



Value analysis of the Australian
live cattle trade - key highlights
November 2018



This report was commissioned by LiveCorp and Meat & Livestock Australia

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Data sources: ABS, ABARES, MLA, DAWR, LiveCorp, World Bank, FAO, USDA, WITS, Mecardo

Images: supplied by Northern Territory Cattlemen's Association (NTCA), NTCA members, Indigenous Land Corporation and Mecardo

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Project Scope

Mecardo has been engaged by LiveCorp and Meat & Livestock Australia to undertake an analysis of the Australian live cattle trade, which included the production of a series of [webinars](#) and a research paper. The objective of this project was to determine the value of the industry to regional zones across the country. The scope of this research includes:

- full-time equivalent employment numbers.
- the structure of the value chain across zones.
- level of reliance businesses involved in the live export trade have with regard to the proportion of their revenues they earn from the live cattle trade.
- reasons why our offshore trade partners have an interest to continue importing live cattle.

WEBINAR SERIES:

1. Australian live cattle export-industry overview
2. Regional hot spots and value chain
3. NT case study
4. Destinations and Indonesian case study

Methodology

QUANTITATIVE ASSESSMENT

Two modelling approaches were taken to estimate on-farm and total employment numbers relating to the live cattle export trade.

Survey modelling: A measure of direct full-time employment has been calculated (on-farm employment related to the live cattle trade) based on the annual ABARES AAGIS annual farm survey for thirty-two pastoral zones. The results of qualitative surveying undertaken by Mecardo have been used to gross up the employment figures at the regionalised level in order to estimate the total employment figures within each of the thirty-two pastoral zones.

Regression modelling: Three levels of modelling were performed, using linear regression analysis techniques on ABS and ABARES survey data from 1978 to 2017 across thirty-two pastoral zones. Linear regression

analysis is a form of statistics widely used in modelling and forecasting. It is an efficient way to describe the relationship that exists between sets of data. In this instance models were estimated that looked at how on farm employment levels on beef cattle properties were influenced by factors such as live export sales volumes, cattle herd numbers, domestic cattle sales volumes, and regional employment levels in competing industries such as services, mining, and manufacturing.

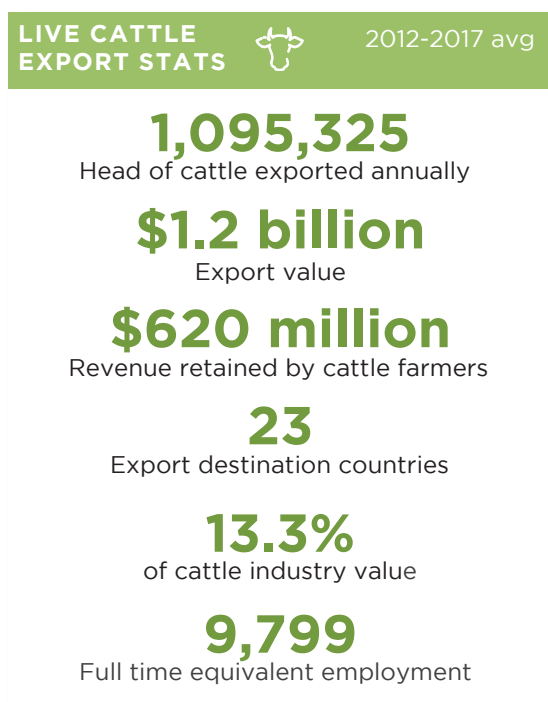
QUALITATIVE ASSESSMENT

In order to capture current information of the value and associated cost of live cattle exports to Australia at a national and regional business level, two surveys were designed by Mecardo and completed by 161 industry participants.

Desktop research and analysis using public data and previous literature was also key to this research.



Australia's cattle markets

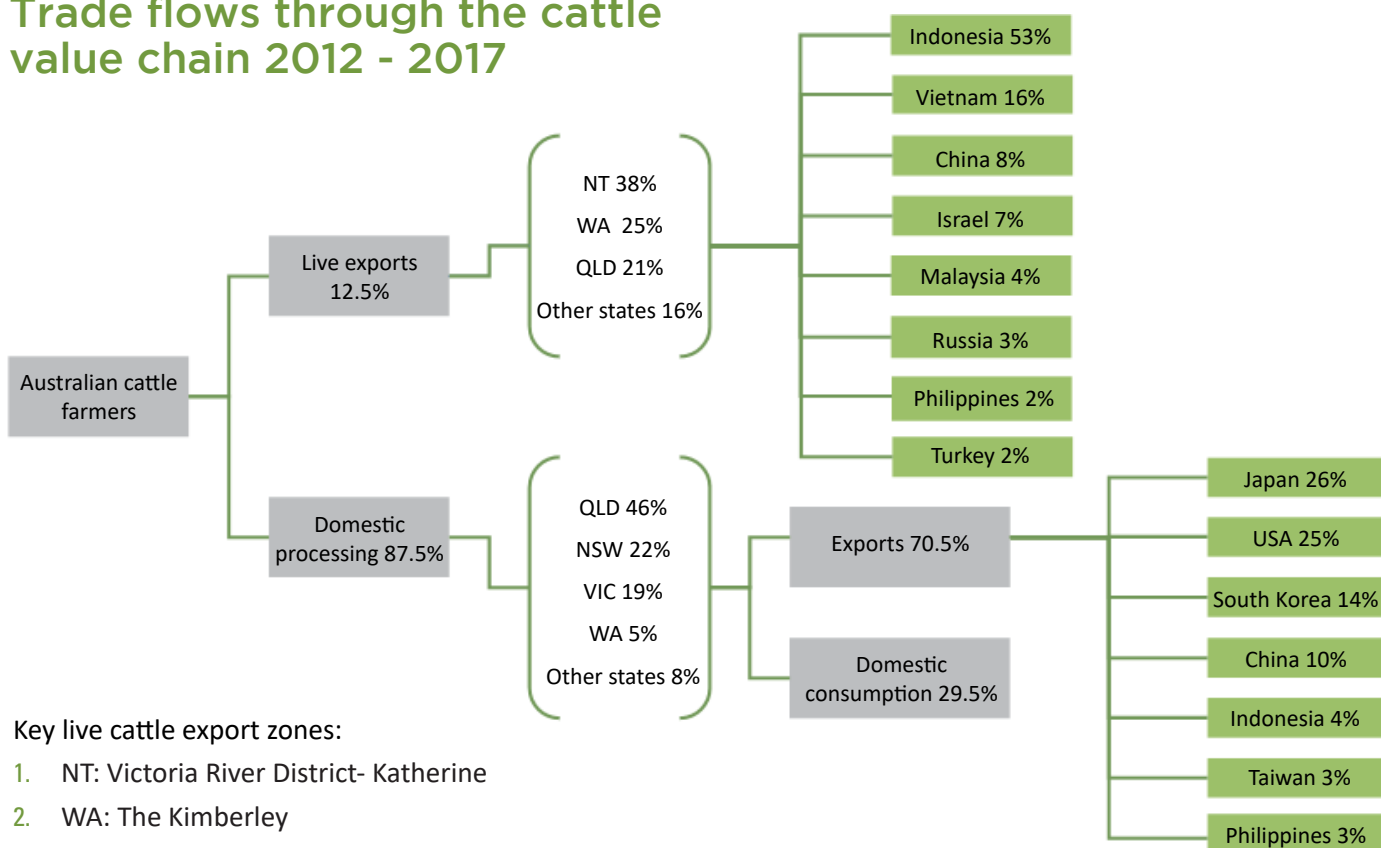


The significance of the live cattle export trade to the Northern Territory cannot be understated with 38% of the Australia's live export cattle exiting the country via the port of Darwin, at an average of 400,000 head per annum over the last five years. Western Australian and Queensland ports also contribute significantly to the trade volumes at 25% and 21% , respectively.

In terms of beef processing, 46% of beef is processed in Queensland. In contrast, the lack of domestic processing opportunities for Northern Territory and Western Australian beef product is evident. Western Australian beef processing makes up 5% of total Australian processing, while the minimal processing levels in the Northern Territory means that the data there is no longer being collected.

Limited access to domestic processing facilities and feedlots in the Northern Territory and in Western Australia's northern regions, combined with long road transport distances to southeastern markets/facilities and biosecurity factors underpin the live cattle trade as a crucial element of the Northern cattle industry.

Trade flows through the cattle value chain 2012 - 2017



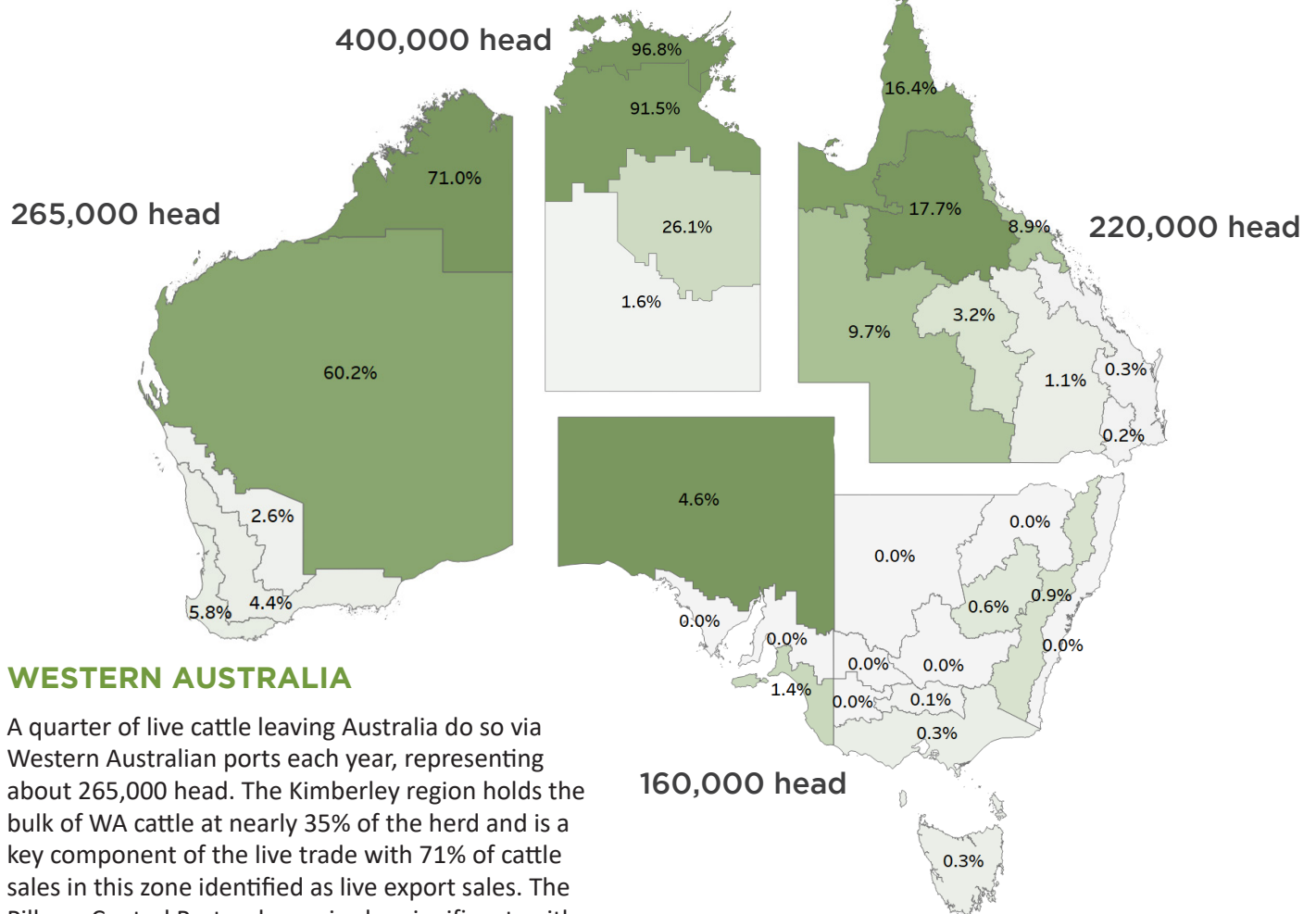
The inherent value of the live cattle export industry to the northern regions of Western Australia and the Northern Territory is highlighted in the following regional representations. They show the average percentage of cattle sold to live export as a proportion of total cattle sales within each zone over the 2012-2017 period. The colour shades identify the key source zones for live cattle within each state/region.

NORTHERN TERRITORY

38% of Australia's live cattle exit the country through the port of Darwin at approximately 400,000 head per annum. The Top End zone, encompassing Darwin and the NT Gulf, has the highest proportion of live cattle sales as a percentage of total sales at 96.8%. However, this region holds just 3% of the NT cattle herd. The Katherine - Victoria River District has the bulk of the cattle, at 48% of the herd, and 91.5% of sales in this zone go to the live trade.

QUEENSLAND

Live cattle leaving the port of Townsville or Brisbane represent 21% of the total annual volume exported each season at around 220,000 head. In QLD, the Central North and Cape York/Gulf zone are the live cattle export hot spots with 17.7% and 16.4% of total cattle sales within these regions earmarked for the live trade, respectively. The Central North is particularly important, as it has the second highest herd concentration level in QLD, behind the Darling Downs.



WESTERN AUSTRALIA

A quarter of live cattle leaving Australia do so via Western Australian ports each year, representing about 265,000 head. The Kimberley region holds the bulk of WA cattle at nearly 35% of the herd and is a key component of the live trade with 71% of cattle sales in this zone identified as live export sales. The Pilbara-Central Pastoral zone is also significant, with 29% of the herd and about 60% of sales reported as live export transactions.

VICTORIA, NEW SOUTH WALES, SOUTH AUSTRALIA & TASMANIA

Ports within the south eastern states send approximately 160,000 head of cattle offshore each season, consisting of about 16% of the trade annually. The bulk of cattle sent from the southern region consists of breeding stock. Dairy farmers within these zones are particularly reliant on the live export trade as an additional avenue to destock during times of hardship.

The high proportion of cattle entering the live export trade from Australia's northern region demonstrates that in this region, the business model is centred on a high volume, low margin trade based on a ¢/kg measure. In contrast, the southern trade, which is dominated by breeding stock, has a business model centred on lower volumes and higher margin trade based on a \$/head measure.

NB. Live cattle sales proportions shown within zones do not include dairy farms, however state volumes for annual head of cattle exiting ports within that state include dairy cattle figures.

Live export and domestic processing

The live cattle export volumes and values chart illustrates the growth in the live cattle trade over the last three decades. Live cattle export values demonstrate a reasonably close relationship to trade volumes, with the directional move in values corresponding to changes in the volume of cattle exported live. In recent years, live cattle export values have been underpinned by higher domestic cattle prices, despite the decline in trade volumes of live export.

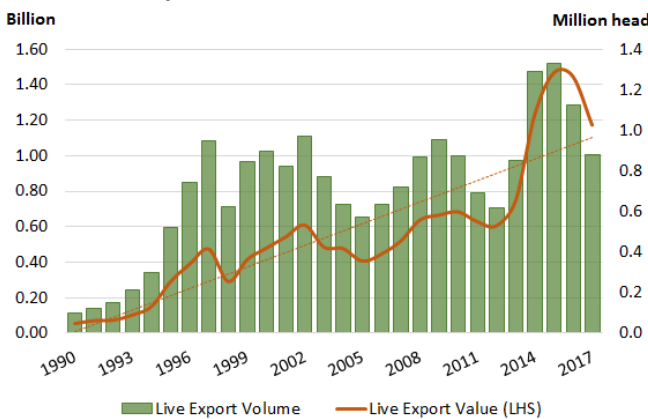
During the high level of cattle turnoff experienced in Australia between 2013 to 2015 due to severe drought conditions across much of cattle rearing country, the Australian herd went through a significant liquidation phase. Higher than normal domestic slaughter levels and depressed cattle prices saw Australian cattle farmers move towards the live cattle trade as an outlet

for turnoff. This encouraged a lift in annual live cattle volumes during the 2014 and 2015 season to reach a peak above 1.2 million head.

The chart below highlights the historic trend in annual domestic cattle slaughter levels and includes the ratio of live export volumes to annual slaughter levels for the last three decades. As a proportion of slaughter, the live export ratio has spent nearly all the 1995-2013 period between 8-12%, averaging 10% across the period.

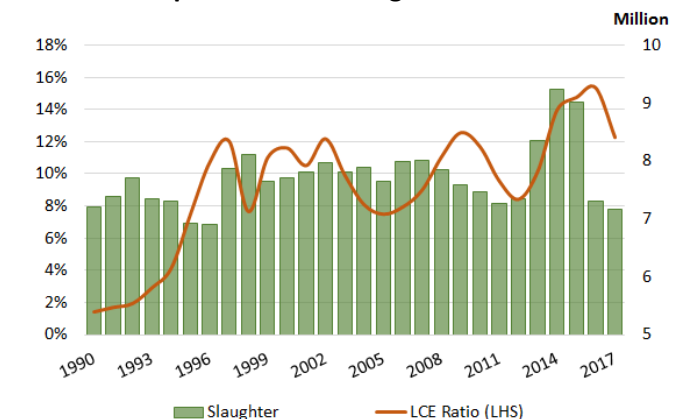
Throughout the high turnoff of cattle experienced during the 2014/15 seasons the live cattle export ratio lifted to 15.4%.

Live cattle export volumes and values



Source: MLA, Livecorp, ABS, DAWR

Live cattle exports ratio to slaughter



Source: MLA, Livecorp, ABS, DAWR

During times of extreme drought and elevated cattle slaughter, the live cattle trade allows Australian cattle farmers an alternative avenue for cattle turnoff, alleviating some of the supply pressure and protecting against severe price decline as Australian processing capacity becomes saturated.

Significance of the cattle live export trade to regional employment

Total employment consists of the direct on-farm employment plus the estimated proportion of full-time jobs created indirectly (off-farm) with businesses engaged in live cattle trade. Indirect employment includes transport operators, veterinarians, stock agents, finance and legal staff, fodder suppliers, port workers, administrative and exporter operator staff etc.

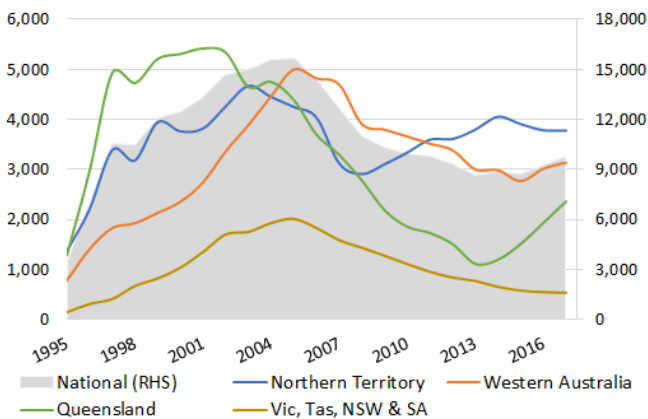
During the 2012 to 2017 period, the level of on-farm employment was estimated to average 2,029 workers (including farm owners) and a total national workforce of 9,799¹ people. The chart below displays the historical trend in total employment estimates on a national basis and provides an outline of the state-based total employment proportions relating to the live cattle trade since 1995.

2,029 on farm workers **9,799** total employment

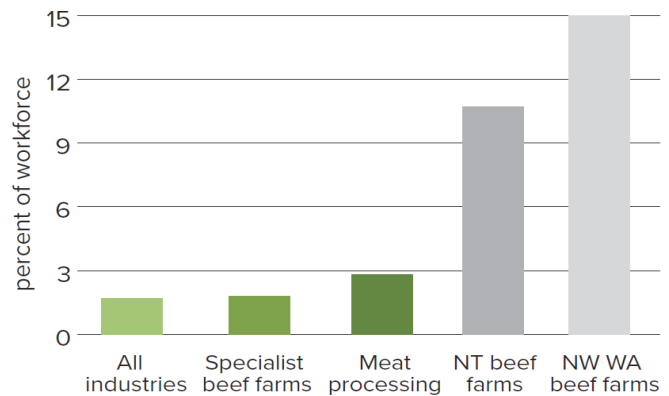
The value of the live export trade to employment is heightened due to the regional distribution of the workforce. Many of the live export related employment opportunities are in remote centres of Australia, often where there is little transferability of jobs and skills to other industries.

The trade also supports employment of Indigenous Australians. For specialist beef farms in the NT, indigenous employment accounts for 10.7% of the workforce, while in north-west WA it is 15%.

Total live cattle related employment estimates (national and by states)



Indigenous employment in the beef/processing industry (2016)



Source: MLA, Livecorp, ABS, DAWR, ABARES

Source: ABS 2016 census, MLA

1. A multiplier of 4.83 was calculated from service industry employment modeling undertaken by Strategis Partners and was confirmed by the findings of the qualitative survey undertaken by Mecardo. High levels of labour productivity and a low staff to cattle density ratio on farm, particularly in the northern regions, contributes to a higher multiplier than that identified in the [RMAC/MLA State of the Industry 2018 report](#).



WHO

is part of the
live cattle
export value
chain?



Images: NTCA members



Farmers, livestock agents, fodder suppliers, transport operators, consultants, quarantine staff, veterinarians, port operators, rural merchandise, stockmen, rural property agents, exporters, musterers and rural finance services.

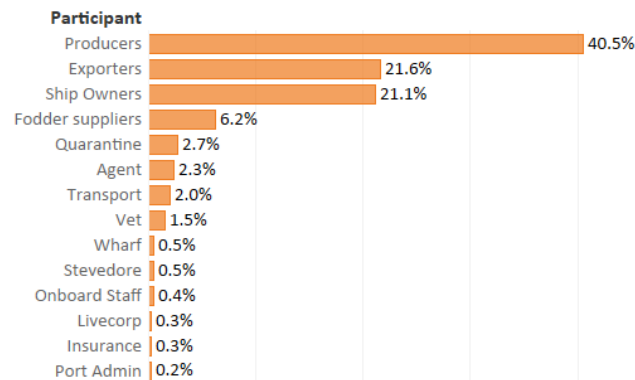
LIVE CATTLE VALUE CHAIN

Indicative value chains for the live cattle export industry in Australia to arrival at port destination were analysed to understand and quantify where the value of revenue is retained across the value chain. The estimated costs of various components of the live export value chain have been weighted and calculated as a proportion of total value chain costs on a per head basis for the Northern Territory, Western Australia, Queensland, southeastern states beef and dairy industries.

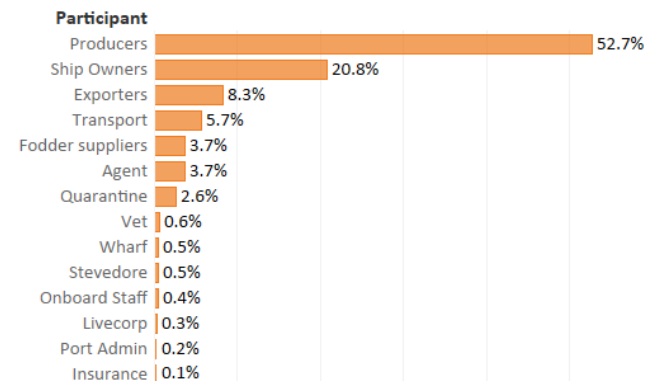
The value chain analysis highlights that the bulk of the live cattle revenues are retained by the producer, ranging between 40-57%. This equates to an estimated \$620 million of revenue retained by Australian cattle farmers. Shipping operators and export companies take the second and third largest share, 22% and 7% respectively.

Other value chain participants, such as livestock agents, veterinarians, port workers and transport operators take a much smaller slice of the value chain. However, for some of these participants located in more remote areas their relatively small piece of the value chain can still represent a significant proportion of their overall annual revenue.

New South Wales, Victoria, South Australia & Tasmania beef live export value chain participants by proportion of revenue



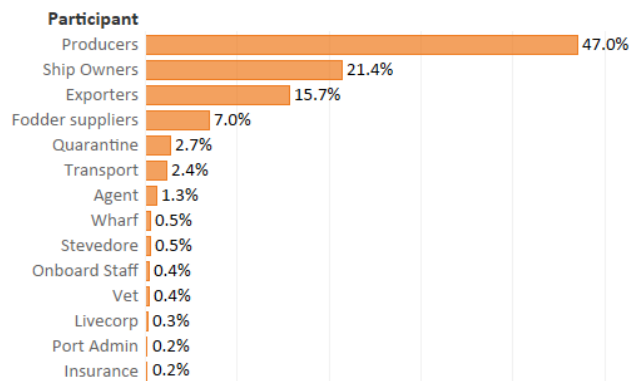
New South Wales, Victoria, South Australia & Tasmania dairy live export value chain participants by proportion of revenue



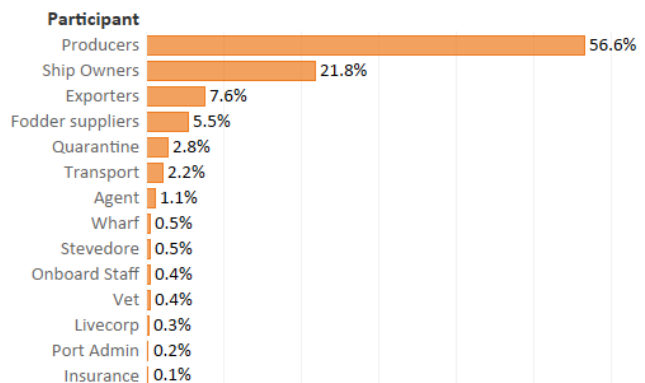
40-57%

of value chain revenue retained by Australian cattle farmers

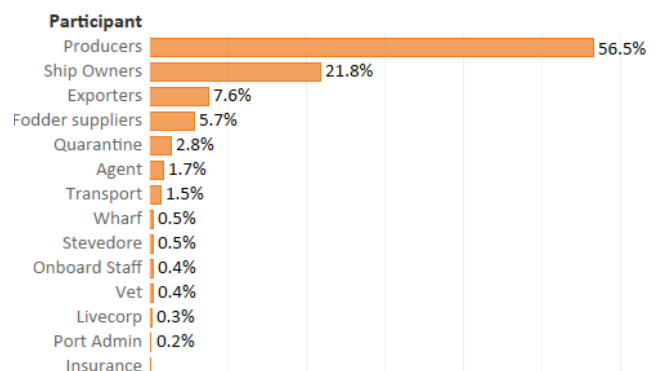
Western Australia live export value chain participants by proportion of revenue



Northern Territory live export value chain participants by proportion of revenue



Queensland live export value chain participants by proportion of revenue



How much do participants rely on the trade?

Results from the Mecardo qualitative survey¹ show that Northern Territory and Western Australian participants in the live export value chain derive a higher proportion of their business revenue from the live cattle export industry compared to participants from the remaining states.

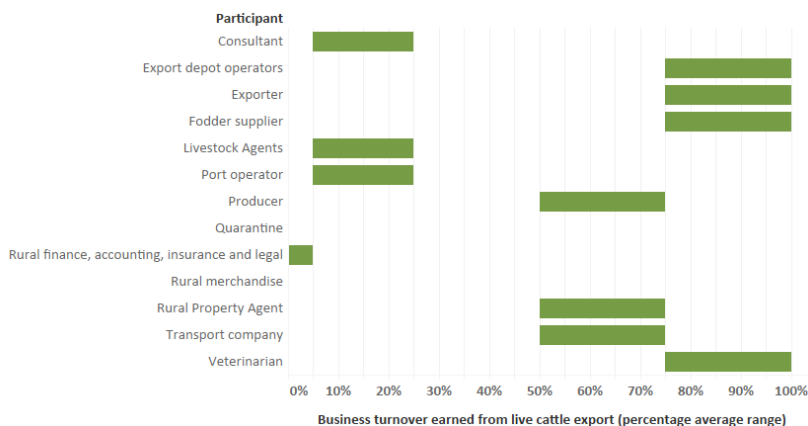
The findings are in line with results of industry consultation in the Clarke, Morison and Yates report from 2007, entitled 'Assessing the Value of the Livestock Export Industry to Regional Australia'. This report outlined the proportion of annual turnover earned from live cattle export-related activities for value chain participants/businesses involved in the supply chain for Western Australian and southern supply chains.

Participants in the northern regions, that make up a relatively small proportion of the value chain, report that a high proportion of their annual revenue is reliant upon the live cattle export trade. This includes fodder suppliers, transport operators and veterinarians.

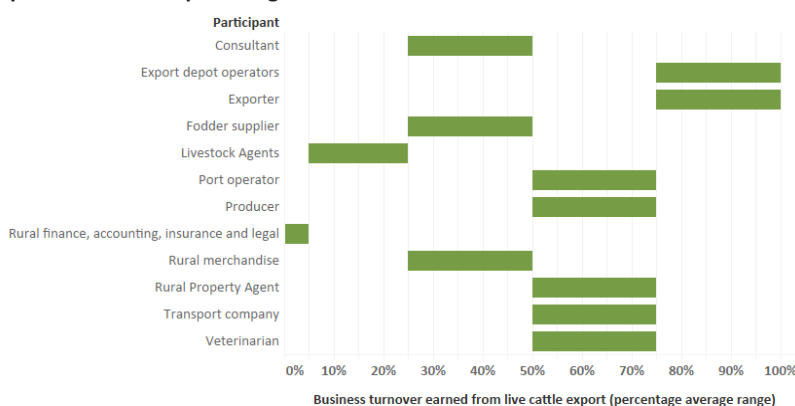
1. Survey sample size of 161



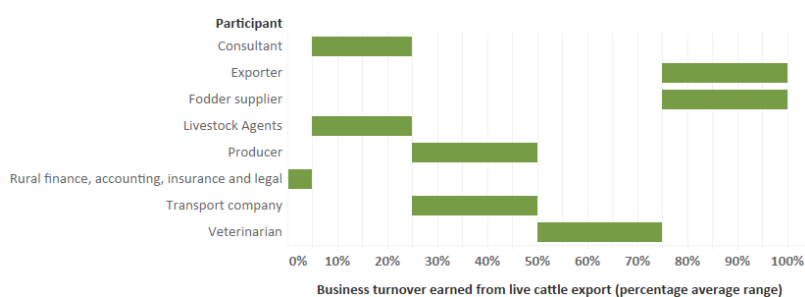
Northern Territory live cattle export value chain participants reliance on live cattle export indicated as a percentage of business turnover.



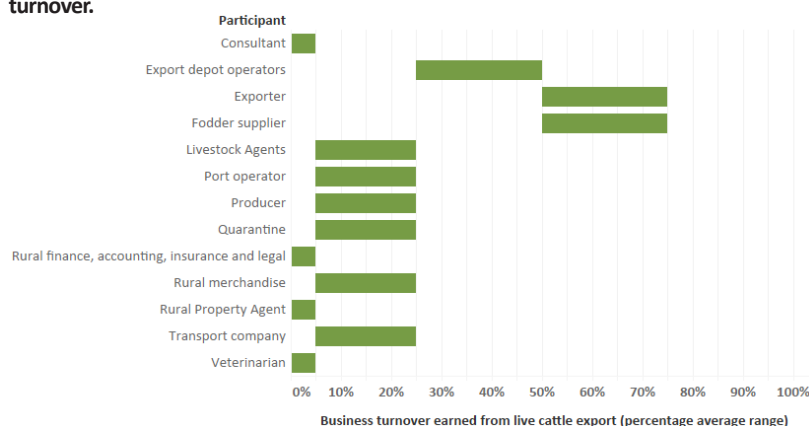
Western Australian live cattle export value chain participants reliance on live cattle export indicated as a percentage of business turnover.



Queensland live cattle export value chain participants reliance on live cattle export indicated as a percentage of business turnover.



New South Wales, Victoria, South Australia and Tasmania live cattle export value chain participants reliance on live cattle export indicated as a percentage of business turnover.





WHY do
Australia's export
market destinations
want live cattle?

Australia's key live export market destinations

Five key live cattle import destination countries were selected across the Asian and Middle Eastern/ North African zone for case studies based on average values of cattle exported from Australia over the last five years. The countries that form the basis of the case study are:

INDONESIA

Australia's most important live cattle trade destination, holding the top spot in terms of market share of both volume and value of live cattle shipped. Live cattle import data for Indonesia shows that over the 2012-2017 period Australia was the sole supplier. The importance of the trade relationship that Australia has with Indonesia cannot be understated and it is underpinned by the reliance and trust that Indonesia displays in sourcing its live cattle exclusively from Australia. Additionally, Indonesia is the biggest importer of Australian grain and the by-product generated by grain processing is used to sustain the Indonesian livestock industry.

VIETNAM

Australia's second top destination in terms of volume of head and third top spot in terms of the value of trade. Analysis of live cattle trade data for the 2012-2017 period shows that Vietnam import most of their cattle from Australia at an average of 67.9% of market share for the period. Thailand holds second place at 20.9% and New Zealand in third spot at 12.4%. The fourth, and final, source for imported cattle into Vietnam was Laos PDR, which provided 1.8% of the market share. Anecdotal evidence suggests informal beef trade also occurs between Vietnam and neighbouring countries.

CHINA

Australia's third top destination in terms of volume and second top spot in terms of the value of trade. Analysis of Chinese imports of live cattle for the 2012-2017 period shows that Australia is the top source country, averaging 58.7% of the value of Chinese live cattle imports, most of which are breeding stock. During the 2012-2017 period, China has only imported live cattle from four nations – Australia, New Zealand, Chile and Uruguay.

ISRAEL

Australia's fourth top destination in terms of volume of head and fifth top spot in terms of the value of trade. Israel imports live cattle from a wide range of countries. Analysis of the live cattle trade data for the 2012-2017 period shows that Australia has averaged second-place position at 23.9% of the flow (based off a value of trade measure) behind Jordan at 34.2%.

TURKEY

Australia's eighth top destination in terms of volume of head and seventh top spot in terms of the value of trade. Turkey was chosen instead of the Russian Federation as recent years have seen Turkey re-emerge as a consumer of Australian live cattle while the Russian flows have been in a declining trend. Live cattle import trade statistics for Turkey from 2012 to 2017 shows that cattle are sourced from a wide range of locations. However, the main suppliers are countries from South America and Europe. Australian sourced live cattle to Turkey have shown an increase in recent years and based on the data from 2012-2017, Australia sits in 10th spot at 4.6 % of the market share of live cattle imported by Turkey.

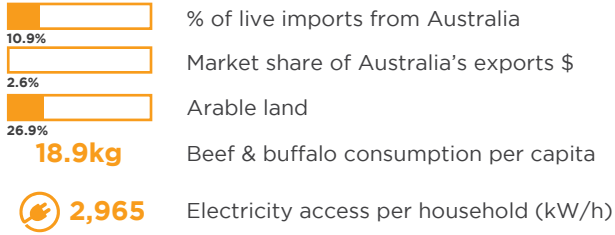
Top five Australian live cattle export destination by value (2012-2017 average)

Indonesia 42.3%	China 15.7%	Vietnam 14.5%
	Russian Fed 6.7%	Israel 6.0%

COMPETITION: In recent years, South American and European participants in the live cattle export industry have identified the importance of expanding market access in the South East Asian and Middle Eastern regions, particularly with the growth anticipated for countries within these zones. Notably, Brazil and Romania have been actively pursuing an increased presence within Asia and the Middle East, respectively.

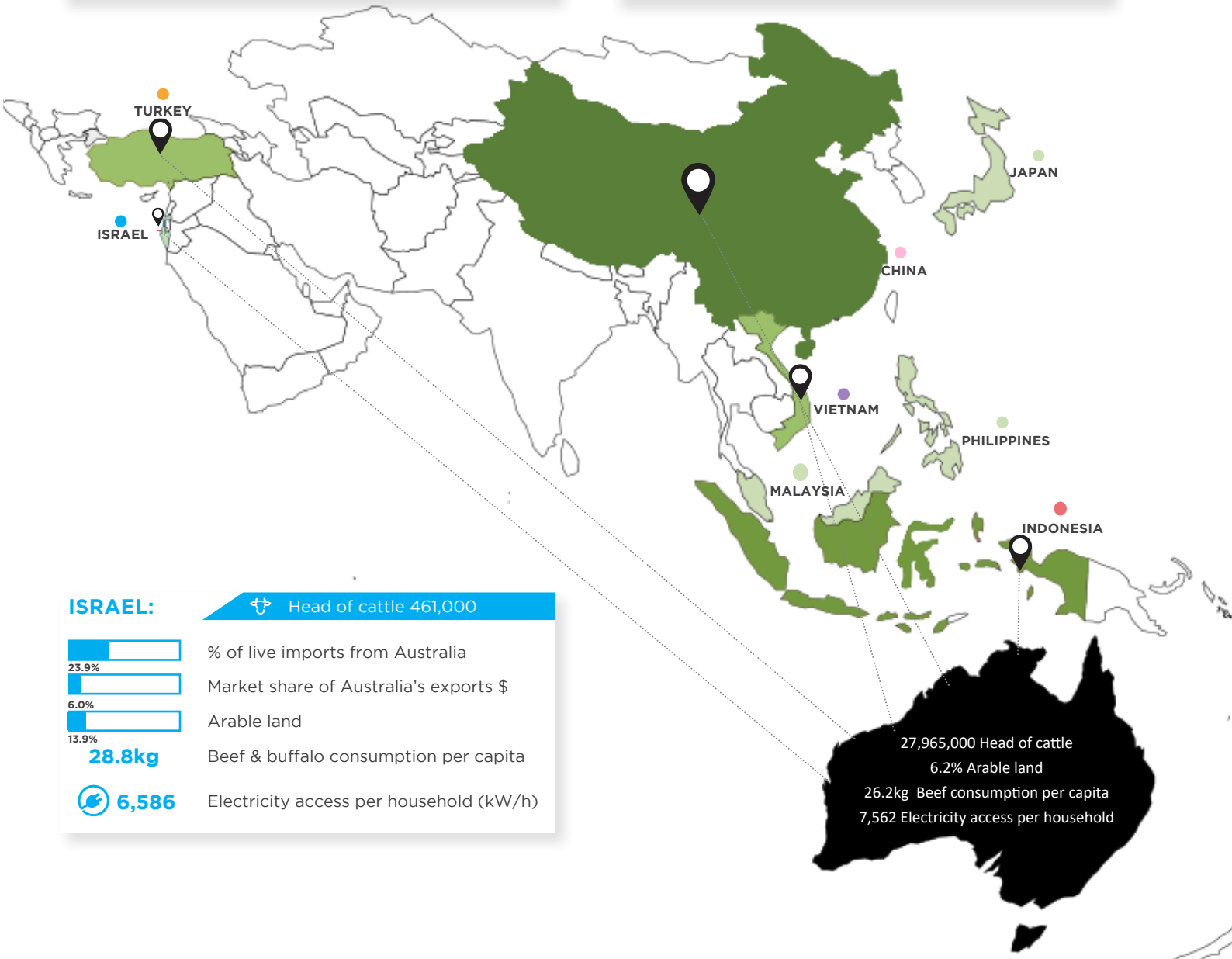
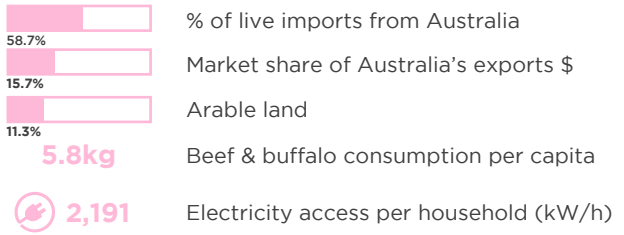
TURKEY:

📍 Head of cattle 14,500,000



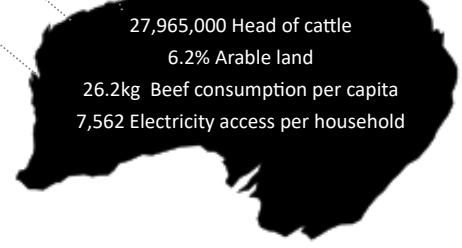
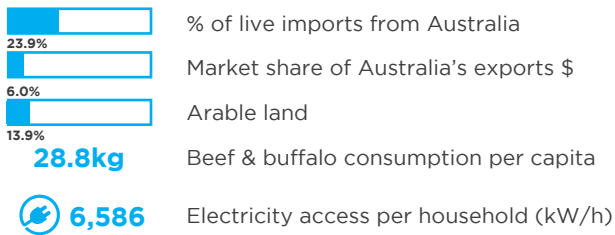
CHINA:

📍 Head of cattle 96,850,000



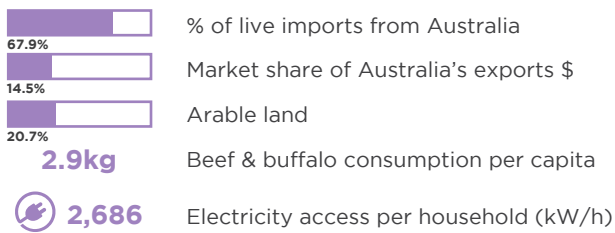
ISRAEL:

📍 Head of cattle 461,000



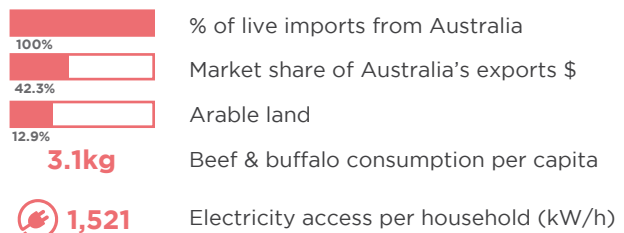
VIETNAM:

📍 Head of cattle 5,654,901



INDONESIA:

📍 Head of cattle 16,599,247



NB. Threshold electricity access per household 1,800kW/h for refrigeration.

The value of live cattle imports to Australia's trading partners

Capacity and supply chain constraints of beef trade

SELF SUFFICIENCY

Of the five export destinations, Vietnam is the only country that produces more beef than they consume. All other destinations demonstrate an inability to domestically produce the volume of beef consumed. In 2017, China processed around 90% of their consumption requirements. However, due to their very large population levels, this shortfall equated to a staggering 0.8 million tonne of beef product for the 2017 season.

As population and wealth continues to expand, it is unlikely that countries such as China, Vietnam and Indonesia will be able to increase their local production to fulfill the quantities of beef demanded. These countries will rely on imports of beef products or live cattle to fill this gap.

COLD STORE ACCESS

To end live cattle imports and rely solely on chilled/frozen imported product, a country will need to demonstrate suitable cold store capacity to enable

all the population access to the boxed beef product. Households in three of the five importing nations have low average annual electricity usage and when measured against household numbers this suggests low access to appliances like fridges and freezers across the entire population, particularly in rural areas. At-risk countries include Indonesia and Vietnam, while China is also at-risk but to a lesser extent.

Indicative electricity use per household models developed by the UN suggests that 1,800kW/h per annum is the threshold for households to have access to refrigeration. Indonesia is unable to provide this level of electricity access to its entire population, while China, Vietnam and Turkey have only reached the threshold within the last decade.

The live cattle export trade is an important component of the supply chain in these nations, facilitating accessibility of beef products to segments of the population with none, or limited, cold storage capacity and a reliance on wet markets.

Cultural factors

RELIGION AND TRADITION

In Middle Eastern markets, such as Israel, and in predominantly Islamic countries, like Indonesia and Turkey, religious and cultural factors drive the demand for live cattle over boxed beef. In these countries, many consumers value a 'fresh' product, defined as cattle slaughtered the day prior to consumption. Religion is a significant driver of demand for live exported cattle and determines the supply chain practices.

Although the Australian supply chain can meet the guidelines to ensure that the product is certified for religious requirements, many countries have a preference to slaughter and process animals locally under trusted religious officials and known suppliers. Additionally, some religious requirements, particularly around key annual festivals, dictate the slaughter of live animals.

COOKING STYLE

In many countries that import live cattle, traditional cooking styles dictate consumer preference for the type of meat they purchase.

The predominantly Bos Indicus breeds of cattle, which are well suited to Australia's northern region, are particularly sought after by South East Asian consumers due to the performance of this meat in many traditional dishes.

Meat that is sourced fresh at wet markets, which is lean and durable during the cooking process, is particularly favoured by the South East Asian palate.

Socio-economic factors

REGIONAL EMPLOYMENT

Australia's export market destinations derive additional economic benefit from employment in local feedlots, meat works and associated industries such as transport when they elect to import live cattle either as feeders or direct to slaughter.

CAPACITY DEVELOPMENT

Importing and exporting industry participants, as well as the Australian Government, have invested significantly in improving training and facilities in importing countries to meet requirements of the Livestock Exporter Supply Chain Assurance System (ESCAS)¹. Skills transfer and training initiatives in importing countries have led to a much greater understanding of the importance of animal welfare and application of good practice animal handling and slaughter techniques. These skills are transferred along the wider livestock supply chain, developing individual participants and adding value to businesses through increased efficiencies and worker safety.

LOW COST MEAT SOURCE

There is a cost advantage to import live cattle, fatten and slaughter in-country compared to importing processed beef products. Lower operating costs of meat works in many of Australia's cattle export

destinations drives this preference. Australia has one of the highest cattle processing costs in the world.

Brazil, one of Australia's biggest overseas competitors (in terms of boxed beef into the lower value markets), processes one beast for \$172, while the United States (Australia's main competitor into the high value north Asian markets) costs \$290, Indonesia costs between \$20 and \$100, and Australia costs is \$360 per beast².

Imported animals keeps local prices of meat products from inflating and enables a nation to offer lower priced beef protein to the population. The higher cost of importing boxed or chilled beef would be passed onto consumers and likely make beef products less affordable for the lower income population.

CO-PRODUCTS




Countries that import live cattle want access to the entire beast so that they can take advantage of the value of the co-products during the processing phase. Having access to the other component parts of the animal, such as the hide, can sustain other associated industries (e.g. tannery and leatherworks). These industries provide additional employment opportunity and add to the nation's gross domestic product and level of wealth.

1. Australian Government (2015) ESCAS review <http://www.agriculture.gov.au/export/controlled-goods/live-animals/livestock/information-exporters-industry/escas/escas-report>
2. AMPC (2018) Analysis of regulatory and related costs in red meat processing <https://www.ampc.com.au/2018/10/Analysis-of-Regulatory-and-Related-Costs-in-Red-Meat-Processing>



Australian and Indonesian live cattle trade partnership - a win/win for all concerned

BENEFITS OF EXPORT TO AUSTRALIA

<p>✓</p> <p>LOCAL EMPLOYMENT</p> <p></p> <p>Farmers & Feedlots Stock Workers Drivers & Pilots Veterinarians Rural Businesses</p>	<p>✓</p> <p>REGIONAL DEVELOPMENT</p> <p>Investment in regional areas and communities</p> <p></p>	<p>✓</p> <p>BIOSECURITY STATUS</p> <p>Recognition of Australia's animal health status</p> <p></p>
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BENEFITS OF IMPORTING AUSTRALIAN LIVE CATTLE TO INDONESIA

<p>✓</p> <p>TAXES & FEES</p> <p>Customs Fees Import Duties Excise Charges</p> <p></p>	<p>✓</p> <p>LIVEWEIGHT GAINS</p> <p>Average animal weight gain of 200kg per head</p> <p></p>	<p>✓</p> <p>EDUCATION & TRAINING</p> <p>Livestock handling Animal Welfare Animal Husbandry Knife Sharpening</p> <p></p>
<p>✓</p> <p>LOCAL EMPLOYMENT</p> <p>75 employees per 1000 head of cattle</p> <p></p> <p>Veterinarians & Finance Packers & Processors Dockworkers & Drivers Farmers & Feedlots</p>	<p>✓</p> <p>BY-PRODUCT UTILISATION</p> <p>Using corn, tapioca, coconut and pineapple waste for cattle feed utilises otherwise wasted resources and supports local farmers</p> <p></p>	<p>✓</p> <p>BIO-SECURITY PROTECTION</p> <p>Australia and Indonesia are free from Foot and Mouth Disease (FMD). Protects breeding herds from possible exotic disease outbreak.</p> <p></p>



About Mecardo

Mecardo (A Ruralco Business) is an independent, specialist agricultural strategy and marketing advisory business.

Mecardo is recognised throughout the Australian rural sector for innovative thinking, data driven analysis and consultation and the capacity to design “disruptive technology and thinking” that challenges the status quo.

Supply chain management and collaborative marketing and implementation are areas of experience gained over a long time of analysing and understanding markets and applying this knowledge to the farming and agribusiness sector.

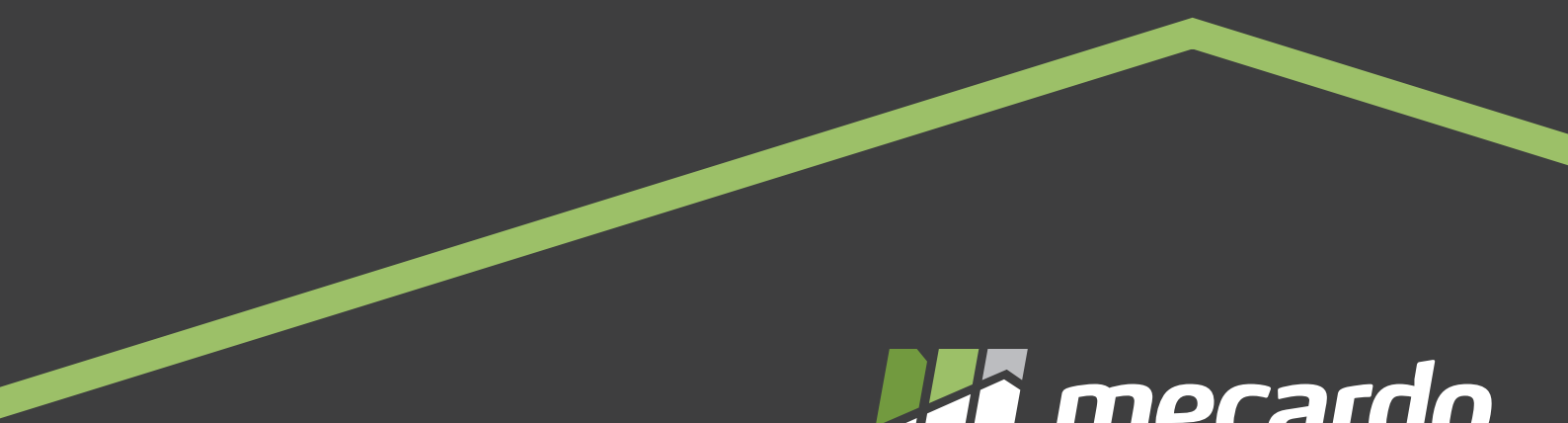
We provide bespoke market analysis and reporting to a range of clients including farmers, commodity consumers, banks, government, rural industry bodies and investment firms. We utilise data in conjunction with our own experience to create meaningful analysis, which is digestible by all stakeholders.

Our qualities and initiatives result in continued demand for our services in the Agricultural sector.

For enquiries contact:

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 ***mecardo***