Total capital at 30 June</td>
<td>$</td>
<td>10 772 040</td>
<td>9 362 940</td>
<td>8 251 100</td>
</tr>
<tr>
<td>Farm business debt at 30 June</td>
<td>$</td>
<td>1 152 840</td>
<td>1 132 810</td>
<td>1 058 700</td>
</tr>
<tr>
<td>Farm business equity at 30 June</td>
<td>$</td>
<td>6 458 180</td>
<td>5 495 680</td>
<td>4 880 900</td>
</tr>
<tr>
<td>Farms with less than $10 000 debt at 30 June</td>
<td>%</td>
<td>37</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>Farm liquid assets including Farm Management Deposits at 30 June</td>
<td>$</td>
<td>212 400</td>
<td>152 110</td>
<td>119 600</td>
</tr>
<tr>
<td>Equity ratio at 30 June</td>
<td>%</td>
<td>85</td>
<td>83</td>
<td>82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest paid to receipts ratio</td>
<td>%</td>
<td>18</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>Farms with less than 70% equity and interest to receipts ratio exceeding 15%</td>
<td>%</td>
<td>11</td>
<td>9</td>
<td>19</td>
</tr>
</tbody>
</table>

*a Average per responding farm. p Preliminary estimate. y Provisional estimate. na not available.

Note: Figures in parentheses are standard errors expressed as a percentage of the estimate.

Source: AAGIS
## Table 11 Financial performance of farm businesses selling more than 100 sheep, 2011–12 to 2012–13, average per farm

<table>
<thead>
<tr>
<th>Physical</th>
<th>Farms selling sheep or lambs for live export</th>
<th>Farms selling more than 50% of sheep for live export</th>
<th>All farms with more than 100 sheep</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Victoria</td>
<td>South Australia</td>
<td>Western Australia</td>
</tr>
<tr>
<td>Area sown to crop ha</td>
<td>186 (35)</td>
<td>229 (64)</td>
<td>997 (13)</td>
</tr>
<tr>
<td>Beef cattle at 30 June head</td>
<td>283 (59)</td>
<td>39 (31)</td>
<td>44 (27)</td>
</tr>
<tr>
<td>Sheep at 30 June head</td>
<td>2 621 (12)</td>
<td>5 943 (30)</td>
<td>3 123 (8)</td>
</tr>
<tr>
<td>Total sheep sold head</td>
<td>783 (18)</td>
<td>1 307 (22)</td>
<td>600 (18)</td>
</tr>
<tr>
<td>Sheep sold live export head</td>
<td>266 (32)</td>
<td>463 (40)</td>
<td>278 (17)</td>
</tr>
<tr>
<td>Total lambs sold head</td>
<td>155 (67)</td>
<td>539 (67)</td>
<td>525 (12)</td>
</tr>
<tr>
<td>Lambs sold live export head</td>
<td>110 (73)</td>
<td>220 (19)</td>
<td>189 (19)</td>
</tr>
<tr>
<td>Total sheep and lambs sold</td>
<td>940 (11)</td>
<td>1 861 (27)</td>
<td>1 152 (14)</td>
</tr>
<tr>
<td>Sheep and lambs sold live export head</td>
<td>266 (32)</td>
<td>573 (28)</td>
<td>498 (12)</td>
</tr>
<tr>
<td>Receipts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop receipts $</td>
<td>65 381 (67)</td>
<td>106 631 (62)</td>
<td>465 533 (15)</td>
</tr>
<tr>
<td>Sheep and lamb sales $</td>
<td>69 341 (24)</td>
<td>202 657 (30)</td>
<td>95 656 (12)</td>
</tr>
<tr>
<td>Receipts sheep and lambs sold live export $</td>
<td>21 489 (38)</td>
<td>63 473 (30)</td>
<td>45 693 (11)</td>
</tr>
<tr>
<td>Wool sales $</td>
<td>87 607 (10)</td>
<td>289 150 (32)</td>
<td>102 222 (11)</td>
</tr>
<tr>
<td>Beef cattle sales $</td>
<td>95 397 (65)</td>
<td>8 585 (28)</td>
<td>10 754 (28)</td>
</tr>
<tr>
<td>Other cash receipts $</td>
<td>7 210 (57)</td>
<td>63 784 (43)</td>
<td>22 525 (15)</td>
</tr>
<tr>
<td>Total cash receipts $</td>
<td>229 539 (23)</td>
<td>757 620 (26)</td>
<td>694 520 (11)</td>
</tr>
<tr>
<td>Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total cash costs $</td>
<td>153 382 (40)</td>
<td>433 043 (29)</td>
<td>490 642 (9)</td>
</tr>
<tr>
<td>Financial performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm cash income $</td>
<td>76 157 (21)</td>
<td>324 577 (26)</td>
<td>203 877 (20)</td>
</tr>
<tr>
<td>Farm business profit $</td>
<td>-28 653 (135)</td>
<td>259 983 (37)</td>
<td>75 175 (51)</td>
</tr>
<tr>
<td>Rate of return excluding capital appreciation %</td>
<td>-0.6 (194)</td>
<td>5.7 (22)</td>
<td>3.1 (25)</td>
</tr>
<tr>
<td>Estimated population of farms no.</td>
<td>212</td>
<td>75</td>
<td>1 733</td>
</tr>
</tbody>
</table>

Note: Figures in parentheses are standard errors expressed as a percentage of the estimate provided. All financial data in 2012–13 dollars.

Source: AAGIS
Farm businesses selling sheep for live export

On average, farm cash incomes and rates of return for farms selling sheep for live export exceeded the average for all farms with sheep, over the period 2011–12 to 2012–13 (Table 11). Farm cash incomes and rates of return for farms selling sheep for live export also exceeded the average for all Australian broadacre farms. The average rate of return for farms selling sheep for live export was 3 per cent compared with 1.7 per cent for all broadacre farms over the period 2011–12 to 2012–13.

To a large extent, farm cash incomes and rates of return for farms involved in the sale of sheep for live export are higher because of the larger scale of operations and greater reliance on crop enterprises compared with the average for all farms with sheep or all broadacre farms.

The financial performance of farms selling sheep for live export was generally strong, with positive average rates of return recorded over the period 2011–12 to 2012–13 in all states involved in the trade, except Victoria.
6 Factors affecting the sustainability of live exports

In addition to international market demand for live animal imports and the factors affecting supply of livestock in Australia, a range of factors will influence the sustainability of the livestock export trade. These include the quality of transport infrastructure and access to ports, market access and trade policies in importing countries, and Australian community concern around animal welfare issues in the live trade. Development of a meat processing industry in northern Australia could also have implications for the supply of animals for the live export trade.

Transport infrastructure

The cattle and sheep industries rely on the road network to transport animals from farms to port. In much of northern Australia access to roads is highly vulnerable to wet season disruptions (CSIRO 2013). Challenges exist with road transport where highways and major roads, most of which are unsealed, and access roads to farms become inaccessible because of inundation or road closures. This limits the period of the year during which live animal exports are possible. Weight limits imposed on roads and bridges also prohibit the trucking of livestock in some areas.

Competition from mining and tourism also contributes to the deterioration of the northern beef roads, while funding from governments to maintain and upgrade these roads has been limited. In some areas the funding base for road network maintenance could be falling, at the same time as use of the road network increases (Nguyen et al. 2013).

Around three-quarters of Australian live sheep exports are transported to the Fremantle port for export. Unlike northern Australia, most major roads in the southern regions of Western Australia are sealed and not subject to wet season conditions and closures. However, challenges remain around the transport of livestock to holding depots and ports when livestock need to travel through major urban areas of Perth and Fremantle.

Most ports from which cattle and sheep are exported have at least two common features—the port is located near a significant population centre or area of societal importance, such as a tourism sites, and the port is not used exclusively for livestock loading (Gleeson et al. 2012). The minerals and energy sector is increasingly competing with the live cattle export industry for port loading capacity. As demand for Australia’s live cattle exports increases, this pressure will continue to grow (Nguyen et al. 2013). For example, Darwin is the largest live cattle export port in Australia and mineral exporters compete for loading space. In March 2014 last minute negotiations between the Darwin Port Corporation, cattle exporters and the Northern Territory Government resolved a potential bottleneck of cattle as exporters sought to load cattle to Indonesia before import permits expired (Brann 2014a).

Port congestion is a problem not only in Australia but also in a number of our export markets, as port logistics and infrastructure are underdeveloped. Tanjung Priok, the major port in Jakarta, is the main Indonesian destination port for Australian cattle exports. The port is the largest and busiest sea port in Indonesia and handles around 50 per cent of the entire flow of goods into and out of Indonesia (Indonesia Port Corporation 2014). In 2013 more than half of Australian cattle exports to Indonesia were unloaded at this port (Figure 56). Exporters have experienced congestion issues at this port in the past, with delays in unloading potentially jeopardising the welfare of the cattle.
In Indonesia cattle are unloaded from ships and often transported from port to feedlot or abattoir on small trucks. Road trains and large trucks, as used in Australia, are generally unavailable and not practical in many regions of the country. Similarly in many other regions of South-East Asia small trucks are used to transport live animals, further limiting cattle movements.

In other parts of South-East Asia issues exist around meat processing and access to abattoirs. For example, bottlenecks emerged at some abattoirs in Vietnam with the large quantity of cattle recently shipped to that market. Some importing companies are making major investments in infrastructure with several large, new abattoirs and feedlots under construction (Brann 2014b).

**Meat processing**

Development of a meat processing sector in northern Australia could complement livestock exports, providing northern producers with a market for out-of-specification stock that currently have little value. Such a market would improve producer incomes and provide an opportunity to improve herd structure and increase productivity by encouraging earlier turn-off of older cows, resulting in younger breeding herds (ACIL Tasman 2012).

The location of meat processing facilities in Australia is shown in Map 6. Export certified meat processing facilities in the north are limited to several on the northern and central coast of Queensland, with most in south-east Queensland and southern Australia—an unprofitable distance from cattle located in the Kimberley, the Northern Territory and even much of north and central Queensland.
Two new meat processing facilities in northern Australia are close to completion—the Australian Agricultural Company’s (AACo) facility near Darwin and Yeeda Pastoral Company’s abattoir near Broome. These facilities are both expected to complement rather than replace livestock exports—primarily processing older cows and slaughter cattle that do not meet live export specifications.

The AACo facility is expected to start operations in September 2014, with throughput to commence at around 300 head of cattle a day before steadily increasing to 1000 head a day at full capacity (AACo 2013). The Yeeda Pastoral Company is constructing a beef cattle abattoir approximately 70 kilometres east of Broome, in the Kimberley region. The facility is scheduled to be operational by mid 2014 and is expected to process up to 50 000 head of cattle a year (Hayes 2014). Potential export markets for the beef produced include the United States manufacturing beef market, the European Union and various halal beef markets.

Development of the meat processing sector in northern Australia could eventually provide diversification opportunities for producers of live export cattle. However, this would require adjustment by producers toward fattening enterprises, both grazing and feedlots (Gleeson et al. 2012). This would take time to develop and would require irrigation for producing fodder and grain nearby. Other factors influencing the capacity to successfully establish substantial meat processing facilities include:

- continuity of cattle supplies—difficult given that production in northern Australia is highly seasonal because of limited wet season access to cattle
- competitive access to markets, including the domestic market—given extensive land transport required to freight meat to the larger population centres

Source: Gleeson et al. 2012
reliable source of skilled labour—processors will need to offer higher salaries to attract skilled labour to remote localities, which will reduce margins

cost-effective transport, energy supply and potable water—the Australian meat processing sector already has higher processing costs than competitor countries.

Market access

As indicated in earlier chapters, imports of Australian cattle, sheep and goats for feeder/slaughter purposes in foreign markets are generally subject to low tariff barriers. However, some markets have implemented other trade measures and strict sanitary regulations.

The sustainability of Australia’s live cattle export trade could be affected by importing governments’ future policies, including on self-sufficiency in beef production. In Indonesia, imports of cattle and beef since 2010 have been subject to trade measures to support self-sufficiency objectives, including weight limits, import quotas and, since 2013, a reference price mechanism (see Box 2).

The Australian Government in July 2013 announced that Australia would provide financial assistance to develop an Indonesia–Australia Partnership on Food Security in the Red Meat and Cattle Sector. The partnership will allow government and industry in Indonesia and Australia to work jointly to improve the productivity, sustainability and competitiveness of the Indonesian red meat and cattle sectors. Membership of the partnership will consist of government and non-government representatives with experience in the red meat and cattle industry, business and investment sectors. The Australian Government has made available a $60 million assistance package to launch priority investment and cooperation activities identified by the partnership (Department of Agriculture 2014b).

In February 2014 the Australian Minister for Agriculture announced that Australia would no longer require memorandums of understanding (MoUs) with new markets prior to the commencement of livestock export trade. This requirement often involved prolonged government-to-government negotiations and its removal should expedite access to new markets, subject to ESCAS requirements being met.

Overseas governments' biosecurity regulations could also be a significant determinant of the sustainability of the live cattle trade over the medium term. For example, the Indonesian Government permits the import of beef and live cattle only from countries that are classified by the World Organisation for Animal Health (OIE) as being free from foot and mouth disease (FMD) without vaccination. This precludes imports of beef and cattle from Brazil and India. Any changes to these regulations could open up the Indonesian beef and cattle import markets to Brazil and India, resulting in increased competition for Australian exports.

Animal welfare

Significant community concern has been expressed in Australia in the past several years over the welfare of livestock exported to foreign markets. In response, the Australian Government and the livestock export industry are working together to improve the welfare of livestock across the entire supply chain through regulatory and other measures. Two regulatory frameworks governing the livestock export trade are the Australian Standards for the Export of Livestock (ASEL) and the Exporter Supply Chain Assurance System (ESCAS). Figure 57 illustrates the coverage of these two regulatory frameworks across the supply chain, which reaches to the point of slaughter in destination countries.
The Australian Government introduced ASEL in 2004 to protect the welfare of Australian animals exported by sea and air up to the point of disembarkation overseas. The current standards cover the five major steps along the livestock export chain up to disembarkation:

1) sourcing and on-farm preparation of livestock
2) land transport of livestock for export
3) management of livestock in registered premises
4) vessel preparation and loading
5) on-board management of livestock.

The standards also cover air transport of livestock.

**Figure 57 Regulation of live exporters across the supply chain**

ESCAS has been implemented progressively since 2011 and requires exporters to establish supply chain arrangements that deliver animal welfare outcomes in line with internationally agreed OIE standards. Under ESCAS, all slaughter and feeder livestock exporters must be certain they can track and control movements of animals through their supply chains and conduct independent audits of their supply chains to ensure compliance with animal welfare standards. The ESCAS framework seeks to minimise adverse animal welfare incidents for Australian livestock but, when they do occur, it provides a process where the Department of Agriculture can investigate and take regulatory action against the Australian exporter, where appropriate, in a manner that minimises disruption to trade and improves animal welfare outcomes.

The Australian Government and industry are jointly funding projects to improve infrastructure and provide training to support better animal handling and slaughter practices in foreign markets (Department of Agriculture 2014c). Through the Livestock Export Program (LEP), a joint program conducted by Meat & Livestock Australia (MLA) and LiveCorp, producer and exporter levies have been invested in activities along the supply chain to improve animal welfare outcomes and industry efficiencies, capabilities and livestock performance. In 2012–13, training
was delivered to 1100 supply chain participants in markets in the Middle East and North Africa and to 850 participants across South-East Asia.

Since September 2011, more than 4000 people in approved supply chains in Indonesia have participated in LEP training (Australian Livestock Exporters’ Council 2014). The program intends to transfer best practice animal welfare and technical support to offshore markets to improve the welfare of Australian livestock, local animals and livestock imported from other countries.
# Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASEL</td>
<td>Australian Standards for the Export of Livestock</td>
</tr>
<tr>
<td>backgrounding</td>
<td>grouping and acclimatisation of animals before entry into the feedlot or intensive finishing system</td>
</tr>
<tr>
<td><em>Bos indicus</em></td>
<td>breeds of cattle referred to as humped or tropical, including Brahman and Zebu</td>
</tr>
<tr>
<td><em>Bos taurus</em></td>
<td>European and British breeds of cattle, including Hereford and Angus</td>
</tr>
<tr>
<td>branding rate</td>
<td>brandings as a percentage of cows mated</td>
</tr>
<tr>
<td>breeder cattle</td>
<td>calves, cows and bulls primarily for breeding purposes and usually of a higher value than feeder and slaughter cattle</td>
</tr>
<tr>
<td>BTEC</td>
<td>Brucellosis and Tuberculosis Eradication Campaign</td>
</tr>
<tr>
<td>ESCAS</td>
<td>Exporter Supply Chain Assurance System</td>
</tr>
<tr>
<td>feeder cattle</td>
<td>cattle requiring additional feeding to reach a weight suitable for slaughter</td>
</tr>
<tr>
<td>halal slaughter</td>
<td>slaughtering process for animals according to Islamic law</td>
</tr>
<tr>
<td>kosher meat</td>
<td>meat from animals slaughtered according to Jewish law</td>
</tr>
<tr>
<td>mortality rate</td>
<td>deaths as a percentage of average herd size</td>
</tr>
<tr>
<td>Ramadan</td>
<td>The ninth month of the Islamic calendar, when Muslims worldwide fast from dawn until sunset. Fasting during Ramadan is one of the Five Pillars of Islam (fundamental religious duties).</td>
</tr>
<tr>
<td>slaughter cattle</td>
<td>cattle purchased for immediate slaughter; require little or no additional feeding before slaughter</td>
</tr>
<tr>
<td>stocking rate</td>
<td>measured by the population density of livestock per hectare of grazing</td>
</tr>
<tr>
<td>turn-off rate</td>
<td>sales as a percentage of average herd size</td>
</tr>
<tr>
<td>turn-off</td>
<td>sum of animals exported live and slaughter</td>
</tr>
</tbody>
</table>
Appendix A: Statistics

Table A1 Australian live feeder and slaughter cattle exports, number of head

<table>
<thead>
<tr>
<th>Country</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>756 312</td>
<td>517 478</td>
<td>412 057</td>
<td>276 295</td>
<td>448 730</td>
</tr>
<tr>
<td>Israel</td>
<td>36 901</td>
<td>40 276</td>
<td>53 925</td>
<td>46 887</td>
<td>98 096</td>
</tr>
<tr>
<td>Vietnam</td>
<td>0</td>
<td>0</td>
<td>945</td>
<td>2 857</td>
<td>66 953</td>
</tr>
<tr>
<td>Malaysia</td>
<td>12 345</td>
<td>16 344</td>
<td>11 277</td>
<td>32 051</td>
<td>45 815</td>
</tr>
<tr>
<td>Philippines</td>
<td>12 125</td>
<td>16 155</td>
<td>21 568</td>
<td>30 460</td>
<td>19 398</td>
</tr>
<tr>
<td>Japan</td>
<td>15 691</td>
<td>14 699</td>
<td>13 528</td>
<td>10 587</td>
<td>12 899</td>
</tr>
<tr>
<td>Jordan</td>
<td>27 578</td>
<td>19 257</td>
<td>346</td>
<td>0</td>
<td>11 900</td>
</tr>
<tr>
<td>Turkey</td>
<td>168</td>
<td>64 338</td>
<td>53 319</td>
<td>46 342</td>
<td>9 977</td>
</tr>
<tr>
<td>Brunei Darussalam</td>
<td>4 186</td>
<td>3 159</td>
<td>4 813</td>
<td>5 244</td>
<td>7 270</td>
</tr>
<tr>
<td>Mauritius</td>
<td>0</td>
<td>800</td>
<td>3 000</td>
<td>8 825</td>
<td>2 000</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>260</td>
<td>272</td>
<td>150</td>
<td>200</td>
<td>1 200</td>
</tr>
<tr>
<td>Qatar</td>
<td>600</td>
<td>2 561</td>
<td>400</td>
<td>2 323</td>
<td>1 150</td>
</tr>
<tr>
<td>Egypt</td>
<td>0</td>
<td>56 441</td>
<td>14 589</td>
<td>32 800</td>
<td>0</td>
</tr>
<tr>
<td>Libya</td>
<td>0</td>
<td>19 269</td>
<td>0</td>
<td>6 900</td>
<td>0</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>16 446</td>
<td>16 501</td>
<td>3 007</td>
<td>3 550</td>
<td>0</td>
</tr>
<tr>
<td>Kuwait</td>
<td>1 096</td>
<td>598</td>
<td>466</td>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>0</td>
<td>779</td>
<td>7 135</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bahrain</td>
<td>7 413</td>
<td>600</td>
<td>2 424</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>6661</td>
<td>0</td>
<td>5</td>
<td>1401</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>891 133</strong></td>
<td><strong>796 188</strong></td>
<td><strong>602 949</strong></td>
<td><strong>505 386</strong></td>
<td><strong>726 789</strong></td>
</tr>
</tbody>
</table>

Note: Includes a small number of buffalo.
Source: ABS 2014c
Table A2 Australian live feeder and slaughter cattle exports, $million

<table>
<thead>
<tr>
<th>Country</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>466.43</td>
<td>316.52</td>
<td>270.71</td>
<td>183.46</td>
<td>296.87</td>
</tr>
<tr>
<td>Israel</td>
<td>20.68</td>
<td>25.00</td>
<td>40.12</td>
<td>34.72</td>
<td>72.57</td>
</tr>
<tr>
<td>Vietnam</td>
<td>0</td>
<td>0</td>
<td>0.63</td>
<td>1.81</td>
<td>54.81</td>
</tr>
<tr>
<td>Malaysia</td>
<td>8.31</td>
<td>10.88</td>
<td>8.01</td>
<td>21.96</td>
<td>26.75</td>
</tr>
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<td>Philippines</td>
<td>6.86</td>
<td>8.68</td>
<td>13.88</td>
<td>18.61</td>
<td>12.09</td>
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<td>Japan</td>
<td>13.28</td>
<td>17.21</td>
<td>17.91</td>
<td>14.53</td>
<td>18.16</td>
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<td>Jordan</td>
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<td>10.15</td>
<td>0.24</td>
<td>0</td>
<td>7.15</td>
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<td>Turkey</td>
<td>0.17</td>
<td>53.43</td>
<td>40.53</td>
<td>32.30</td>
<td>5.89</td>
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<tr>
<td>Brunei Darussalam</td>
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<td>2.95</td>
<td>4.21</td>
<td>4.48</td>
<td>5.89</td>
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<tr>
<td>Mauritius</td>
<td>0</td>
<td>0.57</td>
<td>2.74</td>
<td>7.39</td>
<td>1.70</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>0.69</td>
<td>0.62</td>
<td>0.15</td>
<td>0.17</td>
<td>0.83</td>
</tr>
<tr>
<td>Qatar</td>
<td>0.61</td>
<td>2.38</td>
<td>0.37</td>
<td>1.96</td>
<td>0.83</td>
</tr>
<tr>
<td>Egypt</td>
<td>0</td>
<td>48.20</td>
<td>12.27</td>
<td>24.47</td>
<td>0</td>
</tr>
<tr>
<td>Libya</td>
<td>0</td>
<td>10.19</td>
<td>0</td>
<td>4.21</td>
<td>0</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>9.78</td>
<td>13.02</td>
<td>2.98</td>
<td>2.84</td>
<td>0</td>
</tr>
<tr>
<td>Kuwait</td>
<td>1.43</td>
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<td>0.64</td>
<td>0.05</td>
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</tr>
<tr>
<td>Russian Federation</td>
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<td>0.86</td>
<td>5.58</td>
<td>0</td>
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<tr>
<td>Bahrain</td>
<td>4.91</td>
<td>0.53</td>
<td>2.14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0.01</td>
<td>9.49</td>
<td>0.00</td>
<td>0.01</td>
<td>1.45</td>
</tr>
<tr>
<td>Total</td>
<td>551.50</td>
<td>531.37</td>
<td>423.12</td>
<td>352.97</td>
<td>504.97</td>
</tr>
</tbody>
</table>

Note: Includes a small number of buffalo.
Source: ABS 2014c

Table A3 Australian live feeder and slaughter cattle exports from northern ports in 2013, number of head

<table>
<thead>
<tr>
<th>Country</th>
<th>Broome</th>
<th>Darwin</th>
<th>Karumba</th>
<th>Port Headland</th>
<th>Townsville</th>
<th>Wyndham</th>
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Source: ABS 2014c
### Table A4 Australian live feeder and slaughter cattle exports from northern ports in 2013, $million

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Source: ABS 2014c

### Table A5 Australian live feeder and slaughter cattle exports from southern ports in 2013, number of head

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<th>Portland</th>
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<th>Total</th>
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Source: ABS 2014c
Table A6 Australian live feeder and slaughter cattle exports from southern ports in 2013, $million

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<th>Portland</th>
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Source: ABS 2014c

Table A7 Australian live sheep exports, number of head

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<th>2011</th>
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<th>2013</th>
</tr>
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<td>69 000</td>
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Note: Contains a small number of sheep exported for breeding purposes.
Source: ABS 2014c
### Table A8 Value of Australian live sheep exports, $million

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Note: Contains a small number of sheep exported for breeding purposes. 
Source: ABS 2014c

### Table A9 Australian live goat exports, number of head

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<th>2013</th>
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Source: ABS 2014c
### Table A10 Value of Australian live goat exports, $’000

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<th>2013</th>
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<tr>
<td>Total</td>
<td>11 491</td>
<td>10 346</td>
<td>8 408</td>
<td>8 114</td>
<td>8 373</td>
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</table>

Source: ABS 2014c

### Table A11 Australian live sheep export by port of loading, number of head

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<th>Port</th>
<th>2009</th>
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<th>2011</th>
<th>2012</th>
<th>2013</th>
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<td>Fremantle</td>
<td>2 558 183</td>
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<td>1 752 125</td>
<td>1 619 681</td>
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<td>480 288</td>
<td>126 494</td>
<td>263 927</td>
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<td>114 540</td>
<td>268 148</td>
<td>370 770</td>
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<td>Perth</td>
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<td>19 346</td>
<td>6 847</td>
<td>14 682</td>
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<td>824</td>
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Source: ABS 2014c
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