11 July 2018

FEASIBILITY ASSESSMENT OF A BEEF PROCESSING BONDED ZONE IN INDONESIA

FINAL REPORT

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GLOSSARY

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
AUD	Australian dollar
BIFZA	Batam Indonesia Free Zone Authority
BKPM	Badan Koordinasi Penanaman Modal - Indonesia's Investment Coordinating Board
BPBZ	Beef Processing Bonded Zone
BSA	Bonded Storage Area
BZ	Bonded Zone
CAGR	Compound Annual Growth Rate
CBA	Cost Benefit Analysis
CIT	Corporate Income Tax
CWE	Carcase weight equivalent
CWT	Carcase weight
ESCAS	Exporter Supply Chain Assurance System – A compliance system for processing Australian sourced cattle
GST	Goods & Services tax
KB	Bonded Zone (Kawasan Berikat).
KEK	Kawasan Ekonomi Khusus - Special Economic Zones
LST	Luxury Sales Tax
LWT	Animal Live weight
MoF	Indonesian Ministry of Finance
NAMPA	National Meat Processors Association – Indonesia
NLRS	National Livestock Reporting Service
OTH	Over-the Hooks – Price paid by beef processors based on carcase weight at the end of the slaughter chain
PLB	Bonded Logistics Centre (Pusat Logistik Berikat)
SEZ	Special Economic Zones
SKU	Stock Keeping Unit
SOP	Standard Operating Procedures
SW	Shipped Weight
VAT	Value Added Tax
GB	Bonded Warehouse (Gudang Berikat)

EXCHANGE RATES USED IN THIS DOCUMENT

USD 1.00	AUD 1.30
AUD 1.00	USD 0.77

IDR 1.00	AUD 0.000098
AUD 1.00	IDR 10,200

IDR 1.00	USD 0.000075
USD 1.00	IDR 13,300

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Executive Summary

(Executive Summary)

This study is an initiative under the Indonesia - Australia Partnership on Food Security in the Red Meat and Cattle Sector (also termed the Red Meat Partnership). It explores the potential for establishing a bonded zone in Indonesia, a major importer of Australian live cattle as well as chilled and frozen beef. The study was commissioned to explore whether a bonded zone in Indonesia could offer advantages in terms of timing and extent of duties and taxes paid on imported livestock and meat. Forecasts for the Indonesian market suggest that a compound annual growth rate in beef imports of approximately 4% could continue for the next decade due to population growth, higher per capita incomes and local consumers' innate preference for beef over other proteins. Indonesia's beef self-sufficiency agenda could possibly benefit from learnings made in the course of Australia's long history of cattle industry development.

The study's main conclusion, based on the project methodology and the assumptions detailed in the report, is that the construction of facilities to feed, slaughter and debone Australian cattle in Indonesia and with the intention of exporting a percentage of the product is likely not viable and that currently there is no significant business driver to establish a bonded zone for this purpose in Indonesia. This conclusion is based on the following observations:

- Potential to export beef products to markets with which Indonesia currently has favourable tariff arrangements could be short-lived because other bi-lateral and multi-lateral tariff provisions will be phased in over the next five years.
- The Excel model presented as part of the study showed that utilising or upgrading existing facilities to lower the capital costs of the project does not materially change the financial outcome. The negative result is mainly attributed to the difference in the cost of fed cattle delivered to the zone relative to competing cattle being processed in Australia.
- A further factor that hinders the viability of the concept is that current regulations in Indonesia require 50% of production to be exported in order to qualify for tariff exemptions: this is not deemed to be compatible with the likely business model the processing business would use.
- At entry to the slaughter plant, cattle in Indonesia are already in the region of AUD402 to AUD631/head more expensive than similar livestock delivered to a slaughter plant in Australia because of the cost of shipping/transport, feeding costs, import duties and trading margins. This difference cannot be overcome by low labour costs nor by lower feed costs in Indonesia.

Background

In 2017 Indonesia imported approximately 513,000 head of cattle from Australia. Most of these were subsequently placed in feedlots and processed in ESCAS-approved plants throughout the archipelago. Although this was a 17% reduction on shipments in the previous year, stakeholders in both countries assume that the live cattle trade will remain resilient and will be the basis of value adding through feed-lotting and beef production throughout Indonesia.

Infrastructure investment is a high priority for the Government of Indonesia in order to invigorate business growth and private sector investments. The initial terms of reference for the study noted that high logistics costs and inadequate infrastructure have sometimes been blamed for hampering growth and for reducing the international competitiveness of Indonesian industries, including the beef sector. To try and counter some of these roadblocks, the government has already set up a series of bonded logistics zones that enable businesses to defer the payment of import duties and value added taxes on imported manufacturing components until the finished products have entered the domestic market. This study looks at whether it would be viable to set up a beef feedlot and processing plant in a bonded zone which would enable operators to delay payment of import levies, taxes and other on-costs until the finished product is sold into the domestic market. This includes the potential for the

enterprise to re-export some cuts from the fed cattle to third country markets, especially given Indonesia's proximity to other regional markets with growing demand for beef. In theory this could enable the operator to leverage Indonesia's low labour costs, consistent feed availability and high returns for beef co-products into a more competitive offering for the domestic market and a substantial boost in beef self-sufficiency.

Zones: A strategy for investment and growth in Indonesia

The desktop study at the beginning of the project found that the Indonesian Government has already embarked on a number of initiatives to provide incentives to industry that encourage investment, including corporate income tax reduction, inbound investment incentives, accelerated depreciation and/or amortisation deductions, and provisions for tax relief when enterprises reinvest after tax profits in Indonesia within the same or following year. In addition to these measures, the government has already defined at least seven different types of zones to help incentivise investment and to speed up the movement of goods and services to the market.

An important component of Indonesia's ambition to stimulate investment is Badan Koordinasi Penanaman Modal (BKPM). BKPM is an investment service agency of the Indonesian Government which aims to position Indonesia as an attractive destination for investment and to realise a more conducive climate for investment overall. BKPM is considered to be crucial in helping to clarify the types of re-export concessions that may be available to a beef feedlotting and processing investment in the future because the study identified several aspects of bonded zone regulations in regard to import duties and associated requirements which investors would want clarified before proceeding.

The conclusion from this part of the desktop study and the market visit was that the best mix of concessions or deferments on import duties and other taxes applicable to a beef processing facility would be in the form of a Bonded Zone (Kawasan Berikat) where companies produce finished goods which are mainly for export with domestic sales being less than 50% of the previous year's export realisation value. The report annexes present more of this information in detail to enable comparison of different scenarios.

It also found that currently there is sufficient ambiguity and uncertainty in some laws, regulations and practices regarding Bonded Zones to give pause to potential investors.

Beef processing is a dis-assembly industry

During the analysis it became clear that a major issue with the development of a cattle feeding and beef processing facility in a bonded zone is overcoming the significant cost disadvantages of export processing as well as meeting the regulatory requirements associated with taking advantage of KB Bonded Zone opportunities in order to establish export processing compliance capability in Indonesia. Such zones are difficult to apply to a disassembly industry such as meat processing. This is because meat processing transforms one unit of raw material (one head of cattle), through the slaughtering and boning process, into many final products (meat cuts, offals, hides and other materials), all with different volumes and unit values. This has ramifications in terms of the value and volume of exports which might qualify a processing business for tariff concessions on imports.

The complex disassembly involved in the slaughter and boning process, combined with the benefits of processing livestock in the country of origin or processing imported livestock to satisfy importing country consumer demand, makes this an unusual enterprise for a bonded zone. There is currently no bonded zone in Indonesia focussed on animal processing although JAPFA Comfeed, a large agro-industrial group with interests in poultry, aquaculture, and beef, is currently investigating setting up an integrated poultry operation at the JIIPE Java site.

Possible business concept for the bonded zone

Once the preference for a KB Bonded Zone was determined, four preliminary business concepts were developed in order to consider how the enterprise might operate and where the products might go in terms of current regulations around bonded zones. The concepts were:

1. Manufacturing beef processing into consumer ready products
2. Primal cuts processing into retail ready/portion control products
3. Bone-in beef processing into boneless cuts

4. An integrated cattle feeding and beef processing enterprise producing boneless beef products

The conclusion for this part of the study was that options 1 – 3 were quite risky in terms of achieving product consistency and safety, as well as doubts about achieving access to overseas markets for these types of products. The fourth option was determined to be the most viable of the four and the balance of the study was oriented around providing an improved understanding of the opportunities and constraints of the concept of establishing an integrated cattle feeding and beef processing into boneless beef product facility in Indonesia.

Identification of potential export markets

The desktop study concluded that beef exports from Indonesia could be eligible for some tariff concessions to specific Asian markets, including China, compared to Australian-sourced beef exports. This is due to Indonesia being a member of the ASEAN community, and thus eligible for zero-rated tariffs for exports of boneless beef to destinations such as Singapore, Brunei, Cambodia, Lao, Myanmar, Viet Nam, the Philippines and China, while Australia is not part of the ASEAN community. However, the tariff differences are mostly quite small and will be reduced or eliminated altogether when AANZFTA tariff reductions are progressively applied, mostly by 2021. Moreover, most of the lower tariff arrangements are conditional on meeting rules about country of origin and degree of transformation, so that Indonesian-raised beef would likely meet the tariff classification, whereas product imported into Indonesia, then deboned and re-exported, may not qualify for the lower tariff. This area could benefit from further investigation but, prima facie, the lower tariffs currently available for Indonesian beef exports to neighbouring ASEAN countries will likely be short-lived alongside supplies from Australia and New Zealand. With regard to exports to China, Indonesia will have a 7% tariff advantage over Australia until 2024. However, China's market access requirements are exacting, and require approval of individual plants by Chinese authorities and can easily take up to two years to formalise after a country-to-country protocol has been concluded.

There are also a range of non-tariff impediments which should be considered for specific markets: these include the need for import licenses (Myanmar) and requirements for inspection of individual shipments (Thailand); all of which can greatly complicate exporting companies' efforts to gain a foothold in an already competitive marketplace. On the positive side, Indonesia is recognised by the OIE as being FMD-free: this situation would provide a strong starting point in gaining market access to various countries for beef products.

In terms of export markets that could accept the product from the processing business, the study extensively considered a range of regional and international destinations that have growing demand for beef; have increasing population base and projections of higher disposable income; and also identified markets where Indonesia might be at a tariff advantage compared to other beef suppliers such as India. This is treated extensively in Annex 5, including examination of the changing tariff landscape. The resulting conclusions from this work was, firstly, that the Indonesian domestic market itself offers equal or better returns than many export markets; that regional markets such as Malaysia may be good long term prospects; and that markets such as PNG, Taiwan, Philippines, Saudi Arabia, UAE, Singapore, Thailand, Viet Nam and Hong Kong are also arguably potential markets for Australian beef produced in Indonesia. Several of these markets accept only Halal-slaughtered product, which Indonesian product could comply with.

Feedback from industry stakeholders in Indonesia

Interviews with Indonesian business people in the livestock and meat sector produced a wealth of information but also highlighted three main concerns about the suitability of bonded zones for their industry:

1. The current government requirement that imports of live cattle include one breeding animal for every five animals imported. This policy is designed to help build the domestic cattle herd and, ultimately, to reduce the need for imports of live animals of meat, but this requirement would substantially reduce the cost advantage of cattle feeding and processing in Indonesia relative to Australia.

2. The requirement that companies in bonded zones export 50% of their production. Stakeholders believe the local market would deliver better returns, particularly for by-products (offal, fat and bone) and most have no experience in international export marketing.
3. Location issues including whether integrated feedlot and processing operations are feasible in a single Bonded Zone due to the large amount of land required to accommodate the feedlot and the processing centre.

Overall financial viability

In addition to the concerns about the tariff treatment and export requirements for animals imported to and fattened and processed in Bonded Zones in Indonesia, there is also the question of whether these operations in Indonesia would enjoy enough of a cost advantage over importation of boned meat from Australia to be worth developing.

The study looked carefully at whether the competitiveness of the integrated investment would be improved by virtue of it being in a bonded zone. To do this, the study used several price series to help determine the relationship over time between live export cattle prices, the price of finished cattle delivered into the Indonesian market, and the comparable price of finished cattle of a similar standard in Australia.

The report found that there is a close link between the Queensland over-the-hooks price for Japanese ox (0-4 dentition score, 260-280 kg cw) and live export prices ex the Darwin port which will invariably impact the competitiveness of a beef processing bonded zone in Indonesia. The over-the-hooks price is an indicator price of the cost of cattle delivered to Australian meatworks. An historic price series over the past five years suggests there is a variable gap between these two categories which reflects the competitive position for Indonesian-based processing at any point in time. It is suggested that the size of the gap is too great to be overcome simply by being able to utilise lower labour costs in Indonesia, as well as cheaper feed and better returns for co-products in that market.

It found that at entry to the slaughter plant, cattle in Indonesia are already in the region of AUD402 to AUD631/head more expensive than similar livestock delivered to a slaughter plant in Australia because of the cost of shipping/transport, feeding costs, import duties and trading margins. This difference cannot be overcome by low labour costs nor by lower feed costs in Indonesia. This contributed to the study's conclusion that there is currently no business driver for the feeding, processing and export of the full range of products resulting from slaughtering and boning Australian cattle which have been feed finished in Indonesia. This was subsequently tested in the financial model for the study and the cost benefit analysis.

Related factors affecting success

The establishment of bonded beef processing zones in Indonesia will require careful consideration of the current constraints and requirements that are associated with the establishment of an export compliant beef processing arrangement, in particular the issues associated with:

- Planning and startup period (possibly 3 years);
- The period required to establish country to country veterinary protocols and conduct inspections' of plant operations (possibly 3-5 years);
- The period required to get products accepted by customers and to build product reputation and market penetration (possibly 2-3 years after market entry);
- Addressing the likely inability of a compliant meat processing plant to meet the 50% export criteria required to operate within the current KB bonded zone arrangements;
- Clarification and establishment of certainty around issues associated with ambiguity and uncertainty in laws, regulations, and practices regarding Bonded Zones so that investments can be conducted with a degree of clarity of expectation and outcome.

Cost benefit analysis results of a bonded zone in Java

The study was conducted on the basis of the new bonded zone facility being located in central Java. It took into account all costs using net present value calculations at a discount rate of 12%. It found that even after 30 years (and even with a zero discount rate) it would not break even and would have a

negative rate of internal return. From this analysis it was concluded that it was not a sound financial investment and that there is currently no business driver for the feeding, processing and export of the full range of products resulting from slaughtering and boning Australian cattle which have been feed finished in Indonesia. Even taking into account several economic, social and environmental costs and benefits, it was difficult to justify as investment, although it is acknowledged that some actors in Indonesia outside the processing sector may see some merit from their individual perspective in having an interest in an integrated feedlot and processing business in their wider portfolios. This was evident during the field visit and partly contributed to the decision to include a template for an expression of interest in the report's conclusions and Way Forward.

While there are existing domestic processing facilities near Jakarta that are well-established and might be able to be converted into export-compliant facilities and be part of a bonded zone, the financial modelling indicated the savings would likely be insufficient to change the overall viability of the business. The other over-riding factor is that currently the regulations in Indonesia require that 50% of production be exported in order to qualify for tariff exemptions: this is not deemed to be compatible with the likely business model the processing business would use.

This is explored in the report's cost/benefit analysis of a 10,000 head capacity feedlot turning off 30,000 head per annum ($A5 million purchase price); integrated with an export-grade slaughterhouse and deboning operation to convert whole carcases into premium primals, secondary primals, manufacturing products, co-products as well as fat and bone (estimated construction and fit-out cost of $A15 million). Several economic, environmental and social benefits and costs are identified in the analysis including forgone revenues from tariffs, VAT and excise duties normally payable to the Government of Indonesia. The analysis also indicates there are significant feed, transport, labour and other operating costs to consider as well as standard overheads and margins that apply to other enterprises in this market, regardless of location within Indonesia. It suggests that, by year 10 of the project, total capital investment in cattle amounts to $A45.5 million and capital tied up in feed equates to $A8.7 million. Over 30 years of operation it fails to break even and produces a negative internal rate of return over that time.

Notwithstanding this conclusion, the report proposes two pathways forward for this type of endeavour for the future, in the event that new information comes to light or other policy changes come into effect. It would be advantageous if the relevant authorities could provide sufficient clarity about the regulations surrounding exports from bonded zones in regard to the proportion of finished produce that would be subject to taxes and duties. As well, the period required between commencing investment and export of compliant beef products should also be clarified. It recommends that the current requirement setting a ratio for the proportion of breeding cattle to feeder cattle be waived for organisations that wish to set up enterprises in bonded zones in the future, which will provide a better environment for these businesses to succeed. The report also identifies pathways for the development of export of further processed beef products through the use of bonded zone arrangements, notwithstanding the short-term obstacles identified for this option.

Should there be firm interest from investors in undertaking this, the Red Meat Partnership has an active role to play in supporting the development of the program by assisting with providing:

- Training for operator management and staff;
- Training for meat inspection services; and
- Establishing prerequisites for meat processing export compliance.

This could also be enhanced by proceeding through a formal written Expression of Interest process that will help define for the investor the requirements, benefits and anticipated costs associated with establishing this type of operation in a bonded zone.

1 Introduction

1.1 Project Background

The Indonesia - Australia Partnership on Food Security in the Red Meat and Cattle Sector is a jointly agreed heads of government initiative underpinned by an AUD60 million fund provided by the Australian Government over 10 years from 2013 to 2023. The purpose of the initiative is to develop a competitive, efficient and sustainable Australia-Indonesia beef and cattle industry.

As part of this initiative, the Australian Government has commissioned a study on the potential use of Bonded Zones as a way to overcome some of the perceived challenges to the growth of the Indonesian beef and cattle industry that are reportedly posed by high logistics costs and poor infrastructure. These have been blamed in the past for hampering development and for reducing the international competitiveness of Indonesian industries. [1]

The Indonesian Government has already established a number of special economic zones (SEZs) and bonded zones (BZs) for other manufacturing industries which offer a variety of mechanisms, such as delayed payment of import duties and exemption from value-added tax and sales tax on imported intermediary goods, in order to improve competitiveness. SEZs and BZs are typically located around international ports. The zone allows goods to be landed, handled, manufactured or reconfigured, and re-exported, without the intervention of customs authorities and the payment of normal in-country duties.

The purpose of this Study is to better inform the Indonesian government and the red meat and cattle sector of the costs, benefits and viability of establishing a bonded logistics zone specifically for cattle production and processing. Information generated is also expected to provide an evidence base for policy making. Should a bonded logistics zone prove to be viable, it would be expected to improve the efficiency and competitiveness of Indonesia's cattle industry through improved handling and logistics in and out of the bonded zone, resulting in improved profitability and animal welfare outcomes.

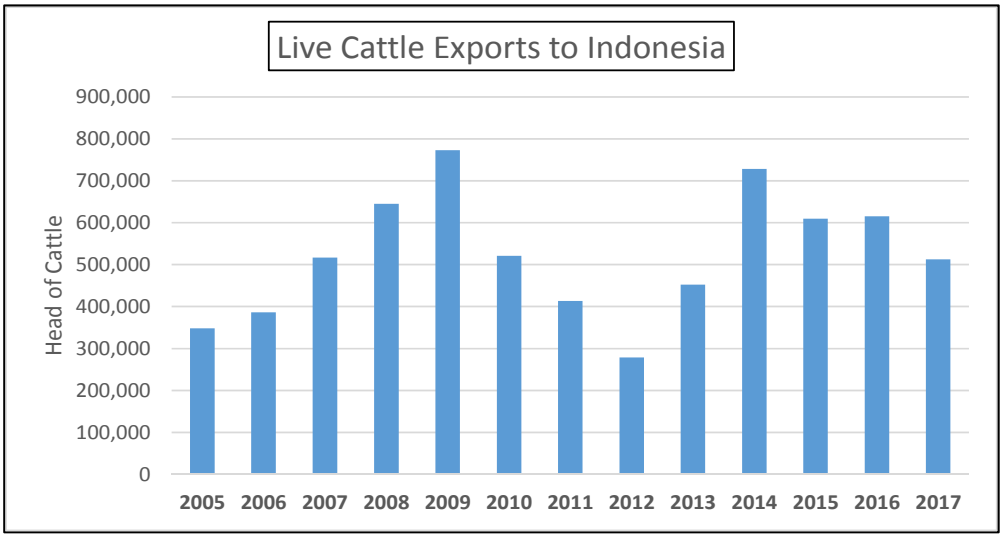
The objectives identified for the study are to:

- Determine the feasibility and viability of a bonded logistics zone as a means to improve Indonesia's production, processing and export for the beef industry.
- Calculate the costs and benefits of establishing a bonded logistics zone for cattle production and processing to inform investment and policy decisions.
- Identify and quantify the key factors that will determine the ongoing commercial success of a bonded logistics zone for the beef industry to attract domestic and international investors.

Live cattle exports are a major feature of the Indonesian-Australian trading landscape. Indonesia is Australia's single largest live export market. Figure 1 shows the importance of this trade, with imports in the period 2014 to 2017 exceeding 500,000 head every year.

[1] Department of Agriculture and Water Resources. Request For Tender For Feasibility Study Of a Cattle Bonded Logistic Zone In Indonesia, RFT 2017 – 24125

Figure 1 – Live Cattle Exports to Indonesia



Source: MLA Monthly Live Export Statistics

1.2 Project Description

The establishment of bonded zones to support Indonesia's export industries is a relatively new concept. BZs have recently been established, but it is too early to consider their level of impact. Extensive planning and analysis is expected before further BZs will be considered by the Government of Indonesia. Industry stakeholders have expressed an interest in the potential of a Beef Processing Bonded Zone (BPBZ) to be established for the red meat and cattle sector.

This Study seeks to better understand all aspects of a bonded logistics zone, including:

- Analysis of existing BZs and other special economic zones in Indonesia and regionally
- Current policy context and whether they are conducive to the establishment of BZs
- The factors that have influenced the development and viability of existing BZs
- Analysis of the existing investment environment and whether the concept is attractive to domestic and international investors
- The likelihood that Indonesia's beef industry can identify and supply viable export markets
- Benefits to the Indonesian red meat and cattle sector
- Supply chain logistics (from importing countries and possible export countries)
- Establishment and management costs of a BZ, including potential location and industries using its services
- Levels of private investment likely to be attracted to a cattle BZ
- Costs and timeframes to government and industry in establishing market access
- Cost/benefit analysis (CBA) and financial viability of a bonded logistics zone for cattle production and processing.

1.3 Study Methodology

The project commenced with a Desk Study and review of relevant literature. The bonded zone concept as applied in other settings was particularly relevant in identifying advantages and disadvantages of these types of arrangements. Following the Desk Study a market visit occurred including extensive industry and government consultation. The consultations were conducted with a range of relevant stakeholders, including:

- Industry / commercial sector stakeholders
- Relevant Government of Indonesia departments and agencies

- Universities, expert organisations and individuals that have undertaken relevant research in Indonesia and elsewhere
- Others as agreed during contract negotiations.

Subsequent to the market visit, further analysis was made of the information uncovered in addition to research on potential markets for beef exports from Indonesia and associated factors such as tariffs applicable in these markets. Likely competition in these potential markets from other beef suppliers, such as New Zealand, Australia and India, was also assessed. Production metrics for a suitable beef production and processing business were developed in order to establish any competitive advantage for a beef bonded zone in Indonesia. A draft report was prepared for comment and revisions made.

The completed Study documentation includes a simple Excel-based model from which the cost benefit analysis is derived which will enable various scenarios to be tested if the business and policy environment changes in the future.

1.4 Outline of Report Structure

The report necessarily covers several conceptual, operational and commercial factors in looking at the feasibility of a bonded beef zone. After this Introduction, Chapter 2 discusses bonded zones and special trade zones in general, including their broad regulatory features, challenges they pose, and examples already existing in Indonesia. Chapter 3 introduces four 'beef-oriented' business concepts for the bonded zone that emerged following the literature review, market visit and subsequent analysis. These are looked at more extensively in Annex 9 as well and they represent four different scenarios or development concepts. The conclusion reached at this stage of the analysis was that the major issue with the development of a facility inside a bonded zone would be overcoming the significant cost disadvantages of export processing within the restrictions of current bonded zone requirements and this becomes a major consideration throughout the study.

Chapter 4 briefly looks at the outlook for cattle supplies which the bonded zone could utilise based on industry forecasts, as well as cattle price trends. Again, more information is provided on this aspect in Annex 6 as the availability of raw material is important to the ongoing sustainability of such a venture. Then, Chapter 5 reviews the beef market dynamics of Indonesia itself which has a complex structure and set of commercial arrangements, including values for many co-products. This chapter also looks at competition in surrounding export markets as well as the type of overseas destination that could potentially be targeted by a bonded zone processing facility, supported by information in Annex 5. The chapter also briefly examines the characteristics of Australia's beef export trade in order to understand the type of products being sent to export markets, where the markets are, and the relative values. This also provides an insight into how the different components of the beef carcase are allocated in terms of value in different markets, supported by more information in the annex.

Chapter 6 looks at processing metrics in order to understand volumes of utilities normally used in abattoir operation as well as the major differences in slaughter and boning labour productivity in two different industries. It discusses expected values for co-products such as hides and offals to start bringing into focus the commercial factors the beef processing facility would need to respond to.

Chapter 7 is a summary chapter, based on the earlier information provided on bonded zones and beef demand locally in order to identify some of the investment benefits and competitive drivers that may assist the business, as well as potential challenges in supplying export markets and the costs of processing cattle inside such a zone, including the scale of the business and performance projections. Importantly it also looks at the relative advantages that could accrue from higher co-product prices and lower labour costs that might be found in the Indonesian setting.

Chapter 8 then looks at specific location and investment considerations including the site details; employment projections; and calculations about the size of the investment which are mirrored in the accompanying excel model. It is supported by material in Annexes 7 and 8 (concept drawing).

The following Chapter 9 sets out a formal cost benefit analysis of a cattle production and processing bonded zone, including financial analysis and conclusions about the viability of the proposed concept.

The final study component, Chapter 10, sets out The Way Forward in terms of two distinct pathways which seem feasible in light of the information presented in the body of the report.

Importantly, the Report Annexes contain further statistical and other information which support the report overall and give insights into specific aspects such as details of bonded zone requirements in Indonesia; experience in other jurisdictions; more information on the four business concepts considered; outlook for Indonesian beef demand and self-sufficiency; and material about co-products pricing and production.

2 Bonded Zones and Indonesia

2.1 Investment Challenges

Indonesia is composed of over 13,000 islands and is home to over one-quarter of a billion people. The country's island-based geography presents rich diversity in ethnic, religious and linguistic communities, as well as incredible biodiversity and a wide array of natural resources. While these features contribute to Indonesia's unique advantages, they should also be at the forefront of investors' minds when considering investment.

Amidst a variety of governance-based concerns, which are the subject of intense scrutiny and the target of government reform under the current administration, infrastructure remains a salient variable for investments, with significant profit implications. Estimated by the Asian Development Bank at a massive US$700 billion, infrastructure deficits in Indonesia can restrict the ability of investors to conduct operations in a successful manner.[2]

Fortunately, Indonesia has a number of investment options available to mitigate the impact of these challenges. Regardless of the nature of investment chosen, various factors – including tax incentives, infrastructure and logistics, proximity to resources, and labour costs and skill levels – must be taken into consideration when choosing a location for investment in Indonesia.

Due to these investment challenges, Indonesia has embarked on a number of initiatives to provide incentives that encourage investment including the establishment of a variety of Bonded Zones (a summary of the incentives that are available is provided at Annex 4).

2.2 Bonded Zones and Special Trade Zones Overview

The desk research initially compared Bonded Zones, Free Zones, Industrial Zones, and Special Economic Zones, particularly with reference to fiscal and non-fiscal incentives; permitted and prohibited activities; eligibility requirements and approval procedures for zone developers, operators, and occupants; eligible locations for zones; and governance, oversight, and regulation (see Annex 3).

Bonded Zones (BZs) and Special Trade Zones (SEZs) are often times confused. The following can be used as general definitions.

Bonded Zones

- Bonded zones include buildings or other secured areas in which imported dutiable merchandise may be housed or manipulated, and companies can assume manufacturing operations without the payment of duty.

Special Economic Zones

- Secure areas in or adjacent to a port of entry where commercial merchandise, both domestic and foreign, receive the same treatment by Customs as if it were outside the commerce of the Country.

[2] Asian Development Bank, "Closing Infrastructure Gap in Indonesia," 29 February 2016. News release.

While they have some differences, it can be seen from Table 1 that the advantages of operating in either type of zone are similar.

Table 1 – Advantages of BZs and SEZs

Advantages	Bonded Zone	Special Economic Zone
Tax and duty exemption from paying when the shipment arrives	✓	✓
No duties paid on re-exported goods (which eliminates the duty drawback process)	✓	✓
Increased cash flow, because money is not held up in duties and taxes	✓	✓
Manufacturing is allowed within a BZ or SEZ, and if the products are sold into the domestic market, duties and taxes are payable on the value of the imported inputs.	✓	✓

Organisations operating in BZs or SEZs are also able to take advantage of whatever other financial incentives and taxation concessions provided within the specific country that are intended to encourage and stimulate investment in productive activities.

Bonded zones are particularly successful when applied to industries involved in manufacturing assembly where purchased components are combined together to produce a finished marketable item for both domestic and export markets. These types of industries include:

- Automotive manufacture and assembly;
- Textile, clothing and footwear manufacture and assembly;
- Manufacture and assembly of the full range of both traditional and modern electronic items;
- Assembly of retail ready food products where input components are combined to produce a finished item.

An important component of the application of the principles of bonded zones is access to bonded storage facilities where the necessary components for the manufacture of the finished item are held in storage duty free until required in the manufacturing process. When supplying export markets, bonded manufacturing facilities can combine components stored in bonded facilities to produce value added finished items, which can subsequently be re-exported without incurring cross-border expenses such as duties and tariffs.

However, this situation becomes quite complex when the finished items are supplied into the domestic market and there is a need to establish the appropriate duties and taxes to be applied. In an assembly industry this is somewhat easy to apply because the duties and taxes can be assessed based on the imported components used in the assembly of the finished goods. A meat industry example of such a manufacturing process would be the production of further processed products such as hamburgers or bakso balls where raw material items are combined to produce a finished retail ready product.

Bonded zones are more difficult to apply to disassembly industries, such as livestock processing, because it involves breaking one unit of raw material (cattle) into many items of final products: this is the reverse of an assembly process.

The project team identified no examples of complex disassembly industries and only limited examples of simple disassembly industries e.g. agri-processing in bonded zone arrangements. This is principally because these processes are almost universally conducted in the country of origin of the live animal, except when livestock are exported, which is almost universally conducted as a component of a supply chain expected to satisfy domestic demand in the importing country.

The complex disassembly involved in the slaughter and boning process, combined with the benefits of processing livestock in the country of origin or processing imported livestock to satisfy importing country consumer demand, makes this an unusual enterprise for a bonded zone. The project team found only two existing examples in Indonesia: one in South Sumatra and also in the JIIPE zone I East Java.

2.3 Policy and Regulatory Features of Bonded Zones

Bonded Zones in Indonesia are under the auspices of the Ministry of Finance and their enabling/governing legislation is Minister of Finance Regulation No. 147/PMK.04/2011 regarding Bonded Zones, as lastly amended by Regulation No. 120/PMK.04/2013. According to the documentation, companies in a bonded zone are entitled to duty, VAT, and excise duty waivers on most imports (machinery, equipment, raw materials, etc.).

This research concluded that the Bonded Zone (Kawasan Berikat) regime is suitable for the beef industry, and that it presents several advantages that may make it preferable to other structures. These advantages include:

- **Permitted activities:** Bonded Zone legislation explicitly allows:
    a) Processing of goods and materials into manufactured goods with a higher added value; and
    b) Cultivation of flora and fauna. Legislation for SEZs, Free Zones, and Industrial Zones does not explicitly prohibit these activities, but nor do they explicitly authorize them. Each of these structures has a 'positive list' of permitted activities, none of which include feedlots and/or meat processing, so it could require special authorization allow these activities in an existing zone or to establish a new zone dedicated to these activities.
- **Eligible locations:** Bonded zones can be set up in any area zoned for industrial use (or, in the case of agriculture, for agricultural use), subject to local government approval. Industrial zones cannot be set up on agricultural land, there is only a single authorized Free Trade Zone, in the Riau Islands, and SEZs are limited in number and location by the National Council for SEZs.
- **Approval procedures:** Local governments approve the physical location for a Bonded Zone and the Department of Customs and Excise issues approval for Bonded Zone status. SEZs require formal designation by the President of the Republic.
- **Incentives:** Bonded Zones, SEZs, and FTZs enjoy similar VAT and duty incentives, while similar incentives for Industrial Zones are more limited. SEZs offer more generous exemptions from corporate income tax, but only for companies with a minimum investment of IDR 500m.
- **Other:** A company in a Bonded Zone may sell to a company in a different Bonded Zone without either party incurring a VAT or duty liability on the sale. This would make it possible to import cattle to a feedlot operating in one Bonded Zone and sell the fattened animals to an abattoir/processing facility in another Bonded Zone, with taxes and duties payable only on the import value of the animals and of any imported feed or other raw materials, when the meat is sold into the domestic market.

2.3.1 Bonded Zones in Indonesia

Bonded Storage Areas (BSAs) are part of a programme created by Government Regulation No. 32 of 2009, as amended by Government Regulation No. 85 of 2015. There are seven kinds of BSA's:

1. Bonded Warehouse (Gudang Berikat (GB)).
2. Bonded Logistics Centre (Pusat Logistik Berikat (PLB)).
3. Bonded Zone (Kawasan Berikat (KB, the main bonded zone used in manufacturing for export).
4. Bonded Exhibition Area (Tempat Penyelenggaraan Pameran Berikat).
5. Duty Free Shop (Toko Bebas Bea).
6. Bonded Auction Place (Tempat Lelang Berikat).
7. Bonded Recycling Zone (Kawasan Daur Ulang Berikat).

Most of these are specialized structures meant for temporary storage and limited transformation (e.g. packaging, reassembly, repair, etc.) of goods imported to Indonesia for subsequent re-export or sale in the domestic market. The advantage of such BSAs is that they exempt these goods from import tariffs,

VAT, and excise duties, which are then payable when the goods are sold in the domestic Indonesian market, or fully exempted on re-export of the goods.

Only three of these BSAs that exist in Indonesia are of particular relevance to the meat processing sector:

1. Bonded Warehouse (Gudang Berikat).
2. Bonded Logistics Center (Pusat Logistik Berikat).
3. Bonded Zone (Kawasan Berikat).

2.3.2 Bonded Warehouse (Gudang Berikat (GB))

GBs are principally for the duty free storage of goods to be used in downstream processing.

Goods are stored and released when required by the manufacturer and no product transformation occurs in the GB.

GBs could have relevance to the meat industry for:

- **Bonded Coldstore**: Storage of meat items duty free until release when required by a further processing manufacturer producing items such as bakso balls, sausages, hamburgers, etc. Payment of duties etc are due when the items are released from the Bonded Coldstore.
- **Bonded Dry goods Store**: Storage of imported ingredients and packaging for release for further processing when required by a manufacturer.

2.3.3 Bonded Logistics Centre (Pusat Logistik Berikat (PLB))

PLBs are bonded warehouse arrangements that provide for limited transformation of imported items prior to supply into primarily the domestic Indonesian market.

PLBs allow for delayed payment of duties which are only due when the item is delivered into the domestic market.

Limited transformation of the product is allowed in the PLB (eg retail packaging).

Operations in PLBs are consider to be outside Indonesian territory and therefore the applicable duties and tariffs are assessed on the product when it enters the domestic market, including any value add that has occurred during the limited transformation process.

PLBs have limited application to the meat sector due to the assessment of duties payable being based on the imported product plus any value addition that occurs in the PLB.

Examples include:

- Breeding livestock that are imported into a PLB and artificially inseminated in the PLB prior to release to the domestic market. However import duties on breeding animals have been zero rated so the benefits of operating in a PLB is negated.
- Feeder animals imported into a feedlot in a PLB where the animal is fed prior to release to the market:
    - Applicable duties would be assessed on the value of the finished animal rather than the value of the imported feeder.
    - The value of the imported feeder is in the region of AUD1500 which at a duty rate of 5% is a cost/animal in the region of AUD75/head; the value of the finished animal would be approximately AUD1800 and the duty would increase by AUD15/head. This extra cost would need to be covered by the reduced cost of working capital required for the 100 day period between feedlot entry and release to market.
    - Table 2 provides the breakeven positions for the establishment of a feedlot under a PLB arrangement. From this table it is clear that it is preferable to pay duties on entry rather than establish a PLB and pay duties on exit, since the effective breakeven rate for interest on the working capital difference exceeds 64%.

Table 2 – Cost Benefit of Establishing a Feedlot as a PLB

ESTIMATE OF BREAKEVEN FOR DELAYED PAYMENT OF DUTIES WITH A FEEDLOT ESTABLISHED AS A PLB					
Imported Feeder Animal Value	$1,300	$1,400	$1,500	$1,600	$1,700
Applicable Duty on Importation (5%)	$65	$70	$75	$80	$85
Finished Animal Value (feed cost plus margin - say +$300/head)	$1,600	$1,700	$1,800	$1,900	$2,000
Applicable Duty on release of the finished animal when Feedlot is established as a PLB	$80	$85	$90	$95	$100
Extra Duty payable as a result of value addition in PLB	$15	$15	$15	$15	$15
INSTEAD OF PAYING THE APPLICABLE DUTY ON ENTRY - EXTRA DUTY IS PAYABLE ON EXIT THE BREAKEVEN INTEREST RATE FOR THE DELAYED PAYMENT OF THE DUTY IS PROVIDED BELOW					
Breakeven interest rate assuming the duty payment is delayed by 100 days	**84%**	**78%**	**73%**	**68%**	**64%**

A PLB is therefore not considered an appropriate zone for slaughter and processing as these processes involve substantial transformation of the imported product (live animal to carcase (+ co-products) and to boneless meat).

2.3.4 Bonded Zone (Kawasan Berikat (KB))

KBs are more flexible and are specifically intended for processing of raw materials into finished goods. As such, they could be suitable vehicles for development of Indonesia's beef and cattle industry.

KBs allow for delayed payments of import duties and taxes and also provide other benefits, however there is currently a government restriction in place that these benefits only flow to manufacturers who export 50% or more of production.

The challenges for establishment of KBs for the livestock and meat processing sector include:

- The applicability of current thinking around the rules and regulations of KBs to include a complex disassembly process such as occurs in the slaughtering and boning processes in the meat industry;
- Compliance with the requirement to export 50% of production.

These issues are addressed later in this document, however, it is important to emphasise that it is currently unclear how the 50% export requirement would be applied to a complex disassembly process such as livestock processing.

In summary:

- ***Bonded Warehouses (GBs) may be able to provide benefits to further processing manufacturer producing items such as bakso balls, sausages, hamburgers, etc by way of delaying import duties for cold storage of meat items and dry storage of imported ingredients and packaging until release when required by the manufacturer.***
- ***It seems unlikely that a Bonded Logistics Centre (PLB) would provide benefits unless there was very little transformation (see GBs) since the applicable duty on entry to Indonesia is assessed on the import value plus the value added in the PLB.***
- ***Bonded Zones (KBs) may have a role to play for feeding and processing livestock into meat however Indonesian authorities will need to evaluate and consider how the operator may be able to overcome the challenges associated with:***
  - ***The complex disassembly process inherent in livestock to meat processing; and***
  - ***Compliance with the requirement to export 50% of production.***

2.4 Concerns Regarding Bonded Zone Import and Export Requirements

Interviews with Indonesian business people in the livestock and meat sector highlighted three main concerns with respect to the suitability of bonded zones for their industry:

1. The requirement that imports of live cattle include one breeder for every five animals imported. This is a policy intended to help build the domestic cattle herd and, ultimately, reduce the need for imports of live animals of meat, but this requirement would substantially reduce the cost advantage of cattle feeding and processing in Indonesia relative to Australia.
2. The requirement that companies in Bonded Zones export 50% of their production.
3. Location issues including whether integrated feedlot and processing operations are feasible in a single Bonded Zone.

2.4.1 Requirement to Import Breeder as well as Feeder Animals

With regard to the first issue, goods imported directly from outside Indonesia into a Bonded Zone should not be subject to the 1:5 or 1:10 breeder to feeder ratio imposed on live cattle imports, since a Bonded Zone is not, technically, within the Indonesian Customs territory. The regulations, however, are not clear on this matter and the possibility remains open that they would not be exempted.

The Bonded Zone Regulations of 2011 seem to differentiate between Free Zones and Bonded Zones: 'Free Trade Zone and Free Port', hereinafter called Free Zone, is a zone located in the jurisdiction of the Republic of Indonesia that is separate from customs area, so free from imposition of import duty, Value Added Tax (PPN), Sales Tax on Luxury Goods (PPnBM), and Excise.

The laws and regulations for Bonded Zones provide similar benefits, but refer to 'suspension' of these duties and taxes rather than 'exemption'. It is not certain whether this apparent distinction exists in the original Bahasa Indonesia versions of the regulations.

Great Giant Foods is an Indonesian agro-food group whose subsidiary, Great Giant Pineapple, is the third-largest pineapple producer, and the largest integrated growing and processing facility, in the world. Great Giant owns a 32,000-hectare plantation near Lampung in South Sumatra, all of it a Bonded Zone, in which its Great Giant Livestock (GGL) subsidiary has set up an integrated feedlot and beef processing facility, using waste from pineapple processing as livestock feed. GGL produces chilled beef for the Indonesian market under its Bonanza Beef brand from animals imported from Australia to its feedlot, and it also sells fattened animals to other processors and does contract slaughter and boning at a facility in Bogor. The GGL feedlot has a standing capacity of 30,000 head.

GGL indicates that the feedlot in the Bonded Zone may not need to comply with the 1:5 or 1:10 requirement. This suggests that animals (or any goods) imported into a Bonded Zone are not considered imports into Indonesia. Since the animals ultimately enter the Indonesian Customs territory as fattened animals or as meat, the breeder requirement is avoided. This status needs to be confirmed.

2.4.2 The 50% Export Requirement

The 50% export requirement is complicated, because the regulations do not specify the basis for assessing value. The Bonded Zone regulations state that 'companies having a Bonded Zone license may sell for domestic consumption a maximum of 50% of the previous year's export realisation value and/or sales value to other Bonded Zone areas'. This appears to impose a limit on domestic sales of less than 50% of total production value: If a company produced $1m of goods in Year 1 and exported 90% of this, the maximum domestic sales in Year 2 would be 45% of this figure, or $450,000, regardless of any increase in production value from Year 1 to Year 2. So, if the value of the company's production in the second year climbed to $2m, it would be allowed to sell only $450,000 in the domestic market, less than 25% of its production value.

Discussions with Indonesian producers and traders, however, suggest that this is not the intent of the regulations and that in practice a Bonded Zone company can sell 50% of its production value domestically. But there are questions concerning the duties and taxes payable on these domestic sales which would need to be clarified before an investor would consider a commitment of this nature. The

dutiable and taxable basis is the value of imported goods incorporated in the finished product. But with imported livestock or animal carcasses, a substantial portion of the imported product is lost as wastage, or sold as lower value items such as bones, hides, hooves, etc. Proper assessment of the dutiable value thus requires detailed inspection and complex calculations.

Several people in the industry have suggested that, because the Red Meat Partnership is an important part of Indonesia's efforts to improve food security and increase animal protein consumption by Indonesians, the government could potentially reconsider and adjust the 50% export requirement for meat processing. This also would need to be clarified and confirmed as appropriate for the peace of mind of potential investors.

2.4.3 Location issues

The integrated GGL fruit and livestock Bonded Zone in South Sumatra is something of a special case, which may not be replicable in many other areas. Most Bonded Zones are oriented towards light manufacturing, transport and logistics, and services, which may not be zoned for agriculture and which may not easily accommodate the odours and noise from an abattoir.

A visit to the Java Integrated Industrial and Ports Estate (JIIPE) in Gresik, East Java, supports this conclusion. JIIPE is a 3,000-ha Bonded Zone, which includes a 400-ha port, a 1,761-ha industrial estate, and an 800-ha residential and recreational area (with golf course). The industrial portion is 60% owned by AKR, a large Indonesian logistics and supply chain company, engaged in trading and distribution of petroleum and chemicals, transportation facilities, and port operations, and the parent company of JIIPE, and 40% by Pelindo, the Indonesian ports corporation. The port area is 60% owned by Pelindo and 40% by AKR, and the residential/recreational area is 100% owned by AKR. The site is in the first phase of development, but AKR has already invested more than $300m, and there are already an operational bulk cargo terminal and cold stores, and several industrial sites under development. Anchor tenants include mining company Freeport McMoran, which is putting up a copper smelter on a 100-ha site.

JAPFA Comfeed, a large agro-industrial group with interests in poultry, aquaculture, and beef, is investigating setting up an integrated poultry operation at JIIPE to include feed manufacturing, chicken hatching, and poultry processing. JAPFA's location is positioned downwind from the rest of the zone, and in any case, requires far less space than a feedlot. Although an abattoir and beef processor with a capacity of 400 head/day would need as little as 5-ha, an abattoir still needs to hold animals for 24 hours before slaughtering if they are destined for export, thus substantially increasing the area needed to house the bonded zone operation. So in reality most potential beef processing projects would need to set up feedlots in agricultural areas, although they could do slaughtering and processing in existing or new Bonded Zones adjacent to port areas. Bonded Zone regulations clearly allow for goods to move from one Bonded Zone to another without attracting import duties or taxes, so this is a feasible model.

There is sufficient ambiguity and uncertainty in laws, regulations and practices regarding Bonded Zones to give pause to potential investors. Any investor would require clarity and written commitments on the questions of breeder import requirements and quantity of minimum exports before proceeding.

In addition to the concerns with respect to the tariff treatment and export requirements for Australian animals imported to and fattened and processed in Bonded Zones in Indonesia, there is the question of whether these operations in Indonesia enjoy enough of a cost advantage over importation of boned meat from Australia to be worth developing. This question is addressed later in this document.

3 Analysis of Possible Business Concepts

Four possible business concepts were considered in relation to the business that could be carried out inside the Indonesian bonded zone. The concepts include:

1. Manufacturing Beef Processing into Consumer Ready Products
2. Primal Cuts Processing into Retail Ready/Portion Control Products
3. Bone-in Beef Processing into Boneless Cuts
4. Integrated Cattle Feeding and Beef Processing into Boneless Beef Products

Annex 9 provides a very detailed analysis of these four business concepts, how they would operate and what they would require in terms of raw material inputs and potential products. Table 3 below provides a summary of what is presented in Annex 9 to briefly describe the four concepts considered:

Table 3 – Summary of Issues and Challenges with Business Concepts

BUSINESS CONCEPT	**MANUFACTURING BEEF PROCESSING INTO CONSUMER READY PRODUCTS (1)**	**BEEF PRIMAL CUTS PROCESSING INTO RETAIL READY/ PORTION CONTROL PRODUCTS (2)**	**BONE-IN BEEF PROCESSING INTO BONELESS BEEF CUTS (3)**	**INTEGRATED CATTLE FEEDING AND BEEF PROCESSING INTO BONELESS BEEF PRODUCTS (4)**
Overview	Relatively simple business process. Export able to be developed from current domestic products.	Relatively simple business process. Export would be able to be developed after supplying domestic market.	Medium business complexity (must sell all cuts). Export could be developed after supplying domestic market.	Highly complex business due to the disassembly nature of beef processing. Combination of two businesses (feeding and processing).
Export Opportunities	Expand Indo ethnic food into other Asian markets. Growth in formal retail and food service in Asian markets.	Growth in formal retail and food service in Asian markets. Potential to introduce new packaging technologies.	Likely limited to premium primals derived from the quarter beef.	Limited to export of premium primals (see further analysis).
Weaknesses	No current manufacturers selling into export markets. Limited product development capacity.	No current manufacturers selling into export markets. To achieve goals product will need to be largely exported in chilled form. Market access into export markets.	Difficulty maintaining quality when processing from frozen bone-in. Would likely only be able to export premium primals. To achieve goals product will need to be largely exported in chilled form. Market access into export markets.	Extra costs associated with meeting export compliance. Would likely only be able to export premium primals. To achieve goals product will need to be largely exported in chilled form. Time taken to establish export compliance and market access.
Challenges to Establishing in a KB Bonded Zone	Complying with 50% export requirement.	Complying with 50% export requirement.	Complying with 50% export requirement.	Complying with 50% export requirement.

BUSINESS CONCEPT	MANUFACTURING BEEF PROCESSING INTO CONSUMER READY PRODUCTS (1)	BEEF PRIMAL CUTS PROCESSING INTO RETAIL READY/ PORTION CONTROL PRODUCTS (2)	BONE-IN BEEF PROCESSING INTO BONELESS BEEF CUTS (3)	INTEGRATED CATTLE FEEDING AND BEEF PROCESSING INTO BONELESS BEEF PRODUCTS (4)
Potential Business Development Process	Upgrade current plant to comply with export requirements. Utilise PLB and GB bonded logistics and warehouse facilities to provide imported meat and ingredients. Establish and grow export markets to a size to make a separate investment in a KB Bonded Zone facility.	Establish a plant to comply with export requirements. Utilise PLB and GB bonded logistics and warehouse facilities to provide imported meat. Establish and grow export markets to a size to make a separate investment in a KB Bonded Zone facility.	Establish a plant to comply with export requirements. Utilise PLB and GB bonded logistics and warehouse facilities to provide imported meat. Establish and grow export markets to a size to make a separate investment in a KB Bonded Zone facility.	Establish bonded feedlot to supply meat processing plant to comply with export requirements. Only feasible option is to take advantage of KB Bonded Zone benefits to overcome disadvantages associated with supplying the domestic market.
Conclusion	Only proceed to processing in a KB Bonded zone facility once export volumes have been established.	Only proceed to processing in a KB Bonded zone facility once export volumes have been established.	Only proceed to processing in a KB Bonded zone facility once export volumes have been established.	**Develop the set of KB Bonded Zone parameters which would allow investment to take place with a high degree of confidence.**

Summary: Following the detailed analysis summarised in Table 3, it became clear that the major issue with the development of a cattle feeding and beef processing facility in a bonded zone is to overcome the significant cost disadvantages that are associated with export processing and also with meeting the regulatory requirements associated with taking advantage of KB Bonded Zone opportunities in order to establish export processing compliance capability in Indonesia. The remainder of this document is dedicated to providing improved understanding of the opportunities and constraints of the concept of establishing an "integrated cattle feeding & beef processing into boneless beef product" facility in Indonesia.

4 Raw Material Sourcing and Pricing for Indonesian Processing

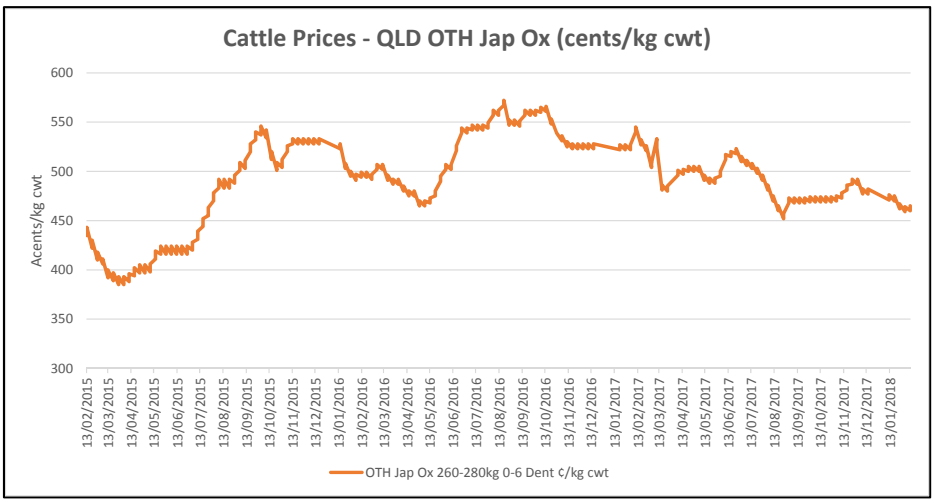
In considering how a cattle production and processing business might operate inside a bonded zone in Indonesia, consideration was given to the likely pricing of raw material (cattle) and the likely continuity of supply (livestock imports).

4.1 Cattle Prices

Since cattle in Indonesia are fed agricultural and agro-processing by-products, the meat quality of the finished animal would be expected to be similar to the beef produced from a well-grown steer raised and slaughtered in Australia. On this basis the relevant indicator data series in the Australian industry for feed-finished steers entering a processing plant in Indonesia is the series for Over the Hooks (OTH) price for 260-280kg 0-4 Dent Jap Ox in Acents/kg cwt. (While feedlot cattle may produce meat that is somewhat better than the Japanese Grassfed Ox category, it can reasonably be expected that beef exported from a bonded zone in Indonesia would at least initially be discounted against Australian-sourced products. Therefore, comparing Indonesian fed cattle with Australian Japanese Ox cattle is considered appropriate.)

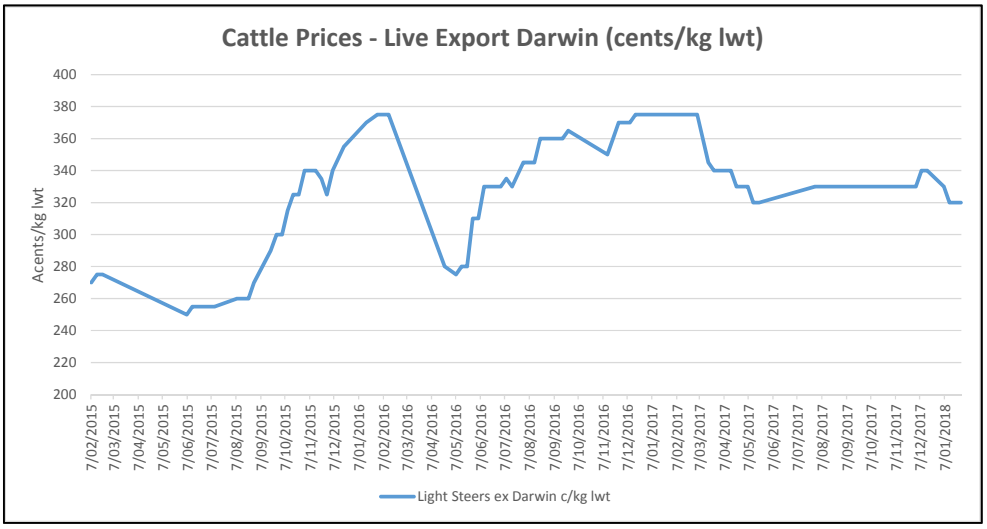
To this end, Figure 2 shows cattle prices for the past three years for the category Grown Steers in Queensland (QLD), based on National Livestock Reporting Service (NLRS) "Over-the Hooks" (OTH) prices. Live export prices ex Darwin reported by Meat and Livestock Australia (MLA) for the same time period are also provided in Figure 3. Note these prices are on a liveweight basis. It can be observed that while the prices in the two series exhibit similar trends they also vary at times, thereby altering the potential competitive position for cattle processed in Indonesia.

Figure 2 – Over-the-Hooks Jap Ox Steer Prices – QLD – A cents/kg cwt



Source: NLRS Over the Hooks Price Reports

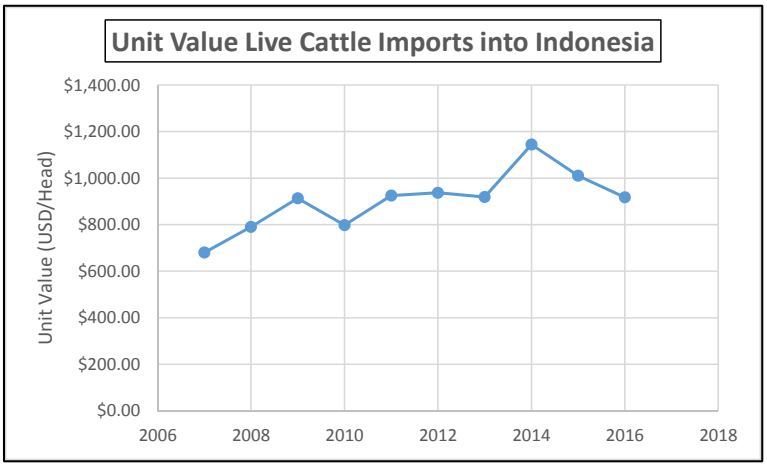
Figure 3 – Live Export Prices - ex Darwin – A cents/kg liveweight



Source: MLA Live Export Price Reports

Figure 4 shows the third price series of relevance, for feeder steer prices entering Indonesia on a per head basis is $US. In the past three years these have averaged around USD1000/head, a useful comparison in examining the viability of the processing plant.

Figure 4 - Import Price for Australian Feeder Steers in Indonesian



Source: UN Comtrade

These three series are of relevance in looking at the financial viability of a potential beef bonded zone.

4.2 Livestock Availability

MLA publishes Australian Cattle Industry Projections on an annual basis with quarterly updates. Recent projections indicate:

- Peak Australian cattle prices are more than likely behind us, and downward pressure will continue to slowly mount for the foreseeable future.
- Over the next five years, beef production is expected to slowly start increasing again and, as this eventuates, some downward pressure is likely to be placed on the market.
- Australian cattle prices are unlikely to drop back to pre-2013 levels, buoyed by lingering re-stocker activity when pasture conditions eventually improve, along with the improbability of a strengthening A$ and reducing tariff regimes into Japan, Korea and China.

Meanwhile, live cattle exports in the next five years are projected to be well below 2014-2016 levels and stable at around 800,000 head/annum. Indonesia has dominated this sector over the past decade, accounting for 45% - 55% of Australia's total live shipments as shown at Figure 39.)

The conclusion was that for the short to medium term there will be adequate numbers of cattle available from Australia available to supply the potential business inside the bonded zone. Further information on the outlook to 2021 for Australian cattle slaughter and live export levels is shown at Annex 6.

Relevant prices to watch in terms of pricing raw material are live cattle prices ex Darwin as well as finished cattle prices delivered to abattoirs in Australia on an Over-the-Hooks basis.

5 Indonesian Beef Market Dynamics and Export Opportunities

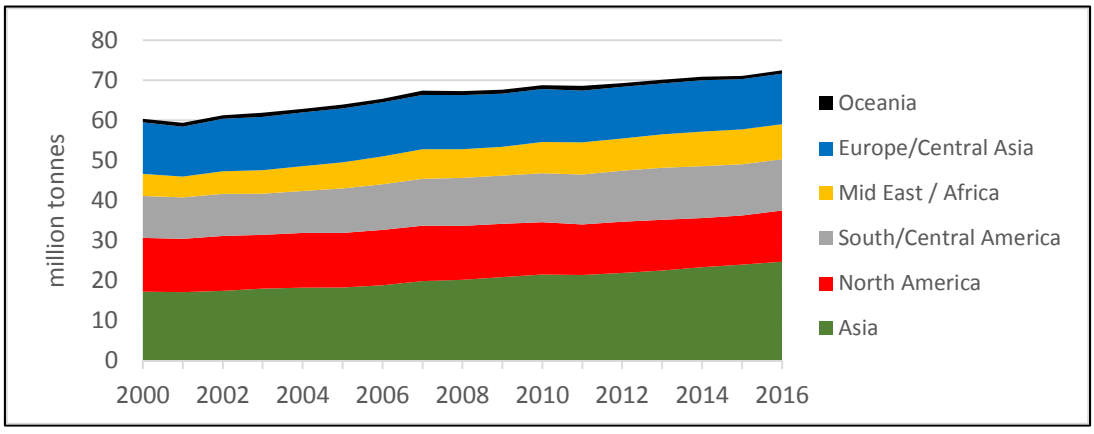
Indonesia is a growing market for protein and other agricultural commodities. A combination of the population growth rate, rising per capita incomes and innate preference among consumers for beef means that this market will continue to offer many opportunities along the beef supply chain over the next few decades. Recent ABARES modelling of Indonesia's food demand through to 2050 suggested that the value of beef imports could reach as much as $US26 billion (in 2009 US dollars) by 2050 compared to an estimated value in 2009 of $US0.5 billion. Improvement in the country's level of beef self-sufficiency will see more demand met by locally produced product but, even assuming it reaches a self-sufficiency level of 70%, there could potentially be a market in 2030 for over 77kt beef/590k live cattle. To reach higher levels of self-sufficiency will require substantial increases in productivity throughout the Indonesian supply chain. Carabeef (buffalo meat) imports are now being allowed into Indonesia and these, too, may play a role in meeting market demand.

Some of the opportunities that have been identified elsewhere and discussed in this report are (a) the development of the feed-on sector and (b) further development of export markets for Indonesian-processed meats.

5.1 Regional Demand

It is noted that Indonesia is strategically located among a number of countries with growing demand for beef. Beef consumption in Asia currently accounts for about one-third of total world beef consumption which is the largest of any single geographic region. Moreover, the compound annual growth rate (CAGR) of beef consumption in Asia over the past decade has been among the fastest of any region in the world. Figure 5 below indicates the scale of this growth.

Figure 5 – World Beef Consumption by Region

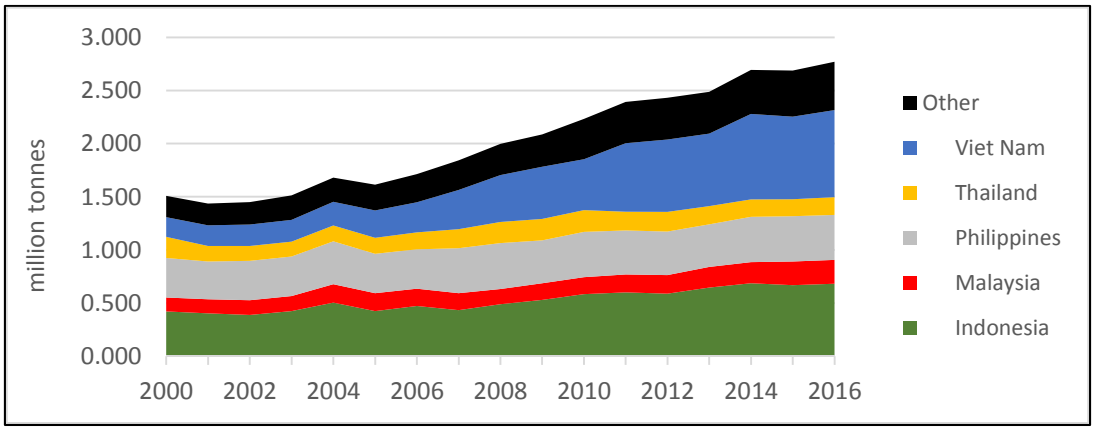


Source: FAO, FAO/OECD forecasts

While much of this can be attributed to growth in beef consumption in China, the CAGR of beef consumption in SE Asia has also been significant at over 4% p.a. over the past decade. Individual SE Asian markets that have been experiencing consistent growth in beef consumption include Indonesia

itself with a CAGR of 5.2%, Viet Nam and Malaysia. In fact Indonesia represents about 25% of all beef consumed in SE Asia. This is shown in Figure 6 below.

Figure 6 - Beef Consumption across South East Asia (cw)



Source: FAO, FAO/OECD forecasts

Caution is advised in looking at historical and projected trends for Viet Nam beef imports because, while there is strong consumer demand for this product, Viet Nam is also regarded as a transit point for Indian carabeef traded into China through the grey channel. Some estimates suggest this trade could represent as much as two-thirds of beef imports into Viet Nam.

The other country to perform strongly in terms of beef consumption growth has been Malaysia (CAGR in beef consumption over the past decade of 3.8% to account for about 8% of the region's total beef consumption in 2016). The Philippines, although experiencing little growth in total beef consumption over the past decade, still accounts for 15% of the region's beef consumption. The FAO/OECD have forecast that over the next decade, the CAGR for beef consumption in Indonesia will be 2.6%, in Malaysia 1.7% and 1.3% in Viet Nam and in the Philippines.

The desktop study concluded, among other points, that the Indonesian domestic market itself is one of the more attractive beef markets in the world, with excellent prospects for growth off a sound base and an expanding middle class. Moreover, consumer preference for locally processed beef is likely to develop, particularly if Indonesian processors become more responsive to features of domestic demand. The sheer size of the Indonesian market can be depicted as every bit as rewarding and attractive as a theoretical export market, without the challenges of tariffs, labelling requirements and market intricacies. It was also noted that the OECD/FAO forecasts indicate only four other countries (Ethiopia, Mozambique, Tanzania and Zambia) with beef consumption growth rates higher than Indonesia's. But these four countries all have lower levels of per capita beef consumption – starting off a far lower base – than Indonesia, therefore the expected absolute growth in beef consumption in these four markets can be expected to be less than that in Indonesia.

5.2 Competition in Regional Export Markets

The main beef suppliers into the SE Asian region are currently Australia, Brazil, India and United States with smaller volumes supplied from New Zealand and other countries. A hierarchy exists among these suppliers based on the type of beef produced (whether grainfed or grassfed) as well as the end-use and market disposition towards country of origin. This section briefly looks at competing beef suppliers as well as price points.

Using global pricing and volume data for 2016 from Comtrade and other sources, and bearing in mind that there can be a different mix of cuts exported by each supplying country, it is possible to draw several conclusions about the position of competing suppliers. In terms of frozen boneless beef (the main category of beef traded worldwide), US products (which are almost all grain-fed) attracts between 25%-30% premium over beef from Australia, which in turn attracts a 14% premium compared to beef from Brazil. Beef from Brazil globally attracts about a 25% to 35% premium compared to carabeef from India. There is a similar hierarchy for chilled boneless beef, however,

Australian and US supplies have generally sold for broadly similar prices and there is only limited competition from other contenders (including Brazil and India) in worldwide chilled beef sales.

In Malaysia and Viet Nam import markets, India is the predominant supplier and this product is found in wet markets, food service, small butchers' shops and also in modern retail settings. In the Philippines, India remains the single largest supplier of imported beef although there are several laws which legally restrict sales of this product to manufacturing uses. In terms of beef imports into Viet Nam, as stated earlier, this market sector is dominated by Indian buffalo meat although there is Australian and US product to be found at the higher end of the market in modern retail and superior food service uses. Both these market channels are expanding rapidly in Viet Nam and they require rigorous quality assurance programs on the part of their international suppliers.

In summary, cheap buffalo meat supplies from India tend to dominate meat imports into the South East Asian region. However, Australian and US exporters have shown that it is still possible to compete against these cheaper suppliers with higher-priced products and in different market segments that are concerned with food safety, traceability, provenance and product consistency. If Indonesian beef is to be exported into SE Asian markets, using Australian-sourced supplies (whether live cattle, quarter beef or manufactured product), it will be essential that this beef be capable of achieving price premiums over Indian buffalo meat or it will have negligible impact in terms of sales.

5.3 Potential Export Markets

To the extent there should be an export focus by Indonesian beef processors, the focus should be on neighbouring countries. In recent times the growth in beef consumption across South East Asia has exceeded that of any other world region and strong growth will continue for at least another decade. Part of this growth will be fuelled by beef imports. Beef imports into Malaysia, the Philippines and Viet Nam are expected to grow by more than 350,000 tonnes (cwt) over the next decade, with these three countries occupying almost 20% of the total growth in the world beef trade. With the extent of growth expected in neighbouring countries, it makes sense for Indonesian beef processors to focus any export effort on these countries. There is also some commonality in cuisines and customs between Indonesia and neighbouring countries which will lower the hurdles which have to be confronted in export markets.

5.3.1 Short-lived tariff advantages

The desktop study concluded that beef exports from Indonesia could be eligible for some tariff concessions to specific Asian markets, including China, compared to Australian-sourced beef exports. This is due to Indonesia being a member of the ASEAN community, and thus eligible for zero-rated tariffs for exports of boneless beef to destinations such as Singapore, Brunei, Cambodia, Lao, Myanmar, Viet Nam, the Philippines and China (due to trade agreements between ASEAN and China), while Australia is not part of the ASEAN community. However, the tariff differences are mostly quite small and will be eroded or eliminated altogether when AANZFTA tariff reductions are progressively applied, mostly by 2021. Moreover, most of the lower tariff arrangements are conditional on meeting rules about country of origin and degree of transformation, so that Indonesian-raised beef would likely meet the tariff classification, whereas product imported into Indonesia (from Australia, for example), then deboned and re-exported may not qualify for the lower tariff. This area could benefit from further investigation but prima facie the lower tariffs currently available for Indonesian beef exports to neighbouring ASEAN countries will likely be short-lived alongside supplies from Australia and New Zealand in the near future. With regard to exports to China, Indonesia will have a 7% tariff advantage over Australia until 2024, however, as previously noted, China's market access requirements are exacting, necessitating approval of individual plants by Chinese authorities and can take up to two years to formalise once a protocol has been concluded.

There are also a range of non-tariff impediments which should be considered for specific markets: these include the need for import licenses (Myanmar) and requirements for inspection of individual shipments (Thailand); all of which can greatly complicate exporting companies' efforts to gain a foothold in an already competitive marketplace. On the positive side, Indonesia is recognised by the

OIE as being FMD-free: this situation would provide a strong starting point in starting to gain market access to various countries for beef products.

5.4 Beef Exports from Australia

For the purposes of the study it was decided to identify some markets that could ostensibly show demand for beef processed in Indonesia from Australian cattle. These are circled in green in Figure 7 and include China, Taiwan, Philippines, Saudi Arabia, Malaysia, Dubai, Singapore, Thailand, Viet Nam, Hong Kong and Papua New Guinea. (Note that USA, Japan and South Korea were excluded from consideration because of the length of time it could potentially take to achieve approval to export to these three markets; these are considered 'mature' markets that are not expected to grow in volume over time; and are already accepting large quantities of Australian and New Zealand products i.e. Indonesian product would be competing with dominant market leaders supplying similar products.) Most of these target markets are classified as growing markets because beef imports have increased over the past decade and population growth rates also suggest a positive outlook for future demand (see more details in Annex 5) also having anticipated growth in disposable income.

Australia exports beef to approximately 100 different markets, however, the volumes per market falls considerably after the Top 5 destinations. Each of the five largest markets - USA, Japan, South Korea, China and Indonesia - normally takes over 50,000 tonnes shipped weight/annum from Australia, as shown in Figure 7.

Figure 7 - Top 20 Markets for Australian Beef

Source: MLA Market Statistics

Figure 8 and Figure 9 provide information on Australian beef exports to the markets indicated above in the form of chilled and frozen exports broken down into Pack-type: this provides a picture of export of higher quality primal cuts versus secondary cuts and manufacturing products which is relevant to

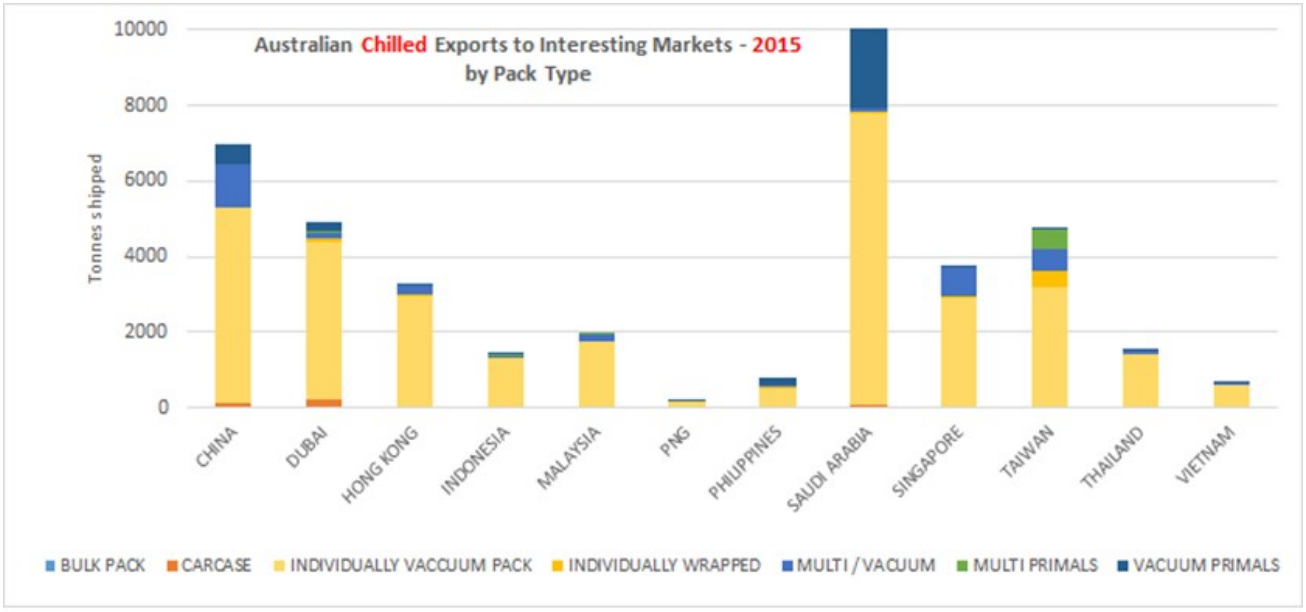
the business concepts identified earlier in Chapter 3. The charts show that chilled beef markets are dominated by individually vacuum-packed primal cuts and that the market sizes for chilled product in total are between 2,000 and 10,000 tonnes/annum.

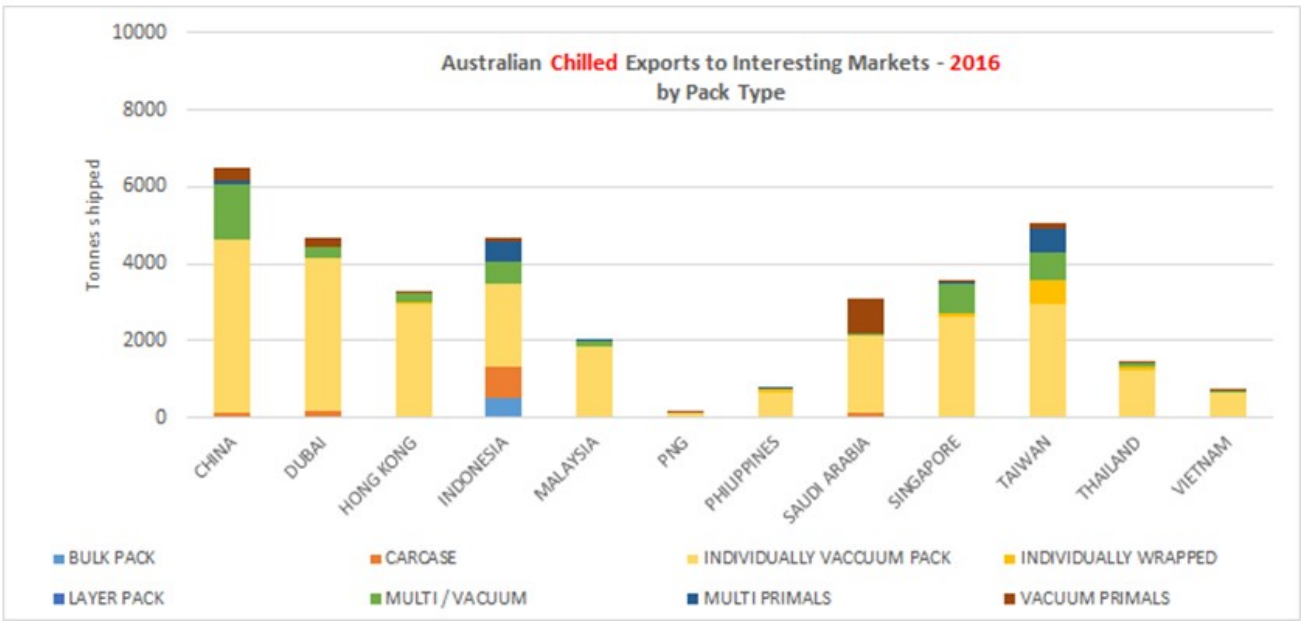
Figure 9 shows that Bulk Pack is the most important component of the frozen beef market to Indonesia, but not necessarily to all other markets. This has a potential impact on the type of business model for the bonded zone. Markets like China actually take a considerable amount of frozen product in the form of individually vacuum packed, individually wrapped and layer packed product, not in bulk pack. This is a common strategy for developing markets because the frozen product can be handled throughout the cold chain with a long shelf life, compared to a chilled cold chain which must be well controlled and has only a relatively short shelf life.

What is important is that there is a considerable difference in most markets with regard to the beef products delivered in chilled and frozen form:

- **Chilled Beef Products** – Are dominated by premium value individually vacuum packed primal cuts
- **Frozen Beef Products** – Are dominated by manufacturing packs and secondary primal cuts.

Figure 8 - Australian Chilled Exports by Pack Type (2015 and 2016)





Source: Export Cuts Database

Figure 9 - Australian Frozen Exports by Pack Type (2015 and 2016)

Source: Export Cuts Database

Due to the differences in product types there is also a significant price differential between products supplied in chilled form and in frozen form as shown in Table 4 and Table 5).

Table 4 - Unit Prices for Chilled Beef Products Exported from Australia

	CHILLED BEEF PRODUCTS ($US/kg)							
	Malaysia	China	Philippines	Singapore	Vietnam	Saudi Arabia	UAE	Thailand
2012	$11.03	$10.40	$7.18	$10.77	$10.38	$6.49	$9.41	$15.42
2013	$9.25	$5.49	$5.94	$10.87	$8.67	$5.03	$9.17	$12.99
2014	$10.59	$6.62	$5.98	$10.67	$9.19	$5.71	$8.78	$12.28
2015	$10.49	$6.51	$6.16	$10.10	$9.07	$6.50	$9.37	$12.03
2016	$11.80	$8.42	$6.67	$11.39	$10.63	$7.49	$10.55	$14.94
Average	$10.63	$7.49	$6.38	$10.76	$9.59	$6.24	$9.46	$13.53

Source: UN Comtrade Database

Table 5 - Unit Prices for Frozen Beef Products Exported from Australia

	FROZEN BEEF PRODUCTS ($US/kg)							
	Malaysia	China	Philippines	Singapore	Vietnam	Saudi Arabia	UAE	Thailand
2012	$3.22	$3.84	$2.92	$3.92	$5.41	$3.28	$4.31	$6.70
2013	$3.21	$4.34	$2.92	$4.14	$4.07	$4.29	$4.56	$5.69
2014	$3.83	$4.42	$3.50	$4.28	$3.53	$4.37	$4.69	$5.79
2015	$3.11	$4.77	$3.03	$3.18	$3.45	$4.63	$4.08	$5.58
2016	$3.14	$4.67	$2.94	$3.41	$3.13	$4.77	$3.27	$5.63
Average	$3.30	$4.41	$3.06	$3.79	$3.92	$4.27	$4.18	$5.88

Source: UN Comtrade Database

It can be observed from these tables that chilled cuts (dominated by individually wrapped premium primals) fetch in the region of USD8-12/kg while frozen product, dominated by secondary cuts and manufacturing beef, fetch far lower returns in the region of USD4-6/kg.

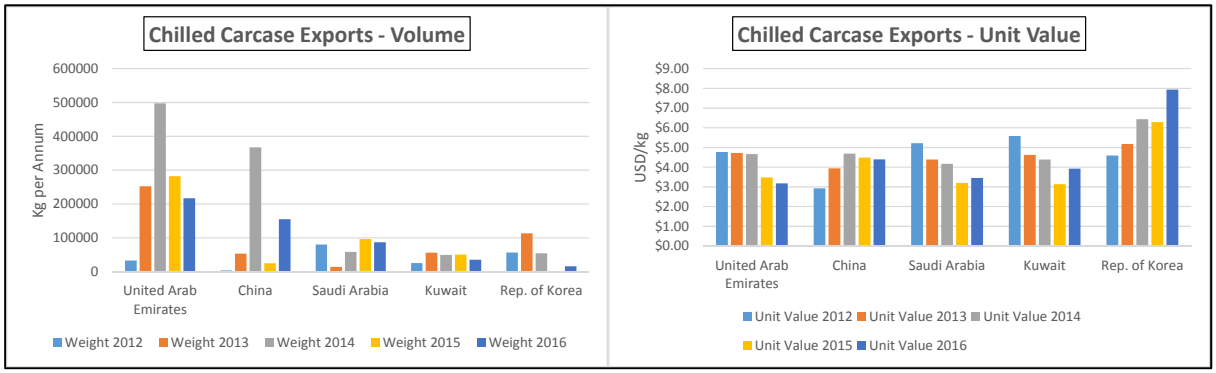
This section of the report has therefore explored what type of products and in what form these markets of interest are currently taking and the relative price levels across the board.

5.4.1 Bone-In Carcase Exports

A possible business concept for the BZ in Indonesia would be to initially establish a facility that imports bone-in carcase beef and then processes the carcase into primal cuts and manufacturing beef products for re-export to third country markets like those discussed above. The value and volume of bone-in carcase beef from Australia is therefore of interest.

Figure 10 (Chilled) and Figure 11 (Frozen) provide profiles for the five biggest export destinations for carcase exports in chilled and frozen form over the past five years. The UAE and China are the largest markets by volume but Korea normally is the highest-priced market for this product, paying a premium of up to USD/3kg most years over other markets.

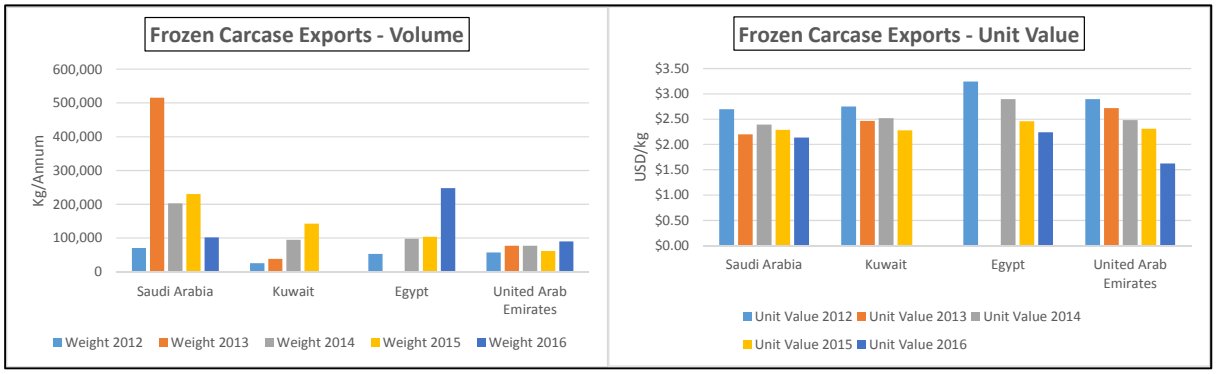
Figure 10 – Chilled Carcase Volumes and Unit Values



Source: UN Comtrade Database

It can be observed that the volumes for both chilled and frozen carcases are only a few hundred tonnes/annum and are quite volatile, varying significantly on a year on year basis. This would normally indicate supply into a spot market rather than meeting a longer term market demand. Overall, exports of bone-in quarter beef are less than 3% of total beef exports per annum and represent unrealised value adding for Australian processors in the form of chilled and frozen boneless primals and manufacturing packs.

Figure 11 - Frozen Carcase Volumes and Unit Values



Source: UN Comtrade Database

Nevertheless it is important to consider the price profiles.

- Frozen carcase product will be delivered by sea-freight and is generally in the range of USD2.00-3.00/kg.
- Chilled carcase product will almost always be delivered by airfreight and this can be seen in the price which is in the range of USD4.00-6.00/kg significantly higher than the frozen price as would be expected.
- There will of course also be price variations based on carcase specification (weight, age, condition, etc).

6 Australian Beef Processing Industry Metrics

This section of the report provides processing metrics for utilities, co-products and beef product yields. These factors all help determine the competitiveness of a beef operation. Some mid-range productivity and cost data for Australian businesses is provided in Table 6 to provide reference data to compare with a beef supply chain that involves processing Australian beef products in Indonesia. These have been calculated from ProAnd Associates' costs benchmarking database.

Table 6 suggests that a mid-range productivity index for combined slaughter, deboning and overhead labour is in the order of 1.8 head of cattle per man per day (this is for an integrated plant, similar to what the Indonesian concept plant would be). This yields an estimated labour cost of $A250 per head in addition to other costs such as packaging/utilities and other direct costs.

Table 6 – Australian Beef Processing Metrics

AUSTRALIAN SLAUGHTER & BONING PRODUCTIVITY		
Australian Slaughter Labour Productivity	6.6	Head/man day
Australian Boning Labour Productivity	3.5	Head/man day
Overall Integrated Plant Labour Productivity (inc Overhead labour)	1.8	Head/man day
AUSTRALIAN SLAUGHTER & BONING LABOUR COSTS		
Overall Integrated Plant Labour Cost (inc Overhead labour)	$250.00	$A/head
OTHER DIRECT COSTS EXCLUDING LABOUR		
Consumables	$0.15	$A/kg CW
Utilities	$0.13	$A/kg CW
Other Costs	$0.22	$A/kg CW

Source: ProAnd Benchmark Data

6.1 Utilities

Water, electricity and fuel are also extremely important to producing beef for export:

- Considerable amounts of water are required to meet the hygiene expectations of importers;

- Significant electricity is required principally for product refrigeration but also for processing equipment;
- Fuel is needed to produce hot water which is also required to meet the hygiene expectations of importers; fuel is also used in Australia to provide steam for rendering plants (waste heat from rendering is recovered to produce hot water).

In order to meet export customer expectations it would be expected that a processing operation in Indonesia would consume similar quantities of water, electricity and fuel as an Australian beef processing operation. Data for expected usage is presented at Table 36 in Annex 7.

6.2 Co-Products

Co-products make a very important contribution to beef processing in all processing businesses. Co-products include:

- **Offals** – Both red (thoracic) and white (abdominal) offal items. Current ruling prices for offal items are provided in Table 35 and trends over the past two years in Figure 50 in Annex 7.
- **Hides** – Prices vary considerably by quality (animal age and grain damage). Figure 52 provides current hide price trends. Depending on quality hide prices it can be seen that values vary by as much as $20-30/hide.
- **Rendered Products** – Whatever remains is converted to protein meal and tallow. Figure 51 provides trends in prices for meatmeal, bloodmeal and tallow over the past 12 months.
- **Fat and Bone** – While there has been significant growth in packing of bone for sale into export markets in recent years in Australia, most is directed to the rendering plant. However in Indonesia most fat and bone is able to be sold fresh into the wet market at a considerably better price than achieved for rendering raw material. This provides the driver for improved returns from co-products in Indonesia.

Most processing plants in Australia produce Halal compliant products and this provides the opportunity to optimise offal prices across all potential destination markets.

Co-product returns/head therefore vary considerably. Table 34 provides typical low and high co-product values for Australia beef processing operations. Values/head vary from a low of around AUD200/head to a typical high of AUD245/head. Further information on co-products values can be found at Table 36 in Annex 7.

6.3 Beef Product Yields

In order to be able to make estimates of product volumes by product type it is useful to categorise beef products into premium primals, secondary primals, manufacturing, fat and bone.

Figure 12 provides a list of primal cuts included in Premium primals and those included in Secondary primals.

Figure 13 provides yield information based on categorisation into Premium and Secondary Primals, and Manufacturing beef.

Figure 12 - Primal Cut Categorisation

Figure 13 – Cuts Yield

Approx Yields	% of Carcase Weight
Premium Primals	**12.6%**
Secondary Primals	**16.2%**
Manufacturing	**27.6%**
Fat	**22.1%**
Bone	**19.4%**
Shrinkage	**2.0%**
	100.0%

Source: ProAnd Benchmark Data

7 Investment Benefits and Competitive Drivers

7.1 Advantages of Establishment of BPBZ's for the Indonesian Government

The purpose of the establishment of special, free trade and bonded zones are to attract new investment, create economic growth and expand employment opportunities. There is also generally a desire to introduce new processes and technology in order to build capacity in the local economy. Essentially that is what Indonesia desires to occur through the establishment of the various economic, free trade and bonded zones that it encourages.

The establishment of feedlot and meat processing operations in a bonded zone (KB) would not only contribute to economic growth and employment but would also promote the development of meat processing technology and management systems in compliance with international standards.

Current meat processing operations supplying the domestic market are constrained from progressing to greater compliance with international standards due to the extra costs involved which would make the plant non-competitive when supplying the domestic market.

The encouragement of export compliant meat processing in a bonded zone (KB) would not only promote investment, economic growth and employment but also provides an opportunity for Indonesia to:

- Introduce a step change in meat processing technology towards achievement of international processing standards;
- Provide demonstration and training capacity for other potential new feedlot and meat processing investors;
- Improve the international perception of meat processing capabilities in Indonesia;
- Provide an opportunity to export premium value primals at a higher price than would be able to be realised in Indonesia subsequently allowing the remaining meat to be sold into the domestic market at a more competitive price.

Benefits from operating within a KB would in part assist to overcome the constraint associated with higher processing costs associated with meeting international processing standards.

7.2 Capacity and Challenges to Supply Prospective Export Markets

The Indonesian beef industry in relation to the potential to export to other markets has:

A **demonstrated** capacity to:

- Import live cattle;
- Feed live cattle with agricultural by-products;
- Comply with ESCAS slaughter requirements for cattle sourced from Australia;
- Produce a variety of further processed meat products (eg bakso balls, sausages, hamburger patties, etc).

Potential **advantages** associated with:

- Lower cost feed rations due to the availability and use of both off farm and ex agri-business agricultural by-products;
- Relatively inexpensive labour costs (especially compared to developed economies such as Australia);
- Obtaining higher values for fifth quarter and co-products due to the ability to supply fresh product (including all slaughter floor items such as heads, hooves, red and white offal and boning residue such as fat and bones) to the domestic market.

An **emerging** capacity to:

- Bone carcases to supply meat to the formal retail and food service sectors.
- A **lack of** capacity to:

- Access export markets due to absence of country to country biosecurity/phyto-sanitary agreements;
- Process to basic export standards due to the extra costs involved which will make the plant less competitive for supply to the domestic market.

The **challenges** associated with this scenario include:

- The need and likely timeframe required for the public sector (particularly the Ministry of Agriculture) to establish country to country veterinary protocols when the current priorities are focussed on food security and self-sufficiency;
- The ability of the beef processing sector to construct and operate a more costly export processing facility for the period of time necessary to establish compliance credentials and gain approval to export to destinations which have country to country veterinary protocols agreed.
- Establishment of which beef products derived from the complex slaughter and boning disassembly process can be competitively exported (likely to be limited to premium cuts such as tenderloin, sirloin and cube roll).

The question that needs to be answered is therefore:

"What are the appropriate business environment settings for the beef processing industry that will encourage establishment of a slaughter and boning unit that is compliant with basic export standards?"

7.3 Business Environment Issues that need to be addressed in Indonesia

The establishment of BPBZs in Indonesia will require careful consideration of the current constraints and requirements that are associated with the establishment of an export compliant beef processing arrangement, in particular the issues associated with:

- The period required for a beef processing operation to be constructed and establish all the management and good manufacturing practices required to be able to comply with international standards (maybe 3 years);
- The period required to initially establish country to country veterinary protocols and subsequently conduct inspections' of plant operations with the aim of satisfying both the country and customer requirements of countries to which the product is intended to be exported (maybe 3-5 years);
- The period required to get products accepted by customers and to build product reputation and market penetration (likely 2-3 years after market entry – i.e. after approval obtained to enter the market);
- Addressing the likely inability of a compliant meat processing plant to meet the 50% export criteria required to operate within the current KB bonded zone arrangements due to the disassembly nature of the industry and the likelihood that only premium primals would be able to be exported;
- Clarification and establishment of certainty around issues associated with ambiguity and uncertainty in laws, regulations, and practices regarding Bonded Zones so that investments can be conducted with a degree of clarity of expectation and outcome.

Discussions in Indonesia indicated a willingness to consider a number of these issues. The preferred option to move forward would be for these issues to be progressed by BKPM in conjunction with the Coordinating Ministry for the Economy, and the Ministries of Trade, Industry and Agriculture to reach a level of agreement that would be able to be used to promote the establishment of internationally compliant beef processing operations in Indonesia.

7.4 Business Drivers for Processing Australian Cattle in Indonesia

The business driver for processing cattle in Indonesia can best be examined by considering the competitive position of processing cattle in Indonesia compared to processing similar cattle in Australia.

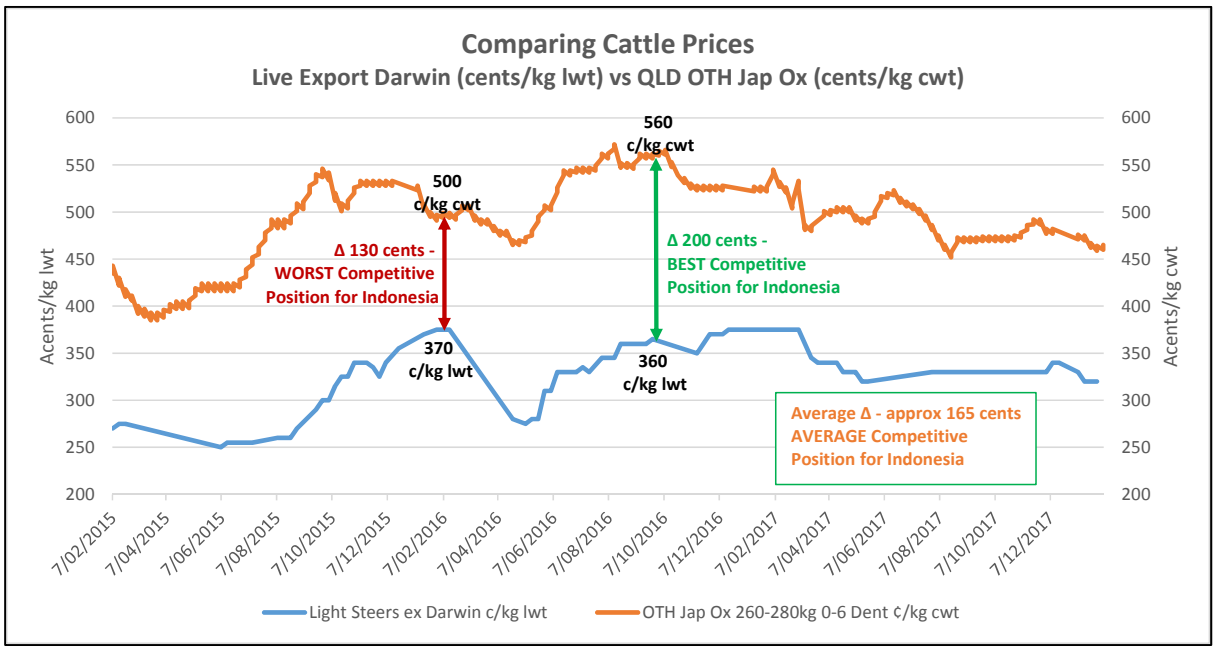
This can best be demonstrated through careful analysis of:

1. Establishing the relative cost positioning of the livestock as it enters the Australian abattoir
2. Taking into account any competitive advantages in Indonesia from reduced labour costs and improved returns the market gives for co-products.

7.4.1 Relative Livestock Costs

Due to the variety of agricultural co-products used in Indonesian feedlots it is considered that finished steers in Indonesia would produce similar quality meat to meat from the well grown Japanese Ox category in Australia. Figure 14 compares live export prices ex Darwin with Queensland over-the-hooks prices for Japanese Ox category of cattle in the weight range 260-280kg cwt over the past three years. The OTH price series represents the price of livestock delivered to a processing plant in Australia.

Figure 14 – Comparing Cattle Prices – Live Export vs QLD Over-the-Hooks



The competitive position for Indonesian finished cattle compared to cattle delivered to meat plants in Australia is:

- Low when the gap between the live export price and the Qld Japanese Ox price is smallest, and
- High when the gap between the live export price and the Qld Japanese Ox price is largest

Figure 14 shows the following metrics for the last three years:

- The BEST competitive position for Indonesian processing is when the gap between the live export price and Japanese Ox price is 200 cents/kg;
- The WORST competitive position for Indonesian processing is when the gap between the live export price and Japanese Ox price is 130 cents/kg;
- But the AVERAGE competitive position for Indonesian processing over the three years is a price gap between the live export price and Japanese Ox price of 165 cents/kg.

The size of the gap between the two data series in Figure 14 suggests that it is too great to be overcome simply by being able to utilise lower labour costs in Indonesia, feed availability and better returns from co-products; therefore the case for a business driver existing seems substantially weaker when these factors are taken into account.

The gap between prices is further confirmed when the Queensland OTH Japanese Ox price is compared with the price of a finished steer in Indonesia (see Figure 15) which demonstrates that a finished steer in Indonesia is worth between AUD2.50-3.50 per kg cwt more than a Japanese Ox delivered to a meatworks in Australia.

Figure 15 - Comparing Cattle Prices –QLD Over-the-Hooks vs Indonesian Finished Steer

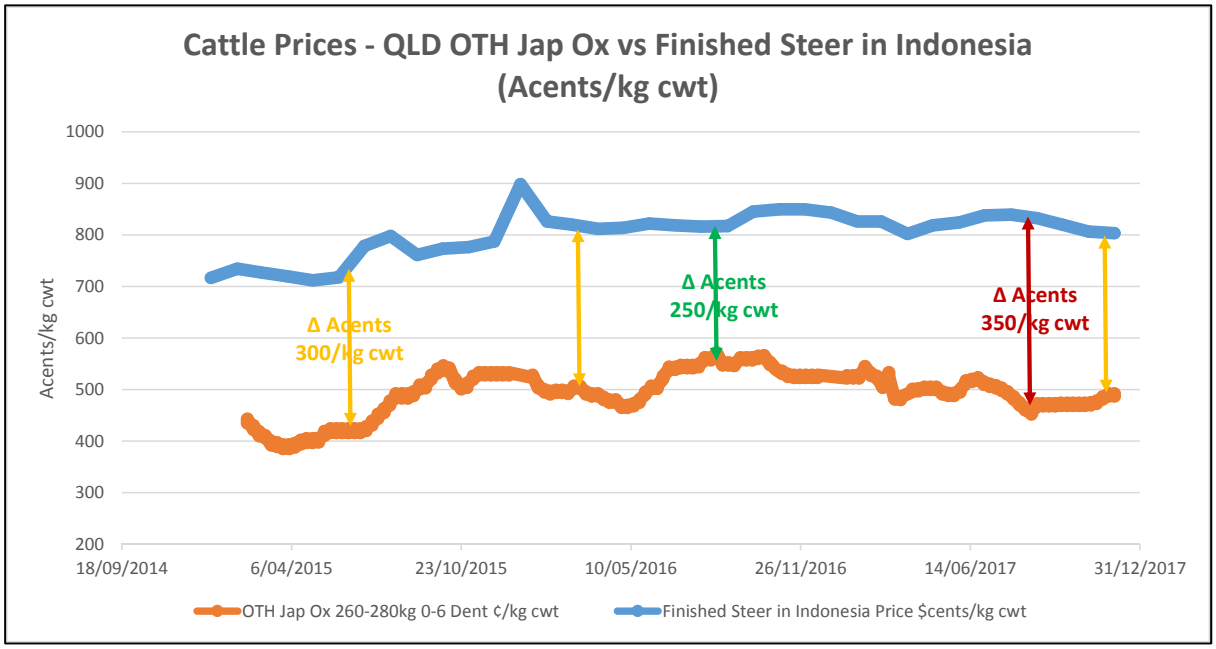


Figure 15 includes the impact of payment of duties and the feedlot margin and therefore the price gaps identified in Figure 14 have been used for the calculations in the remainder of this document.

7.4.2 Co-product Advantages

Field investigations and knowledge of returns for co-products in Australia combine to indicate that the co-product advantage in Indonesia is essentially due to being able to sell fat and bones from the boning process into the market and receive a price in the region of IDR20,000/kg (AUD2/kg) which is higher than this product is worth in most other markets.

Estimates of the Indonesian advantage are based on:

- Australian co-product returns between AUD200 and AUD245/head (see Table 34)
- Indonesian slaughter products based on IDR6,500 to IDR7,000/kg cwt (AUD0.65 to 0.75/kg cwt)
- Indonesian fat and bone selling for IDR20,000/kg (AUD2/kg)

7.4.3 Labour Advantages

Labour advantages are based on an assumption that:

- Australian labour only costs are in the region of AUD250-AUD280/head
- Indonesian processing costs are based on a plant running with sound capacity utilisation (better than 75% of capacity processed each day – a minimum expected for an Australian establishment), but recognising that labour productivity will be in the order of one-third of that achieved in Australian plants: overall integrated plant productivity of 1.5-1.8 head/day in Australia vs 0.5-0.6 head/day in Indonesia:

- **Slaughter:** Operating slaughter labour cost at 1 head/man/day and AUD425/man month plus a management and supervisor labour cost (at AUD3.5 head)
- **Boning:** Operating boning labour cost (at 1 head/man/day and AUD475/man month) plus a management and supervisor labour cost (at AUD6.5 head)

- Combined slaughter and boning labour costs in Indonesia on this basis are between $55 and $65/head.

7.4.4 Estimate of Competitive Position

Figure 16 provides a detailed competitive analysis of Indonesia Processing vs Australian Processing based on the details provided in the preceding paragraphs.

In summary the data in Figure 16 indicates that:

- At entry to the slaughter plant, cattle in Indonesia are already in the region of AUD402 to AUD631/head more expensive than similar livestock delivered to a slaughter plant in Australia;
- The competitive disadvantage or downside of processing cattle in Indonesia related to improved co-product returns is in the region of AUD$170-$205/head;
- The competitive advantage of processing cattle in Indonesia related to lower labour costs is in the region of AUD$187-$205/head;
- The overall outcome is that the co-product and labour advantages mentioned above are not sufficient to overcome the livestock cost disadvantage and:
  - A **BEST** case scenario indicates an overall cost disadvantage from feeding and processing Australian cattle in Indonesia in the order of AUD47/head (see column 3)
  - An **AVERAGE** case scenario indicates an overall cost disadvantage from feeding and processing Australian cattle in Indonesia in the order of AUD142/head (see column 4)
  - A **WORST** case scenario indicates an overall cost disadvantage from feeding and processing Australian cattle Indonesia in the order of AUD218/head (see column 5).

From this analysis it can be concluded that there is currently no business driver for the feeding, processing and export of the full range of products resulting from slaughtering and boning Australian cattle which have been feed finished in Indonesia.

This analysis does not however address a scenario where most of the beef from the slaughter and feeding disassembly process is delivered to the Indonesian market and only the higher priced primal cuts that are unable to fetch export equivalent prices in the domestic market are exported. In this scenario however only a small proportion of the products resulting from processing cattle would be competitively priced in the export market.

The advantage of exporting high value primals at prices above what they would receive in the domestic market is that the revenue for export sales could possibly be used to reduce the cost of the beef delivered to the domestic market.

Figure 16 - Competitive Analysis Indonesia Processing vs Australian Processing

		BEST Competitive Position	AVERAGE Competitive Position	WORST Competitive Position
Export Cattle Price in Australia				
Price	c/kgLW	320	320	320
Liveweight	kg	365	365	365
Cost Value	$/head	$1,168	$1,168	$1,168
Freight				
Shipping Cost	c/kgLW	80	80	80
Duties	c/kgLW	0	0	0
Other	c/kgLW	15	15	15
Total	c/kgLW	95	95	95
Cost Value	$/head	$347	$347	$347
Feeding				
Daily Cost	$/day	2.8	2.9	3.0
Days on Feed	day	100	100	100
Cost Value	$/head	280	290	300
Weight Gain				
ADG	kg/head/day	1.5	1.4	1.3
Weight Gain	kg	150	140	130
Finished Liveweight	kgLW	515	505	495
Indonesian Cost on Entry to Slaughter	$/head	$1,795	$1,805	$1,815
Indonesian Cost on Entry to Slaughter	$/kgLW	$3.48	$3.57	$3.67
Dressing Percent	%	52%	52%	52%
Carcase Weight	kg/head	267.8	262.6	257.4
Indonesian Cost on Entry to Slaughter	$/kgCWT	$6.70	$6.87	$7.05
Compare Australian Cost				
Price Delta (SEE GRAPH)	cents	**200**	**170**	**140**
QLD OTH Cattle Prices - Grown Steers 0-6 teeth - 260-280 CW	Acents/kgCWT	520	490	460
QLD OTH Cattle Prices - Grown Steers 0-6 teeth - 260-280 CW	$/head	$1,393	$1,287	$1,184
Difference between Indo and Aust Values	$/head	-$402	-$518	-$631
Coproduct Benefits versus Australia				
Australian Coproducts	$/Head	$245.00	$222.50	$200.00
Indonesian Coproducts				
Slaughter coproducts	$/Head	$174.07	$170.69	$180.18
Hide	$/Head	$65.00	$60.00	$55.00
Fat & Bone ex fabrication	$/Head	$176.75	$173.32	$169.88
TOTAL	$/Head	$415.82	$404.01	$405.06
Difference between Indo and Aust Values	$/head	$171	$182	$205
Operating Cost Benefits versus Australia				
Labour Australia	$/Head	$250.00	$265.00	$280.00
Labour Indonesia	$/Head	$55.00	$60.00	$65.00
Packaging Australia	$/Head	$32.14	$31.51	$38.61
Packaging Indonesia	$/Head	$42.85	$42.02	$46.33
Difference between Indo and Aust Values	$/head	$184	$194	$207
Overall Benefit/Loss to Indonesia over Australia	$/head	-$47	-$142	-$218

7.5 Scale of Business and Performance Projections

Perhaps the most important investment factor to consider when assessing an investment in the beef processing sector is scale and the most important factor for operating cost competitiveness is capacity utilisation.

In Australia the smallest export beef operations currently operating process in the region of 35-40 cattle/hour and generally work extended shift formats in order to achieve annual throughputs in the region of 100,000 head/annum and operate at capacity utilisation levels of better than 75%.

A spreadsheet has been prepared using the metrics and market prices provide throughout this document in order to make a preliminary estimate of the viability of an integrated feeding and processing business concept established in Indonesia. The spreadsheet covers feedlot capacities ranging from 5,000 head to 100,000 head. The spreadsheet is provided at Annex 1.

The following assumptions are used in the spreadsheet calculations:

- Feeder cattle import value into Indonesia – AUD1515/head delivered into the feedlot (based on delivery of a 365kg feeder at an Ex Darwin price of AUD3.20/kg lwt plus AUD0.95/kg lwt for transport and delivery to feedlot. See Figure 16 for reference).
- Feed costs of AUD290/head based on a feeding cost of IDR28,000 to 30,000/day for 100 days
- An Average Daily Gain of 1.4kg/day has been assumed.
- At breakeven this provides an indicator price for supply from the feedlot into the slaughter plant of AUD1,805/head.
- Slaughter labour productivity in Indonesia is expected to be 2 head/man/day – compared with 6.6 head/man/day in Australia (see Table 6) due to automation and high labour cost impact.
- Monthly labour employment rate in Indonesia is assumed to be AUD425/man-month for slaughter and AUD475/man-month for boning due to the higher skill level that boning requires).
- Other operating costs for slaughter, utilities and consumables are assumed to be similar to Australian plants as it will be necessary for the Indonesian plant to operate at a similar standard (see Table 6).
- Slaughter co-product revenues based on IDR6,500 (AUD0.65)/kg cwt – approx. AUD175/head plus AUD50/hide.
- This results in a breakeven value for transfer from slaughter to boning at AUD1,623/head.
- Boning labour productivity is expected to be 1head/man/day – compared to 3.5 head/man/day in Australia (see Table 6) due to automation and high labour cost impact.
- Other operating costs for the boning operation are assumed to be similar to Australian plants as it will be necessary for the Indonesian plant to operate at a similar standard (see Table 36).
- Consumables costs in Indonesia are expected to be marginally higher than in Australia (AUD0.15/kg cwt versus AUD0.12/kg cwt see Table 6) due to the higher cost of cartons in Indonesia.
- Finished products have been divided into Premium primals, Secondary primals, Manufacturing beef, Fat and Bone based on data provided in Figure 12 and Figure 13.
- Indicative prices for finished products have been deduced from Table 4 and Table 5.

It is considered that, in order to minimise the risk associated with an investment in feeding and processing for export in Indonesia, an appropriate level of scale would be:

- A Feedlot of 10,000 head capacity, and
- A meat processing operation of 15 head per hour or 110 head per day.
- Both these assumptions are in line with existing operations already in the market

Projections based on these assumptions for an integrated feeding and beef processing enterprise operating in Indonesia have been extracted from the spreadsheet model and are provided in Figure 17, Figure 18 and Figure 19 below.

Figure 17 – Feeding Projections

FEEDLOT		UNITS	
Number of Cattle in Feedlot		Number	**10,000**
Number of Days on feed		Days	100
Feedlot Cycles per Annum		Number	3
Cattle Produced for Slaughter per annum		Head/annum	30,000
Cattle Produced for Slaughter per week		Head/week	600
Cattle Produced for Slaughter per day		Head/day	120
Incoming Cattle Weight		Kg Lwt/head	360
Incoming Cattle Weight (at 360kg Live weight)		Tonnes/Annum	10,800
Outgoing Cattle Weight (ADG 1.4kg/day for 100 days)		Tonnes/Annum	15,000
Outgoing Cattle Weight		Kg Lwt/head	500
Added Live Animal Weight		Tonnes/Annum	4,200
Dry Weight Feed Requirment (at 3% mid weight)		Tonnes/Annum	39,000
APPROX BREAKEVEN OPERATING OUTCOME			
Standing Cattle Value (at AUD1650/head)		AUD million	16.5
Incoming Cattle Cost (at AUD1515/head)		AUD million/Annum	45.5
Feeding Cost (at AUD290/head)		AUD million/Annum	8.7
	Costs	AUD million/Annum	**54.2**
Outgoing Cattle Value (at AUD1805/head)		AUD million/Annum	**54.2**

Figure 18 – Slaughter Projections

SLAUGHTERHOUSE		UNITS	
Number of Cattle to Slaughter per Day		Head/day	120
Number of Cattle to Slaughter per Annum (over 250 days)			30,000
Slaughter Rate per Hour (8 hour Shift)		Head/hour	15
Dressing Percentage		%	52%
Average Carcase Weight		kg DW	260
Carcase Weight Produced daily		Tonnes/day	31.2
Carcase Weight Produced Annually		Tonnes/Annum	7,800
APPROX BREAKEVEN OPERATING OUTCOME			
Incoming Cattle value		AUD million/Annum	54.15
Operating slaughter labour cost (at 2 head/man/day and AUD425/man month)		AUD million/Annum	0.61
Management & Supervisor labour cost (at AUD3.5 head)		AUD million/Annum	0.11
Other Operating Costs (@Acents 5/kgCW for electricity, water, maintenance & overheads		AUD million/Annum	0.39
	Costs	AUD million/Annum	**55.26**
	Processing Cost	AUD/Head	**36.90**
Coproduct Sales (@ Rp6,500 (A$0.65)/kgcwt for red and white offals and other slaughter byproducts)		AUD million/Annum	5.07
Coproduct Sales (@ AUD50/hide)		AUD million/Annum	1.50
	Total Coproduct Revenue	AUD/Head	219
Carcase Sale to Boning (at Breakeven)		AUD million/Annum	48.69
Carcase Sale to Boning (at Breakeven)		AUD/Head	1,623

Figure 19 – Boning Projections

BONING FABRICATION	UNITS	
Carcases Processed	Head/day	120
Carcases Processed	Head/Annum	30,000
Carcase Weight Processed	kg/day	31,200
Carcase Weight Processed	Tonne/Annum	7,800
Premium Primals Produced	kg/day	3,900
Premium Primals Produced	Tonne/Annum	975
Secondary Primals Produced	kg/day	5,700
Secondary Primals Produced	Tonne/Annum	1,425
Manufacturing Produced	kg/day	9,200
Manufacturing Produced	Tonne/Annum	2,300
Fat Produced	kg/day	6,000
Fat Produced	Tonne/Annum	1,500
Bone Produced	kg/day	5,700
Bone Produced	Tonne/Annum	1,425
Losses (Shrinkage)	kg/day	620
Losses (Shrinkage)	Tonne/Annum	155
APPROX OPERATING OUTCOME		
Incoming Carcase value (from Slaughter)	AUD million/Annum	48.69
Operating labour cost (at 1 head/man/day and AUD475/man month)	AUD million/Annum	0.68
Management & Supervisor labour cost (at AUD6.5 head)	AUD million/Annum	0.20
Consumables costs (@Acents15/Kg cwt)	AUD million/Annum	1.17
Other Operating Costs (@ Acnets 20/kgCW for consumables, electricity, water, maintenance & overheads	AUD million/Annum	1.56
Costs	AUD million/Annum	**52.30**
Premium Primal Sales (at AUD15.50/kg FOB)	AUD million/Annum	15.11
Secondary Primal Sale (at AUD10.40/kg)	AUD million/Annum	14.82
Manufacturing Sales (at AUD5.20/kg)	AUD million/Annum	11.96
Fat & Bone Sales (at AUD2/kg)	AUD million/Annum	3.00
Revenue	AUD million/Annum	**44.89**
Profit/Loss		-7.40
Loss per head		-247

The data used in these calculations has been verified during the field visit and from discussions with businesses currently operating in Indonesia.

The projections form the spreadsheet indicate that if all the product from feeding and slaughtering in Indonesia was to be exported at similar prices to that achieved by Australian product on the export market then the overall outcome shows a loss of approximately AUD247/head. The conclusion from this detailed analysis is that the construction of a plant to feed, slaughter and bone Australian cattle in Indonesia with the intention of exporting all the product is not viable.

This loss can be basically attributed to the cattle entering the slaughterhouse being valued at AUD1,805/head while similar cattle are entering Australian meat processing plants at around AUD1,287/head (see Figure 16) and the competitive advantages associated with increased co-product revenue and decreased labour costs in Indonesia are insufficient to overcome the cost disadvantage on entry to slaughter of AUD518/head.

7.6 Alternative Scenario

An alternative scenario would be to feed Australian cattle in Indonesia, slaughter them in an export compliant facility and only export the high value primals. However this would lead to a situation where only a small proportion of the resulting product would be exported due to the fact that only about 13% of the beef carcase consists of high value primals (see typical carcase yield data in Figure 13).

From the numbers generated in the Spreadsheet at Annex 1 if only premium primals were exported then assuming all premium cuts were exported (an unlikely scenario), exported primals would represent:

- Around 13% of carcase weight
- Around 29% of total revenue
- Around 33% of the value of the imported cattle

If only 50% of premium primals were exported then exported primals would represent:

- Around 6% of carcase weight
- Around 14% of total revenue
- Around 16% of the value of the imported cattle

None of these scenarios come anywhere near the requirement for operations in KB Bonded Zones to export 50% of production.

It is therefore necessary that to encourage investment in an export compliant meat processing enterprise to be established in a KB Bonded Zone there needs to be clarification of what level of exports would be acceptable.

8 Indonesian Location and Investment Considerations

8.1 Location

The most important considerations regarding location of the enterprise include:

- **Logistics** – Including ease of importing cattle and chilled and frozen beef from Australia and exporting chilled and frozen beef by both air-freight for low volume chilled premium primals; and sea-freight for higher volume chilled and frozen products.
- **Cost of Feeding** – The enterprise needs to be positioned in a location where the cost of feeding is minimised.
- **Utilities** – Considerable quantities of water, electricity and fuel are required and the location should have good access to these utilities.

8.1.1 Logistics

Research indicates that there are currently five ports in Indonesia that can handle refrigerated containers (reefers). These are provided in Table 7. Realistically there are probably only two ports (Jakarta and Surabaya) that can handle volume.

Table 7 - Sea-Freight Locations

Port	Reefer Points
Tanjung Priok, Jakarta	>500
Tanjung Perak, Surabaya Port	>500
Port of Belawan	<100
Makassar Sulawesi	<100
Nusa Tenggara tengah	<10

Air-freight locations handling over 15,000 tonnes/annum are provided in Table 8. Again realistically there are only 3 locations (Jakarta, Medan City and Surabaya) that could handle significant international air-freight volumes.

Table 8 - Air-Freight Locations

Airport	Status	Location	Cargo (kg)
Soekarno-Hatta	International Airport	Jakarta, Java	288,410,185
Sentani	Domestic Airport	Jayapura, Papua	130,616,171
Sultan Hasanuddin	Domestic Airport	Makassar City, Sulawesi	52,491,364
Kuala Namu	International Airport	Medan City, North Sumartra	37,413,257
Hang Nadim	Domestic Airport	Batam City, Riau Archipelago	33,035,468
Juanda	International Airport	Surubaya, Java	31,763,155
Sultan Aji Muhammad Sulaiman(Sepinggan)	International Airport	Balikpapan City, East Kalimantan	25,926,867
NgurahRai	International Airport	Denpasar, Bali	17,680,795

From this scenario it appears that only two locations would be able to provide sound logistics support for a fully functional integrated feeding and beef processing enterprise - the Jakarta or Surabaya regions, with a third possible location at Medan City.

It is understood from private contacts that the most competitive feedlots in Indonesia are located in the Surabaya region due to access to competitive feed, however, this feed cost advantage is undermined by the costs associated with delivering beef product into more valuable markets in the large urban areas.

8.1.2 Site Selection

In order to select a suitable site for establishing an integrated cattle feeding and meat processing operation there are a number of site requirements that need to be considered:

General Requirements

- Minimal impact on the local community.
- Avoid conflict with natural environment issues.
- Comply with land use requirements.
- An all-round buffer zone of 500 metres from industry or commercial premises and a minimum buffer distance of 1000 metre from the nearest residence is recommended.
- Areas where there are noxious industries or processes that are likely to lead to the contamination of the meat product must be avoided.
- The site should be free of odours, smoke, ash, etc produced by other activities.
- Sites subject to stable atmospheric inversion should be avoided.
- Feedlots location should be distant enough to avoid problems such as flies, dust, odours, vermin, and pesticide residues in the meat processing operation.
- Soil types subject to large expansion and contraction should be avoided.
- Avoid rock that may interfere with excavation or drainage
- Sloped topography is preferable to allow a gravity transfer of solid and liquid waste from the feedlot and meat processing plant.
- The site should lend itself to construction of sound and separate drainage systems for process water, stormwater, and sanitary waste for both the feedlot and the meat processing operations.
- Sites subject to flooding should be avoided.
- The method of handling and disposal of any liquid, gas/odours and solid waste from the plant must be acceptable to the relevant national, provincial and local authorities and not constitute a hazard to the overall hygiene of the premises.
- Wastewater and runoff from the feedlot and wastewater from the meat processing plant may require on-site treatment and disposal by irrigation. Sufficient land is required for this purpose. After adequate treatment processes the wastewater may be irrigated onto fodder crops which could then be used to supplement the cattle feed ration.

Road Access

- Preferable for one boundary to be close to a sound sealed road for the delivery of livestock and the dispatch of finished product.
- The beef processing plant site should be located close to the road.

Waste Flow Streams

- Ability to handle process waste-water, storm-water and sanitary waste separately.
- Preferably storm-water would be collected and held in separate storage for mixing back with treated effluent prior to irrigation
- Sanitary waste to be disposed to sewer, if available, or treated in a septic tank with any overflow directed into the effluent treatment system

Water Supply

- An adequate supply of potable water must be available (guidelines are shown at Table 9).
- In-plant chlorination will likely be required to ensure potability at all times.
- Based upon stock washing, yard cleaning, apron/hand washing, sterilisers, process plant wash down and amenities cold, 43°C and 82°C water is required.

Table 9 - Potable water guidelines

Description	Level
Total Coliforms	None
Turbidity	5 NTU
Total Dissolved Solids	<500 mg/L good 500- 1000 mg/L acceptable >1000 mg/L unacceptable & causes scaling & corrosion
Sodium (Na)	>180 mg/L taste threshold 300 mg/L limit

- Hot water would preferably be produced from a Gas fired boiler with heat exchanger and circulated throughout the plant at 82°C delivery. Where 43°C water is required, the temperature would be adjusted to suit at point of use by back blending cold water.

Electricity Supply

- Electricity supply must be adequate to meet the anticipated peak demand.
- High voltage, 3 phase power should be available to a transformer on site. The transformer will feed directly to the main switchboard located adjacent to the plant room and from there reticulated to the plant.
- The electricity supply authorities need to be able to make sufficient electricity available at an acceptable connection charge and at competitive consumption prices.
- It is likely that back-up electricity generation will be required to minimise product loss in circumstance where supply is not available from the national supply grid.

Fuel Requirements

- Due to the low production of waste material it would be intended to use composting and incineration to treat solid waste material rather than rendering.
- Without the installation of rendering, fuel demand will be required to heat the potable water to, say, 90°C (deliver to sterilisers at 82°C) and for incineration.

Water Treatment, Storage and Disposal

- It is desirable the plant effluent be treated and disposed on-site.
- The treatment system should consist of three stages to allow anaerobic then aerobic and then maturation to take place.
- The treated effluent would then be disposed of by irrigation.

- In order to minimise the capacity of storage and tailings dam the site should be in an area of high evaporation and low rainfall.
- Irrigation site should slope to a common low point where a tailings dam can intercept runoff.
- The irrigation area must be harvestable in order to remove nitrogen in the crop or forage
- It is desirable that the water table under the irrigation site is at a depth greater than say 3 metres at all times in order to avoid ground water contamination from percolation of salt or nutrients from irrigation, or wet conditions.
- It is desirable to have access to further water for irrigation in order to maximise the crop growing potential of the high nitrogen levels of the treated effluent.

8.2 Projected Site Metrics

Based on the feedlot and meat processing plant scale as outlined in Section 7.5, some preliminary estimates can be made of the site requirements.

8.2.1 Feedlot

Land Area

- The area of a feedlot complex should be at least three times the pen area. The pen area is the maximum number of cattle multiplied by the stocking density. A 10,000 head feedlot at 15m^2/head requires 15ha of pens and the total feedlot complex would require about 45ha of land. Additional land will almost certainly be needed for effluent irrigation and some solid manure disposal, along with a buffer zone between the development and nearby sensitive receptors.

Water Supply

- As a guide, a feedlot would normally need access to approximately 24ML of high-security water/annum/1,000 SCU of feedlot capacity. A 10,000 head feedlot would require access to 240ML of water/annum. In addition to water for stock, this estimate includes water for the following purposes:
    - Dust suppression
    - Feed processing
    - Cattle wash down
    - General cleaning
    - Staff and office amenities.

Electricity

- A feedlot in itself is not a significant consumer of electricity, however if it is proposed to co-locate a feed-mill operation then this facility will require a significant quantity of electricity and potentially fuel for feed processing.

Fuel

- Diesel fuel will be required for feedlot machinery and for crop management and harvesting if this option is selected.

8.2.2 Beef Processing Plant

A concept drawing for a plant to slaughter and bone 15 cattle/hour is provided at Annex 8.

Land Area

- A beef processing complex to process 15 cattle/hour would require approximately 1-ha of land for the building. It would be recommended that, in order to provide adequate area for buffer zones around the site, an overall site for the processing plant should be in the order of 4-5-ha.

Water Supply

- A minimum water supply in the order of 1,500 litre/head processed should be planned. This is equivalent to a consumption of 45ML/annum.

Waste Water Disposal

- Assuming an irrigation disposal rate in the vicinity of 6ML/Ha/Annum then the area required for disposal of wastewater by irrigation would be 7.5Ha.

Electricity

- A 15 head/hour beef processing operation will have an electricity demand in the region of 500KVA to 750KVA. For planning purposes access to a minimum of 1000KVA should be investigated.

Table 10 – Summary of Projected Site Requirements

Feed lot	
Land	45-50Ha for feedlot
Water	240ML/annum
Electricity	Minimal
Meat Processing Plant	
Land	4-5 Ha for processing plant and 7-8Ha for waste-water treatment ponds and irrigation area
Water	45ML/annum
Electricity	500 to 750KVA with a consumption in the order of 3,500-5,000MwHrs/annum
Combined	
Land	60-65Ha
Water	285ML/annum
Electricity	500 to 750KVA with a consumption in the order of 3,500-5,000MwHrs/annum

8.2.3 Separate Site or Co-location

While it would be desirable for the feedlot and meat processing to be co-located, the reality in Indonesia would be that the feedlot needs to be in a rural area and an export oriented meat plant needs to be near good air and sea freight logistics.

The Bonded Zone regulations allow transfer of product between bonded zones so co-location is not required to access the benefits associated with operating in a bonded zone.

As an example a suggested scenario that could be feasible would involve:

- Establishing a bonded feedlot in central Java;
- Establishing the meat processing plant near Surubaya (eg at the JIIPE Industrial Estate located at Gresik)

The advantage of establishing the processing facility within an industrial estate such as the JIIPE site at Gresik is that many services including, utilities, transport logistics, shipping are provided as part of the estate.

8.3 Employment Projections

Table 11 provides an estimate of the likely employment impact that would result from operating a 10,000 head feedlot and a beef processing plant processing 110cattle/day into boneless beef products.

These projections indicate an overall employment impact of 215 persons on the assumptions that:

- The feedlot operation involves limited bulk handling and therefore a significant manual labour to provide feed and animal husbandry;

- A slaughter floor labour productivity of 2man/head/day
- A boning labour productivity of 1man/head/day.

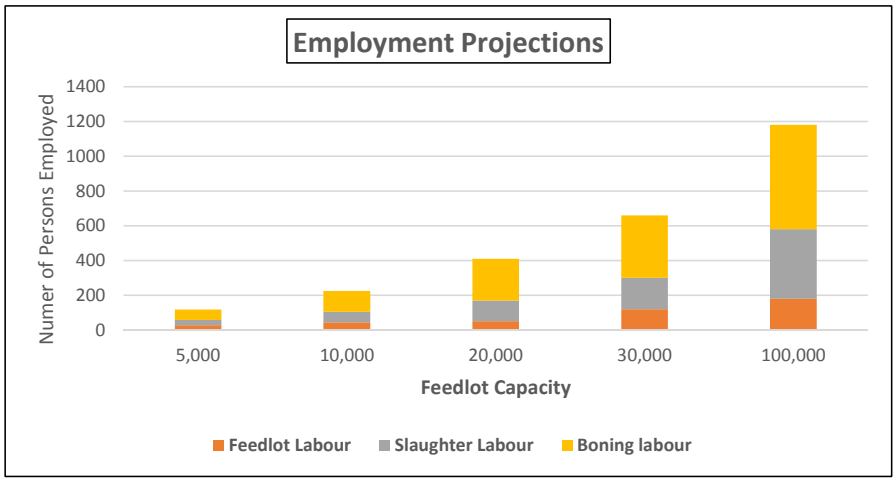
Table 11 – Employment Projections for 10,000 head Feedlot and 110cattle/day processing plant

	Labour	Management	TOTAL
Feedlot	45	5	50
Slaughterhouse	50	5	55
Boning operation	105	5	110
TOTAL	**200**	**15**	**215**

At bigger feedlot and meat processing plant sizes, labour productivity will improve as it becomes increasingly viable to install mechanical aids and bulk handling. An estimate of employment numbers based on the feedlot size and assuming that all the animals produced in the feedlot are slaughtered and processed into boneless beef is provided in Figure 20.

With a feedlot operation of 100,000 head capacity the overall employment involved in feeding, slaughtering and boning the cattle produced is estimated to exceed 1,000 persons.

Figure 20 – Employment Projections at Increasing Feedlot Size



8.4 Investment Projections

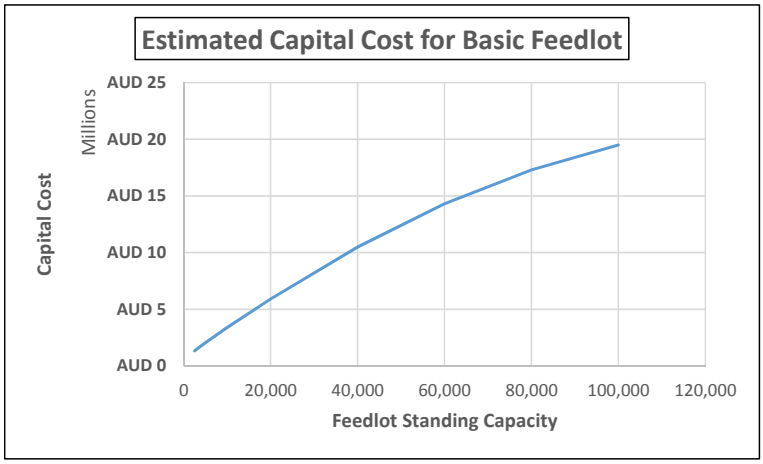
8.4.1 Feedlot Capital Cost

A feedlot with a capacity to stand 10,000 cattle would be expected to require an investment in the order of AUD3.5-4 million. This assumes a basic feedlot structure with cover over the feed troughs and feeding areas and portable mixer feeder units for mixing and distributing feed.

As the feedlot capacity increases the capital cost for each head of capacity tends to fall, however at some point it is generally viable to construct a feed-mill at the feedlot once the standing capacity goes over 30,000 cattle, however this will depend on the feed resources used. If a feed-mill is installed then the capital cost would increase significantly.

Figure 21 provides an indicative capital cost curve for the basic feedlot construction without allowing for investment in feed-mill operations.

Figure 21 – Indicative Capital Investment for Basic Feedlot Structure



8.4.2 Meat Processing Plant Capital Cost

It would be expected that the capital cost for a plant to process 15-17Cattle/hour would be in the region of AUD10 to AUD15 million. Table 12 provides an indication of the capital cost based on a 2,500m^2 building footprint (as indicated in Annex 8) and an overall capital cost for building, services, plant and equipment of AUD4,700/m^2.

Table 12 - Indicative Capital Investment for 15 Cattle/Hour Meat Processing Plant

Building Area	2500	m^2	
	Unit Cost	**Units**	**Capital Cost**
Building	1300	$/m^2	$3,250,000
Services	1500	$/m^2	$3,750,000
Plant & Equipment	1900	$/m^2	$4,750,000
Overall	**4700**	$/m^2	**$11,750,000**

8.4.3 Land Costs

8.4.3.1 Rural Land

Rural land costs are difficult to determine as they vary significantly depending on location and access to roads and services. The best estimates that could be obtained indicated costs between AUD10,000 and AUD20,000/acre, however it was not clear how well connected such land was with roads and services.

Table 13 provides an estimated range of land cost for an integrated site. While the feedlot may be able to be established on land of this value it is suspected that the meat plant would only be able to be located on much more expensive land in rural areas that had good access to roads, electricity and water.

Table 13 – Indicative Rural Land Cost

RURAL			
LAND COST	**Low**	**High**	
AUD/acre	$10,000	$20,000	
AUD/Ha	$25,000	$49,000	
LAND AREAS			
Feedlot Plot	45	50	**Hectares**
Meat Plant Plot	11	13	**Hectares**
Total	56	63	**Hectares**
LAND COST			
Feedlot Plot	$1,125,000	$2,450,000	**Hectares**
Meat Plant Plot	$275,000	$637,000	**Hectares**
Total	$1,400,000	$3,087,000	**Hectares**

NB: Feedlot plot estimate does not include an allowance for buffers between neighbours or land for effluent irrigation.

8.4.3.2 Industrial Estate Land

Land at the JIIPE Industrial Estate in Gresik is available for purchase. This land is fully serviced with roads electricity, water and waste treatment. The opportunity for industry is to purchase the land and build and operate the industrial facility without having to invest in ensuring that infrastructure services are fully reliable. JIIPE is also able to provide services that fast track investments through working directly with BKPM and KLIK arrangements.

Since all of this is provided the land is relatively expensive, however it comes with the possibility of guaranteed electricity supply which is critical to a beef processing plant to ensure refrigeration is continuously available in order to avoid stock write-downs. Land in the industrial estate is neither available for feeding cattle nor would it be economic.

While JIIPE is willing to negotiate the land on offer in the Estate is available on the following basis:

- Minimum plot size 5Ha (suitable for the meat processing plant);
- Price for freehold purchase for industry IDR2.2Million (AUD220)/m^2;
- Total cost for 5Ha - AUD11m.

8.4.4 Capital Investment Summary

Table 14 provides an estimate of the expected capital cost based on 2 scenarios:

1. Establishing on rural land
2. Establishing the feedlot on rural land and the meat processing plant on the JIIPE Industrial Estate in Gresik

Table 14 – Capital Investment Summary

	Scenario 1	Scenario 2	
Description	**Establish both Feedlot and Meat Plant on Rural land**	**Establish Feedlot on rural land and Meat Plant in JIIPE Industrial Estate**	
Rural Land Investment Cost	$3.0	$2.5	**$A million**
Investment Required to establish Infrastructure	unknown	$0.0	**$A million**
Industrial Estate Land Investment Cost		$11	**$A million**
Feedlot Investment	$3.5	$3.5	**$A million**
Meat Plant Investment	$12	$12	**$A million**
TOTAL	**$19**	**$29**	**$A million**
Rural Land Investment Cost	Rp30,000	Rp25,000	**Rp million**
Investment Required to establish Infrastructure	unknown	Rp0	**Rp million**
Industrial Estate Land Investment Cost		Rp110,000	**Rp million**
Feedlot Investment	Rp35,000	Rp35,000	**Rp million**
Meat Plant Investment	Rp120,000	Rp120,000	**Rp million**
TOTAL	**Rp185,000**	**Rp290,000**	**Rp million**

While the capital investment difference between Scenario 1 and 2 is significant, experience suggests that it is relatively easy to incur costs in excess of AUD10million (IDR100billion) to connect a rural site to roads, electricity and water supply.

9 Cost Benefit Analysis Cattle Production and Processing BLZ

The following section provides an analysis of costs and benefits of establishing a bonded logistics zone (BLZ) for cattle production and processing to inform investment and policy decisions.

9.1 BLZ Description

A BZ for cattle production and processing is described in detail above9.

Key components of the project include:

- Beef cattle feedlot – with 10,000 head capacity, turning off 30,000 head per annum.
- Slaughterhouse – with capacity to process total feedlot turnoff at approximately 15 head/hour.
- Boning operation – which converts whole carcases sourced from the slaughterhouse into premium primals, secondary primals, manufacturing product, fat and bone.

The project is described and evaluated as an integrated whole with each of the three components reliant on the other for supply and markets. All costs and benefits are expressed in Australian dollars. Export revenues are estimated on a Free on Board (FOB) basis and domestic revenues are estimated delivered to first point of sale.

9.2 Identification of Costs and Benefits

A summary of principal categories of costs and benefits from the project is shown in Table 15.

Table 15 – Cost and Benefit Categories

Costs	Benefits
Approval and planning costs	Gross revenue from product sales including beef of various grades, hides, heads, slaughterhouse offal, fat, bone and manure
Land for locating the feedlot in Central Java and the slaughterhouse and boning operation in coastal Surabaya	Contributions to the twin Indonesian Government policy goals of improved food security and beef self-sufficiency
Construction costs for the feedlot, slaughterhouse and boning operation	Jobs created in Central Java and Surabaya
Operating costs for the feedlot – cattle purchase, cattle delivery, feed purchase and feedlot labour and management labour	Infrastructure and transfer of technology to Indonesia
Operating costs for the slaughterhouse – cattle transport from feedlot, slaughter labour, management labour and other operating costs	Trade development including sales of beef to regional markets in ASEAN and other Asian countries
Operating costs for the boning operation – operating labour, management labour, consumables and other operating costs	Flow on opportunities for Indonesian businesses
Environmental and social costs associated with	Indonesian Government receipts including

Costs	Benefits
the project	company and wage taxes
Indonesian Government delayed receipt of tariffs on imported cattle	

Not all cost and benefit streams are quantified. Where quantification was not possible a description of the impact is provided.

9.3 Cost Analysis

9.3.1 Approval and planning costs

Government permits and licenses such as a location license and an industry licence will be required for both the Central Java feedlot and the Surabaya slaughterhouse and boning operation. Other permits include an environmental safety and waste management permit. Costs will be incurred in project design, project management, procurement and staff training. A total investment of $1.2 million incurred over three years has been estimated.

9.3.2 Land for Feedlot and Slaughter/Boning Facility

Land for a large feedlot will be required in Central Java as close as possible to sources of agricultural processing by-products with a reliable and high quality potable water supply. The site must have access to roads appropriate for the delivery and removal of live cattle. The feedlot site will need to be large enough to provide a buffer between livestock operations and neighbouring villages and be of sufficient size to dispose of effluent. A feedlot with 10,000 head capacity will require a complex area of 45 ha with additional land for effluent disposal (Peter Watts, MLA Feedlot Design Manual). A purchase cost of $5 million has been estimated.

In addition to the feedlot site a slaughterhouse and boning operation site in Surabaya is required. Although less land will be needed for the slaughterhouse boning operation, its unit value will be higher. The slaughterhouse boning operation site will require access to good quality services including electricity, water and roads and be within reasonable distance of the port. An estimate of $11 million was developed in Chapter 9.

9.3.3 Feedlot, Slaughterhouse and Boning Facility Construction Costs

Feedlots are less capital intensive in Indonesia than they are in Australia – milling for grain is not required nor are concrete systems designed for mechanised feed supply. A construction and equipment cost of $4 million has been allocated for the feedlot.

Slaughterhouse and boning operations require construction to a standard that will facilitate export certification by countries with an interest in beef supplied by Indonesia. Slaughterhouse and boning operation construction and fit out are costed at $15 million.

9.3.4 Cattle Purchase, Feed and Feedlot Labour Cost

Cattle are purchased from Australia and trucked to the large beef cattle feedlot in Central Java. A delivered price, based on an analysis of long term market data, of $1,515/head is used in the analysis.

Cattle require feed and labour is also needed to operate and manage the feedlot. This combined cost is estimated at $290/head.

Capital tied up in cattle and feed is the project's largest outlay. In the first year of operation when the feedlot has a relatively modest throughput of 2,500 head, the annual cost of cattle and feed is $4.5 million. By year 10 of the project, total capital invested in cattle is estimated at $45.5 million per year and total capital tied up in feed is estimated at $8.7 million per year.

9.3.5 Transport from Feedlot, Slaughter Labour, Management and Other Operating Costs

When feedlot cattle reach a target live weight of 500 kg they are road freighted from the feedlot to the slaughterhouse and boning operation at a cost of $10/head.

Slaughter labour is estimated at $20/head with slaughterhouse management and supervision labour costing an additional $3.50/head. Electricity, water, maintenance and other overheads were estimated at $0.05/CWkg (carcase weight kilogram).

9.3.6 Boning Facility Labour, Management and Consumables

Whole carcases pass from the slaughterhouse to the boning operation where they are disassembled into a range of primal cuts and by-products. Boning labour is estimated at $22.62/head with boning facility management and supervision labour costing an additional $6.50/head. Other consumables including wrapping plastics and cartons are estimated at $0.18/CWkg. Electricity, water, maintenance and other overheads were estimated at $0.20/CWkg (carcase weight kilogram).

9.4 Benefit Analysis

9.4.1 Gross Revenue from Product Sales

Revenue streams are received from all three components of the project. A small allowance is made for sale of manure from the feedlot to local farmers in Central Java and a rate $0.01/head is estimated with gross revenue of $300 per year when the feedlot is fully stocked.

Revenue is generated from the slaughterhouse and an estimate of $0.65/CWkg is made for red and white offals and other slaughter co-products. The hide is a high value item priced at $60 per beast.

Boning room products dominate project revenues. Per carcase production of each product and sale price FOB for export or delivered to first point of sale in Indonesia are shown in Table 17.

Table 16 – Carcase Breakup and Sale Price of Boning Room Products

Product category	Carcase breakup (%)	Price received ($/kg)
Premium primals	12.6	$15.50
Secondary primals	18.2	$10.40
Manufacturing beef	29.6	$5.20
Fat	19.1	$2.00
Bone	18.4	$2.00
Shrinkage	2.0	0
Total	**100.0**	

Carcase yield is estimated at 52% of live weight or 260kg per beast.

A ‘per head’ analysis of BLZ cattle production and processing revenue is shown in Table 18.

Table 17 – BLZ Cattle Production and Processing Revenues ($/head)

Revenue item	Price received ($/head)
Manure sales from feedlot	0.01
Slaughterhouse offals, etc.	169.00
Hide	60.00
Premium primals	507.78
Secondary primals	492.13
Manufacturing beef	400.19
Fat and bone	195.26
Total	**1,824.37**

By year 10 of the project, total throughput will be 30,000 head and revenue is estimated at $54.7 million per year.

9.5 Financial Analysis

A high-level financial analysis to provide preliminary information for investment decisions was prepared using the above cost and revenue estimates. Investment is assumed to begin in 2018-19 and a 30 year analysis period with a commercial discount rate of 12% has been used.

After 30 years of operation the project fails to breakeven. Net Present Value (NPV) is minus $42.6 million (Table 18) and the Internal Rate of Return (IRR) is negative. Even at a discount rate of zero, project costs exceed project benefits.

Table 18 – Financial Analysis Results

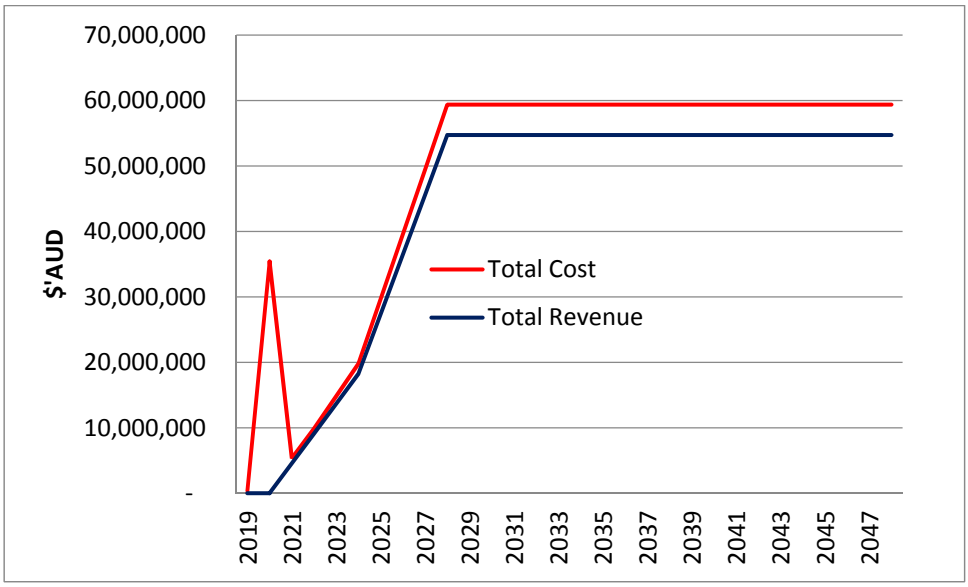
Discount rate	Present value costs ($'million)	Present value benefits ($'million)	NPV ($'million)	NPV (million Rupiah)
12%	266.3	218.9	-47.5	-507,300

NB: A 12% discount rate was selected assuming the 12-month JIBOR (the Indonesian equivalent of the London Interbank Offered Rate) is 6% and the country risk and equity risk premium add is 10%. Consequently with a 50:50 debt to equity ratio, the weighted average cost of capital is approximately 12%.

NBB: $A1 = 10,680 rupiah

An annual undiscounted benefit and cost cash flow for the BLZ for 30 years is shown in Figure 22.

Figure 22 -Annual Undiscounted Cash Flows



As presently specified the project is not a sound financial investment.

9.6 Cost Benefit Analysis Results and Sensitivity Testing

In addition to capital and operating costs and revenues, the project will generate a number of economic, social and environmental costs and benefits. These additional impacts are reviewed in this section and assessed as a social discount rate of 7%. This analysis was prepared to provide preliminary information to inform policy decisions.

9.6.1 Environmental and Social Costs

Large cattle production and processing facilities have the potential to create environmental and social costs. Environmental and social costs are more likely to occur in association with the proposed cattle feedlot located in Central Java than with the integrated slaughterhouse and boning operation in Surabaya. The feedlot will need to be integrated into a rural area most likely in close proximity to farms and villages. The slaughterhouse/boning operation will be located in an established industrial setting. Environmental costs associated with a large feedlot may include odour from manure and effluent, noise and road damage from a large number of truck movements. Social costs may also be associated with the relocation of established farmers and smallholders when land is purchased for the feedlot site.

9.6.2 Implications for Indonesian Government Revenue

By operating the project in a BLZ the Government of Indonesia will forego revenue from tariffs, VAT and excise duty on cattle imported from Australia and meat re-exported and delay receipt of these payments for meat sold on the domestic market. However, creation of a large scale business will generate both company and wage tax receipts for the Indonesian Government.

9.6.3 Food Security and Beef Self-Sufficiency Benefits

The project will make a small but positive contribution to the Indonesian Government's twin policy goals of food security and beef production self-sufficiency. Cattle feed purchased for the proposed feedlot will be mostly sourced from agricultural waste rather than tying up food production land to grow specialist fodder crops. Application of manure and effluent from the feedlot will add to the fertility of nearby agricultural land. Beef from the project will be directed toward both domestic and export markets. Co-products including hides, meat bones, fat and edible offals will be channelled onto domestic markets.

9.6.4 Job Creation in Indonesia

The project as currently specified and based on a 'steady state' cattle turnoff of 30,000 head per annum will generate a total of 215 jobs. Employment breakdown by project component and job type is shown in Table 20. Feedlot jobs will be located in rural Central Java.

Table 19 – Employment Created by the Cattle Production and Processing BLZ

	Operating labour	Management	Total
Feedlot	45	5	50
Slaughterhouse	50	5	55
Boning operation	105	5	110
Total	200	15	215

9.6.5 Infrastructure and Technology Transfer to Indonesia

The project will transfer feedlot infrastructure, modern slaughterhouse and boning room technology to Indonesia. Slaughterhouse and boning room design, including technology used, will be appropriate for securing export market certification and capable of meeting USDA and Halal requirements.

9.6.6 Trade Development

The project will provide a starting point for Indonesia's development as a beef exporting nation. Boxed beef from the BLZ will be directed into ASEAN and other Asian markets.

9.6.7 Flow on Opportunities for Indonesian Businesses

Opportunities for Indonesian business will include input suppliers such as trucking companies, crop processors (e.g. palm kernel meal, copra meal, cassava waste, rice hulls), growers of specialty crops

(e.g. maze chop), veterinarians, engineers, steel tube and sheet metal fabricators, fuel and oil distributers, refrigeration mechanics, cleaning contractors and wrapping plastic and carton manufacturers. Opportunities will also be created for marketing and value adding a range of project outputs including the tanning of cattle hides and the manufacture of leather goods, delivery, wholesaling and retailing of beef, meat bones, fat and edible offals.

9.6.8 Economic Appraisal Results and Sensitivity Testing

Economic appraisal builds on the financial analysis and considers social benefits and costs. Economic appraisal was completed over a 30 year analysis period with a social discount rate of 7%. Sensitivity testing was completed using social discount rates of 4% and 10% and results are summarised in Table 6.

Table 20 – Economic Appraisal Results

Discount rate	Present value costs ($'million)	Present value benefits ($'million)	NPV ($'million)	NPV (million rupiah)
4%	745.7	656.5	-89.3	-953,330
7%	485.4	418.3	-67.2	-717,342
10%	333.3	279.6	-53.7	-573,341

Unquantified benefits including beef self-sufficiency, employment and trade development would need to exceed NPV $67.2 million for the project to be considered compelling from a domestic perspective.

9.7 Impacts of the BLZ on Australia

The BLZ for cattle production and processing in Indonesia will have relatively few impacts on Australia. Impacts will include:

- Additional demand for Australian livestock – 30,000 head per annum accounting for less than 4% of Australia's total live beef cattle exports. Total live beef cattle exports to all destinations were 827,989 head in 2017 (LiveCorp website accessed February 2018). In economic terms this translates into additional producer profit and profit on allied economic activity generated over and above the next best market opportunity.
- Profit on sale of any equipment and services to the project including design and management expertise, feedlot, slaughterhouse and boning room buildings and equipment.

9.8 Conclusion on BLZ Viability

Analysis of costs and benefits of establishing a BLZ for cattle production and processing in Indonesia reveals that the project would be an unsound financial investment and could only be justified on policy grounds if beef self-sufficiency, employment and trade development benefits exceeded present value $67.2 million (717,696 million rupiah).

10 Way Forward

The analysis clearly establishes that:

- There is no significant business driver to establish a feedlot and meat processing plant in a KB Bonded Zone in compliance with the existing government requirement to export 50% of production; and
- The timeline from commencing construction to being able to export is likely to be 3-5years in order to establish country to country protocols, establish export compliant processes and procedures in the plant and obtain customer inspection and approval.

It is also clear and has been demonstrated that current beef processors are unlikely to move towards export compliant processing due to the extra costs involved. This does not preclude, however, the possibility that other players within Indonesia might find the prospect attractive to have an interest in an integrated beef production and processing business located within a bonded zone.

However, the opportunity of obtaining approval to develop export compliant processing in a KB Bonded Zone would:

- Assist the sector to overcome the current barrier to developing export compliance that results from increased cost with little benefit when delivering into the domestic market;
- Allow the export of premium primals cuts particularly to the countries identified in the market analysis;
- Since primal cuts would fetch a higher price on export markets than for domestic consumption the operator would have the opportunity to sell meat into the domestic market at a more competitive price;
- Provide demonstration of the capacity to operate an export compliant meat processing facility in Indonesia;
- Provide an export facility that can be used for demonstration for other operators and training for staff and management;
- Result in significant capital investment;
- Generate significant employment opportunities.

10.1 Pathway Step 1

The immediate task to be discussed by authorities in Indonesia is the application of the KB Bonded Zone requirements to the meat sector. The requirements need to be clearly established in order to create an environment that will be of interest for the private sector to make the necessary capital investment.

The issues that need to be clarified include:

1. The opportunity to establish feedlot and meat processing in separate bonded areas;
    - Recommend that separate facilities will provide better opportunities for investors
    - Clarify that the transport of finished animals from feedlots to processing plants, although located in separate BZs, can still be done under bond and without excessive delays or additional veterinary inspections.
2. Period required between commencing investment and export of compliant beef products;
    - Recommend that a minimum period of three years and possibly up to five years' operating in a KB Bonded zone be allowed prior to the expectation that any products will be exported.
    - Recommend that in the interim period the meat processing plant operator must operate the plant to the satisfaction of the Indonesian Ministry of Agriculture in compliance with basic export requirements.
    - Recommend that during the development period the Red Meat partnership assist in provision expertise to assist training of staff and management to meet export requirements, training of Ministry of Agriculture staff in compliance and auditing expertise and assistance in establishing country and customer compliance regimes.
3. The expectation of the proportion of finished product to be exported be based on the proportion of products that are likely to be competitive on the export market;
    - Recommended that the requirement be adjusted to apply based on 50% of premium primals produced as these are likely to be the only products that will be able to be competitively exported
      Note this would mean that 17% (50% of 34%) on a value basis and 10% (50% of 21%) on a volume basis of meat processing plant beef product production would be required to be exported to comply with KB bonded zone provisions (see bottom of Annex 1 spreadsheet)
4. The application of the feeder to breeder import requirement;
    - Recommend that the requirement to import breeding cattle as a proportion of feeder cattle be waived for an organisation established in KB Bonded zones.
5. Application of benefits available to KB Bonded zones;
    - Recommend that all benefits that are available to organisations established in KB Bonded Zones be available to operators who comply with the above requirements

It is considered that BKPM is the appropriate organisation to prosecute these arguments in discussion with:

- The Co-ordinating Ministry for the Economy,
- The Ministries of Agriculture, Trade and Industry,
- The Indonesian Chamber of Commerce, and
- Industry Representative Organisations.

At the conclusion of these negotiations there would need to be a decision made on whether to proceed to Pathway Step 2.

10.2 Pathway Step 2

It is highly likely that during the negotiations surrounding Pathway Step 1 a number of organisations could be identified that will have an interest in establishing feeding and meat processing in a KB Bonded Zone. There were already several organisations interviewed during the field work that would be likely to have an interest in a program that would assist the establishment of an export compliant facility to serve both the domestic and export markets. This might somehow complement their own individual investment portfolios although it may not prove the economic feasibility of a bonded processing zone.

Once Pathway Step 1 had been concluded there would be a need to:

- Confirm supplementary support that would be available from the Red meat partnership to assist the establishment of an export compliant facility in Indonesia;
    - Recommend that the Red Meat Partnership support the development with programs to:
        - Provide training for operator management and staff (perhaps including training in Australia);
        - Establish prerequisites for meat processing export compliance (eg establishment of slaughter and boning operating procedures, quality control practices, internal auditing procedures, etc);
        - Provide training for meat inspection services to meet export requirements in compliance with the demands of importing countries;
- Make the opportunity widely known;
    - Recommend proceeding through an Expression of Interest process that clearly defines for the investor the requirements and benefits associated with establishing cattle feeding and export meat processing within the KB Bonded Zone arrangements.

These steps may contribute in a minor way to improving the prospects for a bonded zone becoming financially attractive but in isolation they are considered not sufficient to change the balance of the modelling.

The study has not identified a compelling business driver for the establishment of a bonded zone for beef production and processing, nor has the financial modelling provided a means to make the business attractive even with a timeline to 30 years from establishment. The above options are presented in order to prepare the groundwork should there be (a) substantive change in government position about bonded zones' output to the local market (b) emergence of other factors which give cause to re-evaluate the economic feasibility of such a zone and (c) to fully ventilate further options for the Australia -Indonesia Red Meat Partnership.

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Annex 1 – Beef Processing Projections

The table on the following page sets out the preliminary beef processing projections for the proposed bonded zone.

PRELIMINARY BEEF PROCESSING PROJECTIONS

FEEDLOT	UNITS						
Number of Cattle in Feedlot	Number	5,000	7,000	10,000	25,000	50,000	100,000
Number of Days on feed	Days	100	100	100	100	100	100
Feedlot Cycles per Annum	Number	3	3	3	3	3	3
Cattle Produced for Slaughter per annum	Head/annum	15,000	21,000	30,000	75,000	150,000	300,000
Cattle Produced for Slaughter per week	Head/week	300	420	600	1,500	3,000	6,000
Cattle Produced for Slaughter per day	Head/day	60	84	120	300	600	1,200
Incoming Cattle Weight	Kg Lwt/head	360	360	360	360	360	360
Incoming Cattle Weight (at 360kg Live weight)	Tonnes/Annum	5,400	7,560	10,800	27,000	54,000	108,000
Outgoing Cattle Weight (ADG 1.4kg/day for 100 days)	Tonnes/Annum	7,500	10,500	15,000	37,500	75,000	150,000
Outgoing Cattle Weight	Kg Lwt/head	500	500	500	500	500	500
Added Live Animal Weight	Tonnes/Annum	2,100	2,940	4,200	10,500	21,000	42,000
Dry Weight Feed Requirment (at 3% mid weight)	Tonnes/Annum	19,000	27,000	39,000	97,000	194,000	387,000
APPROX BREAKEVEN OPERATING OUTCOME							
Standing Cattle Value (at AUD1650/head)	AUD million	8.3	11.6	16.5	41.3	82.5	165.0
Incoming Cattle Cost (at AUD1515/head)	AUD million/Annum	22.7	31.8	45.5	113.6	227.3	454.5
Feeding Cost (at AUD290/head)	AUD million/Annum	4.4	6.1	8.7	21.8	43.5	87.0
Costs	AUD million/Annum	**27.1**	**37.9**	**54.2**	**135.4**	**270.8**	**541.5**
Outgoing Cattle Value (at AUD1805/head)	AUD million/Annum	**27.1**	**37.9**	**54.2**	**135.4**	**270.8**	**541.5**

SLAUGHTERHOUSE	UNITS						
Number of Cattle to Slaughter per Day	Head/day	60	84	120	300	600	1,200
Number of Cattle to Slaughter per Annum (over 250 days)		15,000	21,000	30,000	75,000	150,000	300,000
Slaughter Rate per Hour (8 hour Shift)	Head/hour	8	11	15	38	75	150
Dressing Percentage	%	52%	52%	52%	52%	52%	52%
Average Carcase Weight	kg DW	260	260	260	260	260	260
Carcase Weight Produced daily	Tonnes/day	15.6	21.8	31.2	78.0	156.0	312.0
Carcase Weight Produced Annually	Tonnes/Annum	3,900	5,460	7,800	19,500	39,000	78,000
APPROX BREAKEVEN OPERATING OUTCOME							
Incoming Cattle value	AUD million/Annum	27.08	37.91	54.15	135.38	270.75	541.50
Operating slaughter labour cost (at 2 head/man/day and AUD425/man month)	AUD million/Annum	0.31	0.43	0.61	1.53	3.06	6.12
Management & Supervisor labour cost (at AUD3.5 head)	AUD million/Annum	0.05	0.07	0.11	0.26	0.53	1.05
Other Operating Costs (@Acents 5/kgCW for electricity, water, maintenance & overheads	AUD million/Annum	0.20	0.27	0.39	0.98	1.95	3.90
Costs	AUD million/Annum	**27.63**	**38.68**	**55.26**	**138.14**	**276.29**	**552.57**
Processing Cost	AUD/Head	**36.90**	**36.90**	**36.90**	**36.90**	**36.90**	**36.90**
Coproduct Sales (@ Rp6,500 (A$0.65)/kgcwt for red and white offals and other slaughter byproducts)	AUD million/Annum	2.54	3.55	5.07	12.68	25.35	50.70
Coproduct Sales (@ AUD50/hide)	AUD million/Annum	0.75	1.05	1.50	3.75	7.50	15.00
Total Coproduct Revenue	AUD/Head	219	219	219	219	219	219
Carcase Sale to Boning (at Breakeven)	AUD million/Annum	24.34	34.08	48.69	121.72	243.44	486.87
Carcase Sale to Boning (at Breakeven)	AUD/Head	1,623	1,623	1,623	1,623	1,623	1,623

BONING FABRICATION	UNITS						
Carcases Processed	Head/day	60	84	120	300	600	1,200
Carcases Processed	Head/Annum	15,000	21,000	30,000	75,000	150,000	300,000
Carcase Weight Processed	kg/day	15,600	21,840	31,200	78,000	156,000	312,000
Carcase Weight Processed	Tonne/Annum	3,900	5,460	7,800	19,500	39,000	78,000
Premium Primals Produced	kg/day	2,000	2,800	3,900	9,900	19,700	39,400
Premium Primals Produced	Tonne/Annum	500	700	975	2,475	4,925	9,850
Secondary Primals Produced	kg/day	2,800	4,000	5,700	14,200	28,400	56,700
Secondary Primals Produced	Tonne/Annum	700	1,000	1,425	3,550	7,100	14,175
Manufacturing Produced	kg/day	4,600	6,500	9,200	23,100	46,200	92,500
Manufacturing Produced	Tonne/Annum	1,150	1,625	2,300	5,775	11,550	23,125
Fat Produced	kg/day	3,000	4,200	6,000	14,900	29,800	59,600
Fat Produced	Tonne/Annum	750	1,050	1,500	3,725	7,450	14,900
Bone Produced	kg/day	2,900	4,000	5,700	14,400	28,700	57,500
Bone Produced	Tonne/Annum	725	1,000	1,425	3,600	7,175	14,375
Losses (Shrinkage)	kg/day	310	440	620	1,560	3,120	6,240
Losses (Shrinkage)	Tonne/Annum	78	110	155	390	780	1,560
APPROX OPERATING OUTCOME							
Incoming Carcase value (from Slaughter)	AUD million/Annum	24.34	34.08	48.69	121.72	243.44	486.87
Operating labour cost (at 1 head/man/day and AUD475/man month)	AUD million/Annum	0.34	0.48	0.68	1.71	3.42	6.84
Management & Supervisor labour cost (at AUD6.5 head)	AUD million/Annum	0.10	0.14	0.20	0.49	0.98	1.95
Consumables costs (@Acents15/Kg cwt)	AUD million/Annum	0.59	0.82	1.17	2.93	5.85	11.70
Other Operating Costs (@ Acnets 20/kgCW for consumables, electricity, water, maintenance & overheads	AUD million/Annum	0.78	1.09	1.56	3.90	7.80	15.60
Costs	AUD million/Annum	**26.15**	**36.61**	**52.30**	**130.74**	**261.48**	**522.96**
Premium Primal Sales (at AUD15.50/kg FOB)	AUD million/Annum	7.75	10.85	15.11	38.36	76.34	152.68
Secondary Primal Sale (at AUD10.40/kg)	AUD million/Annum	7.28	10.40	14.82	36.92	73.84	147.42
Manufacturing Sales (at AUD5.20/kg)	AUD million/Annum	5.98	8.45	11.96	30.03	60.06	120.25
Fat & Bone Sales (at AUD2/kg)	AUD million/Annum	1.50	2.10	3.00	7.45	14.90	29.80
Revenue	AUD million/Annum	**22.51**	**31.80**	**44.89**	**112.76**	**225.14**	**450.15**
Profit/Loss		-3.64	-4.81	-7.40	-17.98	-36.34	-72.81
Loss per head		-243	-229	-247	-240	-242	-243
SLAUGHTER COSTS							
Operating Labour	AUD/head	20	20	20	20	20	20
Supervisory Labour	AUD/head	4	4	4	4	4	4
Other	AUD/head	13	13	13	13	13	13
Fabrication Subtotal		37	37	37	37	37	37
FABRICATION COSTS							
Operating Labour	AUD/head	23	23	23	23	23	23
Supervisory Labour	AUD/head	7	7	7	7	7	7
Consumables	AUD/head	39	39	39	39	39	39
Other	AUD/head	52	52	52	52	52	52
Fabrication Subtotal		120	120	120	120	120	120
TOTAL COSTS							
Operating Labour	AUD/head	43	43	43	43	43	43
Supervisory Labour	AUD/head	10	10	10	10	10	10
Consumables	AUD/head	39	39	39	39	39	39
Other	AUD/head	65	65	65	65	65	65
Grand Total		157	157	157	157	157	157
					30%	30%	30%
Premium Primals as % of carcase weight		13%	13%	13%	13%	13%	13%
Premium Primals as % of beef sales value		34%	34%	34%	34%	34%	34%
Premium Primals as % of beef produced		21%	21%	21%	21%	21%	21%
Premium Primals as % of Imported cattle value		34%	34%	33%	34%	34%	# 34%

Annex 2 – NAMPA Indonesia – Members

No.	Company name	Office address	Factory Address	Call	Fax	Contact Person
1	PT Aromaduta Rasaprima, (.Harsa Duta Mandiri)	Jakarta Jl. Coconut Two no.6 Rt.002 / 06 Post Pengumben West Jakarta 11470	Jl. By Pass Ngurah Rai 555 X Denpasar Bali	021-536 76490 0361-729 494 0361-725 468	021-53676491 0361-723359 / 434-443 0361-7429595	Bp.Sasongko 0816 115 1394 Bo Adrianto Mulia 0811389595
2	PT Bina Mentari Tunggal	Major Main Industry RR 2 - RR 2 G, Jababeka Industrial Estate Cikarang	Ds Kaliangsana, Kec.Kalijati Kab.Subang- Jabar	021-568 6716 260-460 141 021-89835618	021-568 6715 260-461 579 021-89835620	Budi Satria Adoe RidwanYakob
3	PT Canning Indonesian Product	Jl. Raya Jatinegara Barat no. 124 Kp. Malay East Jakarta 13320	Jl. Diponegoro No. 101 Denpasar 80113-Bali PO Box 3002	021-856 4437 0381-228 816	021-856 4438 0361-235 316	Bp.Arief Wicaksana 0819 0504 3156 Mr. Asner Hasibuan 0813 15 841 227 (asner.hasibuan@pronasindo.com)
4	PT Charoen Pokphand Indonesia (PRIMA FOOD)	Maspion Plaza Building lt 5 Gunung Sahari raya Kav 18 Jakarta 14420	Jl.Modern Industrial IV Kav.6-8 Modern Industrial Estate Cikarang Attack 42186	021-64701115 0254-400 932 0254-402 628/27	021-6470 1089	Donatus Hartomo 0811 879 917 02164701089 Mrs. Damiyati Gun Affan Dy 08153332718
5	PT Dunia Daging Food Industries	Jl. Raya Poncol No. 24, Ciracas, Jakarta Timur 13740		(021) 87709977	(021) 87709979	Hendra Noviar Amier 08121175111 Asep Cendianto 08128172155
6	CV Fiva Food Meat Supply	Jl.Pembangunan II no 57 Housing Jatibening I Pondok Gede Bekasi 17412		021-848 4308 021 849 98278	021- 847 17 57 021-849 98 279	Mrs. Betsy Monoarfa 0811 810 371
7	PT Sogoodfood Manufacturing	Gd Graha Praba Samantha Jl Dan Mogot KM 12 no 9 Cengkareng Timur Jkt Brt 11730	Jl.Raya Serang KM 20,2 Cikupa Tanggerang 15710	021-831 0255 021-5961284 021-553 0255	021-831 0309 021 596 0953 021 596 1285	Mrs. Sunarti 0816 752 545 Mother Utami Roy Heru Wibowo 0811 106 679
8	PT Kemang Food Industries	Jl. Pulo Kambing No 11 Jakarta Industrail Estate Pulogadung 13930		021-460 3512	021-461 0341 021-461 0050	Iwan 0811141869
9	PT Macroprima Pangan Utama	Rukan Taman meruya Blok N 27 - 28 Jakarta 11620	Telaga Mas V / 1 Cikupamas Tanggerang Banten 15710	021-587 4630	021-587 4629 021-586 5472	Mr. Bambang Sutantio 0816 886 659 Boediono Stretcher 0816 161 47 94
10	PT Madusari Nusaperdana (Food Healthy Prosperous)	Jln.Mangga Dua Raya Ruko Plaza Mangga Dua Block E 6-7	Jl. Jababeka VII Block J No 5 N Cikarang Indistrial Estate Bekasi 1530	021-893 4539 021-625 7761	021-893 4540 021-612 1907 021-626 1833	Dewi Rusli 087877822525 Mrs. Monawati S. 08161953660 Bpk Hasan Ali 08129332871
11	PT San Miguel Purefoods Ind.	Jl.Raya Bogor Km 37 no 18 Sukamaju Cilodong Depok 16415]		021-875 2431	021-875 3593	Mrs. Sannur
12	PT Mitindo Global Jaya	Pluit Karang Utara Block I 1 south no 50 A North Jakarta 14450	Arya Kuning no 8 Tanggerang	021 6679658	021-66605715	Mr. Iman Djaja Lukman 0816 824 210 Mr. Ricahard 021 70226649
13	PT Soejasch Bali	Tekno technology warehouse complex Block E 1 No. 18 Bumi Serpong Damai - Serpong Tangerang 15314	Jl.Gunung Patas 1, Padang Sambian Klod Denpasar 80117 Bali PO Box 3235 Denpasar	021- 75870899 0361-420 811 0361-420 811	021- 75870998 0361-420 810 0361-420 810	Mr. Michael 0856 2033 333 . Iman Santosa 081311520300
14	PT Sumber Prima Anugrah Abadi	Kp.Kebon Kelapa No.99 A / B Rt.01 / 06 Kel.Desa Panunggangan West, Kec.Jati Uwung Karawaci Tanggerang 15139		021-557 96135/6 021-551 8092/93 021-557 638 30	021-558 97 52	Mr. Mulyo Gunawan
15	PT Anugrah Citra Boga	Jl.Karawaci Ds Bojong Ban Tanggerang 15115		021-552 4169 021-552 0452	021-5534072	Bp.Sutejo 0816 908 856 Niken's mother
16	PT Suryajaya Abadiperkasa	Jl. Raya Surabaya - Probolinggo Km 90- Probolinggo- East Java	Gd Office Tower Era Lt 5.01-05 Swenen Raya 135 - 137 Jakarta 10410	0335-421 172 0335-424133 213863466	0335-424 144 021-386 34 67	Clementia Frisca 0818744564 Masrodi 0818 747 520 HP Ibu Ida 0816 143 8338
17	PT Sorin Maharasa	Jl.Petojo VIY II No.15 Central Jakarta 10150	Jl Pembina Rawahaur no 3 Rt 06/06 Babakan Madang Sentul Bogor	021-6329242 / 3	021-632 92 48	 Mother Sitie Irene 0812 949 9330
18	PT Eloda Mitra	Eloda Mitra Jl. Greater France Warehousing Mutiara Kosambi Block B. 6 No. 8 - 9 Dadap Tangerang	PT. Eloda Mitra Industrial Complex & Warehousing "Sinar Buduran" Block B1-B6 East Ring Road Sidoarjo 61252 East Java - Indonesia	031-8921995 031-8921995 021 55955481	031-8921996 021 559 554 85	 Anthony Setiawan 08129507925
19	PT Belfoods Indonesia	Gd Plaza City View lt 2 Jln Kemang Timur no22 Jakarta South 12510	Perum.Citra Indah Kav. PA 1 & 2 Jl.Raya Jonggol KM23,3 Jonggol, Bogor 16830	217197277	217196443	Carolyne 0812092839 Wulandari 08567877765
20	PT DAGSAP ENDURA EATORE	Grand Wijaya Center Block F 83 BWjaya II, Jakarta 12180	Jl. Light Raya Kav. H.3, Regions Sentul Industry Leuwinutug - Citeureup Bogor, West Java	021 724 8455 021- 87920420	021 7262087 021 879 2049	Ishana Mahisa
21	PT Frozen Food Pahala	Ruko KebunJeruk Mediterania L T2 Jl Meruya Ilir No 10 Kembangan west Jakarta	Jl Raya Mayor Oking Jayaat = Maja KM 2,3 Kel. Cirimekar Kec.Cibinong, Bogor, West Java	021-58902665	021-8752137 021-5864584	Oliver Hancock 0812 819 8034 olive@ffp.co.id
22	PT Adil Mart	Jln KH Ahmad Dahlan 56 B Pontianak	JlKhatulistiwa no 262 Pontianak '	0561-768827	0561- 769679	Wong Hua Ting (swccps@yahoo.co.id) Drs Maosul Lukmanul Hamim (perwaki-Lan Jakarta 0811879136)
23	PT Inbraco	Jl KS Tubun no 54 No 54 New Market, Watering Tackle	Jl KS Tubun no 54 No 54 New Market, Watering Tackle	021- 5520760	021 5524806	Yudhistira Wiguna 081310897010
24	PTSOELINA INTER WORKS PROCESSING	JL. HR RASUNA SAID KAV B7 KUNINGAN JAKARTA	JL. HR RASUNA SAID KAV B7 KUNINGAN JAKARTA	021-5255401 021-5251640	021-5251640	Sandra Schulz january_schulz@yahoo.com Miar Simanjuntak 0818492370
25	CV Sicma Inti Utama	Jl Cipinang Sanjo no 53 , Cipinang Muara jkt 13420		021 8672949 021 8673326	021 867 3570	Herman Tanusetiawan 08161985230 Crescint Tanusetiawan 081511869898
26	PT Bolesca Foodindo	Rukan Puri Mutiara Block D 129 -130 Sunter North Jakarta	Jl Kol Masturi no 14 Lembang Bandung West Java	021 65314144 022 2789958	021 65314145 022 2788603	Ika Sulistyawati bolesca-ika@yahoo.com Adrianus Satmoko kksatmoko@gmail.com
27	PT Kirana Semesta Pangan	Jl Rancamanyar no 119 Kp Tambakan Ranca village manyar Bandung	Jl Rancamanyar no 119 Kp Tambakan Ranca village manyar Bandung	022 85934662	022 85934661	Sany Wibisono 08121431975 S anny.wibisono@yahoo.co.id Dede Hermawan 08122337590
28	PT Diamond Cold Storage	Jl Pasir Putih raya Kav 1 East Ancol of North Jakarta	Jl Cihanjuan no 33 Cimahi	021 6405678 022 6643719	021 6402861 022 6643719	Dave Lesmana dave@diamond.co.id
29	PD Rose	Jl Pangaritan / Mekarmulia 1 Kota Bandung		022 7832632	022 7832634	Asep Saepudin 08122119257
30	PT Sumber Panganjaya (BULAF)	Jl CilandakTenga no 35 Jakarta Selatan 12430	Kawasan IndustriJababeka 1, Jl Jababeka IX Block P 10 B Cikarang West Java	021- 75905917	021-75912317	Amalia Nafitri bulaf.indonesia@yahoo.co ,
31	PT Malindo Food Delight	Jl RS Fatmawati no 15 Golden Plaza complex Block G no 20 - 22 Jakarta 12420	Jl Area GIIC Block AA no 10 City Deltamas Cikarang Center	021-7661727 2150555620	021-7691851 2150555616	Geordie Mudita Hp 0811999991 geordie@malindofood.co . Id
32	PT De Glow	Jl Utama Utama Raya Blol RR no 2 F Jababeka II Cikarang	idem	021-89837019	021-89834060	Dany Hamdani 08999505415/085881712733 dany.hamdani@deglowinternational.com
33	Serena Harsa Utama	Jl Raya Purwakarta 37 Padalarang bandung				Imam Basuki 0817776199,081321216199 imam_basuki@yhaoo.co.id
34	Indowurst Maestro Perkasa	Jl Wirajati VII Block A 4no 7 Kompas TNI AU Jakarta	Jl Cileuangsi KM 2.2 no177, Cileungsi Jonggol	218611990	218631783	Melani Laksmono HP 081668813, melani@indowurst.com

Annex 3 - Industrial Parks and Special Economic Zones in Indonesia

Industrial parks offer a cost effective way to increase access to basic infrastructure and ensure that production can be carried out in an efficient and effective manner. Located throughout the country, these investment options have become more targeted in recent years, often specializing in select industries and providing investors with the resources, utilities, and connections to transport networks required to optimize production chains.

SEZ's in Indonesia are open to foreign investment and offer investors access to preferential regulatory infrastructure and taxation in an attempt to channel investment into specific locations. Indonesia currently has nine SEZs and plans for a total of 25 to be in place by 2019. Locations of the current Industrial Parks and SEZ's are provided in Figure 23.

Comparison of Bonded Zones, Free Zones, Industrial Zones, and SEZs

In addition to Bonded Zones, Indonesia has programs for Free Zones, Industrial Zones, and Special Economic Zones. One objective of this assignment was to identify the differences between these programs and the unique features of the Bonded Zones program that may make it especially well-suited for the beef and cattle industry.

The main considerations in comparing these different programs are:

1. Fiscal incentives;
2. Non-fiscal incentives (e.g., subsidized utilities or other inputs, less restrictive policies on foreign employees).
3. Permitted and prohibited activities in zones;
4. Eligibility requirements and approval procedures for zone developers, operators, and occupants;
5. Eligible locations for zones;
6. Governance and oversight of each programme.

Table 21 shows a comparison of the different features of bonded zone, free zone, special economic zone, and industrial zone[3] regimes.

[3] Industrial zones are also known as industrial areas, industrial estates, and industrial parks.

Figure 23 - Industrial Parks and Special Economic Zones in Indonesia[4]

[4] ***A Guide to Indonesia's Industrial Parks and Special Economic Zones; Indonesia Briefing; Dezan Shira & Associates; February 28, 2017***

Table 21 - Main Features of Different Types of Industrial Zones in Indonesia

	BONDED ZONES	**SEZS**	**FREE TRADE ZONES**	**INDUSTRIAL ZONES/ESTATES****
PERMITTED ACTIVITIES	Includes: • processing of goods and materials into manufactured goods with a higher added value • cultivation of flora and fauna.	Includes: • export processing • logistics • manufacturing • technology development • tourism; energy • other economic activities • support activities for companies in SEZs	Electronics, manufacturing, shipping/shipbuilding and repair, oil and gas, chemical/refining, tourism	All industrial activities plus R&D labs, office buildings, banks, and social and public facilities
GOVERNING AUTHORITIES	Ministry of Finance, Department of Customs & Excise	• National Council for SEZs • Zone Council drawn from national and regional authorities • SEZ Administrator, appointed by Zone Council	Batam Indonesia Free Zone Authority (BIFZA)	Ministry of Industry, Directorate of Industrial Zone Development
DEVELOPER/ OPERATOR ELIGIBILITY	Mainly private businesses: industrial and logistics companies typically set up bonded zones for their own use (e.g., Toyota's Indonesian subsidiary operates a bonded logistics zone; Logistic company PT Cipta Krida Bahari, a subsidiary of listed energy firm PT ABM Investama, operates 4 bonded zones in different provinces)	Business entities; city, district, or provincial administration	Government	Business entities, local/regional governments, PPPs

	BONDED ZONES	SEZS	FREE TRADE ZONES	INDUSTRIAL ZONES/ESTATES**
ELIGIBLE LOCATIONS	Any area zoned for industrial use. Development/ operating permits granted Minister of Finance Decree	Must correspond with Regional Spatial Plan, have approval of local administration, and be situated close to international trading hub or port or in an area with prime resource potential. Existing zones in North Sumatra and Banten. New zones planned in North Maluku; South Sumatra; and West Nusa Tenggara	Only one FTZ exists, in Riau Islands of Batam Bintan, and Karimun (there is an ongoing discussion on abolishing the Batam Free Zone Authority and turning the Batam FTZ into an SEZ.)	Any area, though not on agricultural land. Government encourages establishment of new IZs in East and Central Java and on other islands, and has mandated relocation of industrial areas from Jakarta by 2019. 73 IZs currently exist in 15 provinces.
APPROVAL REQUIREMENTS AND PROCEDURES TO ESTABLISH A ZONE	Application for license is submitted to Director General of Customs and Excise Applicant has business license Applicant has taxpayer code number and VAT (PKP) registration, of a recent year. Proof of possession of a building or area with clear boundaries/fence Certificate of establishment of the limited company or cooperatives business unit validated by Ministry of Law and Human Rights Map/blueprint of the location to be established as a Bonded Zone, approved by local government	Application must include: financing plan sources; environmental impact assessment economic and financial feasibility studies proposed duration of SEZ and strategic plans Formal designation of SEZ is made by President of the Republic	n/a	1. Regent/Mayor for Industrial Area located in the regency/city; 2. Governor for Industrial Area located in regency/city area; or 3. BKPM (for international investors)
ISSUANCE OF LICENSES FOR ZONE OCCUPANTS	Department of Customs and Excise (as well as BKPM and Ministry of Industry for company registration and industrial license).	SEZ Administrator on authority delegated by central government	Batam Industrial Development Authority one-stop shop	BKPM (company registration), Ministry of Industry (industrial license), Industrial Estate operator

	BONDED ZONES	SEZS	FREE TRADE ZONES	INDUSTRIAL ZONES/ESTATES**
ZONE OPERATORS	Business entities or public service agencies	Business entities (government enterprises, cooperatives, private companies, or PPPs)	BIFZA	Business entities or public service agencies
IMPORT DUTIES	Postponement until goods are sold in domestic customs territory; exempt if re-exported.	Postponement until goods are sold in domestic customs territory; exempt if re-exported	Exempt, until/unless sold into domestic customs territory	Exemption from import duty on import of machinery, goods and materials for up to 4 years
VAT AND EXCISE TAXES	Exempt, until/unless sold into domestic customs territory	Exempt, until/unless sold into domestic customs territory	Exempt, until/unless sold into domestic customs territory	Exemption from VAT on import and/or transfer of machinery and manufacturing equipment, excluding spare parts for up to 5 years
CORPORATE INCOME TAX RATES/ EXEMPTIONS	Varies according to industry: pioneer industries, including processing of agricultural products, qualify for CIT reduction of 10%-15% for 5-20 years	Reduction of CIT rate of 20% to 100% for up to 15 years for minimum investment of IDR 500 billion, up to 20 years for minimum investment of IDR 1trillion	income tax facility on capital investment for certain industries: a) 30% of net income reduction from capital investment in tangible fixed assets prorated at 5% for 6 years; b) accelerated depreciation; c) tax loss carry-forward up to 10 years (tenants also eligible for double tax treaties with 65 countries, including Australia, USA, UK, Germany, Singapore, Malaysia)	Vary by region: zones in developed areas, including Java, receive less generous incentives than less-developed regions CIT reduction/exemption of 10% to 100% for 5-20 years; OR income tax facility for capital investment: a) 30% of net income reduction from capital investment in tangible fixed assets prorated at 5% for 6 years; b) accelerated depreciation; c) tax loss carry-forward up to 10 years
OTHER FISCAL INCENTIVES		Exemptions or reductions from property taxes and other local/ regional taxes		Reductions in or exemptions from regional taxes and levies: land and building acquisition fees, property tax, and street lighting tax

	BONDED ZONES	SEZS	FREE TRADE ZONES	INDUSTRIAL ZONES/ESTATES**
NON-FISCAL INCENTIVES		100% foreign ownership Foreigners can own land one-stop licensing and permitting	100% foreign ownership Foreigners can own land industrial land rental $2/m^2/year one-stop licensing and permitting electricity tariff 7¢ to 12¢/kWh visa on arrival for most nationalities	Simplified environmental impact reporting requirements, allowing tenants of industrial zones to skip the step of filing an analysis of the environmental impacts of their businesses if the operator of the zone has already done so
TEMPORARY ADMISSION OF GOODS INTO NATIONAL CUSTOMS TERRITORY	yes	yes	yes	yes
SALE INTO DOMESTIC MARKET	yes	yes	yes	yes
ABILITY TO SUBCONTRACT PARTIAL PROCESSING TO COMPANIES IN NATIONAL CUSTOMS TERRITORY	yes	yes	yes	yes

Annex 4 – Indonesian Investment Incentives

BKPM

An important component of Indonesia's ambition to stimulate investment is Badan Koordinasi Penanaman Modal (BKPM). BKPM is an investment service agency of the Indonesian Government which aims to bring about Indonesia as an attractive destination for investment. .

BKPM aims to:

- Stimulate realization of a more conducive climate for investment;
- Improve effectiveness of investment promotion and cooperation;
- Improve investment services, facilities, and advocacy;
- Enhance the role of investment institutions and system information.

BKPM works closely with the Indonesian Ministry of Finance (MoF) to assist companies to access financial incentives and concessions as can be seen from the following paragraphs.

Concessions and Incentives

The Indonesian Pocket Tax Book 2017[5] indicates that in Indonesia the following concessions and incentives are able to be considered for new investments:

Corporate Income tax Reduction

- The Ministry of Finance (MoF) may provide an avenue for Corporate Income Tax reduction of 10%-100% due for 5-15 years from the start of commercial production. The period may be extended to 20 years if deemed in the national interest. This facility is available to firms which have wide connections, provide added value, introduce new technologies and have strategic value and "Processing industry on agriculture, forestry and fishery products are included in the target business sectors. Applications are to be submitted to BKPM and then BKPM will submit for MoF approval. The current window is open until 15th August 2018.

Inbound Investment Incentives

- Tax concessions may be applied to companies in certain designated business sectors or regions. Eligibility is based on high investment value or for export purposes; high labour utilisation; or high local content. A recommendation from BKPM must be obtained before MoF approval is sought. The concessions include:
- Reduction in net income of up to 30% of the amount invested pro-rated at 5% for six years of commercial production.
- Accelerated depreciation and/or amortisation deductions
- Extension of tax losses carry forward for up to ten years
- Reduction of withholding tax rate on dividends paid to non-residents to 10%.

Reinvestment Incentive

- Enterprises that reinvest after tax profits in Indonesia within the same or following year are exempt from tax on these profits. The investment should be in the form of:
- Capital participation in a newly established company
- Shareholding in an established Indonesian company
- Acquisition of fixed asset to improve business operations
- Investment in intangible asset to improve business activities in Indonesia

[5] Indonesian Pocket Tax Book 2017 – PWC Indonesia

Special Economic Zones

Enterprises conducting businesses in Special Economic Zones (KEKs - Kawasan Ekonomi Khusus) may also enjoy tax advantages. KEK areas are set out in specific government regulation.

Reduction in Corporate Income Tax (CIT) may be granted for taxpayers with new capital invested in the main activities of the KEK based on the following schedule (Table 22).

Table 22 – KEK Tax Reduction Schedule

Investment (IDR in Billion)	CIT Reduction (%)	Reduction Period (years)
>IDR 1,000	20%-100%	10-25
IDR 500 up to IDR 1,000	20%-100%	5-15
<IDR 500	MoF Discretion	5-15

Taxpayers in KEK are also able to take advantage of:

- Non collection of VAT and LST on certain goods.
- Postponement of import duty on capital goods and materials for processing
- Exemption of excise on goods used to produce non-excisable goods
- Non collection of VAT and LST on domestic purchases of certain goods.

Enterprises which do not achieve approval under the SEZ process continue to be able to access concessions and incentives as outlined in Section 2.7.2.

Integrated Economic Development Zones

Enterprises who conduct business in an Integrated Economic Development Zone (Kawasan Pengembangan Ekonomi Terpadu – KAPET) may have access to tax incentives. The designation of a KAPET is set out in a specific presidential decree.

An enterprise in a Bonded Zone (Pengusaha Di Kawasan Berikat – PDKB) located in a KAPET may have access to:

- Similar incentives to Inbound Investment Incentives (see Annex 4)
- No VAT and LST on import of certain goods
- Postponement of import duty on capital equipment and material for processing
- No VAT or LST on domestic purchase of certain goods.

Bonded Zones

The above incentives apply to enterprises located in Bonded Zones (Kawasan Berikat) where companies produce finished goods which are mainly for export with domestic sales being less than 50% of the previous year's export realisation value.

Free Trade Zones

Enterprises operating in Free Trade Zones (Kawasan Perdagangan Bebas) may also be entitled to the above incentives.

Industrial Zones

Industrial Zones (Kawasan Industri) are determined and licensed by the Indonesian Government. Applicable tax facilities depend on the classification of the Industrial Development Area (IDA). The tax facilities available are outlined in Table 23.

Table 23 – Tax Incentives for Industrial Zones

Incentive	Advanced IDA	Developing IDA	Potential I IDA	Potential II IDA
CIT reduction of 10%-100% of the CIT due for 5-15 years from the start of commercial production.	✓			✓

Incentive	Advanced IDA	Developing IDA	Potential I IDA	Potential II IDA
Incentives similar to Inbound Investment Incentives (See Section 2.7.2)	✓	✓	✓	
VAT exemption on capital purchases of equipment used to produce VAT-able goods	✓	✓	✓	✓
Import duty exemption on import of equipment and materials used to produce goods or services	✓	✓	✓	✓

Manufactured Exports

Tax incentives are also provided for the production of goods to be fully exported (Kemudahan Impor Tujuan Ekspor – KITE). These include:

- Exemption to allow most raw materials to be imported without payment of import duty, VAT or LST provided finished goods are exported. Small to medium enterprises may also be allowed duty, VAT and LST exemption on equipment.
- A drawback facility is available for the recovery of import duty paid on imported raw material that is incorporated in finished goods which are exported.

Annex 5 - Indonesian Beef Market Dynamics and Export Opportunities

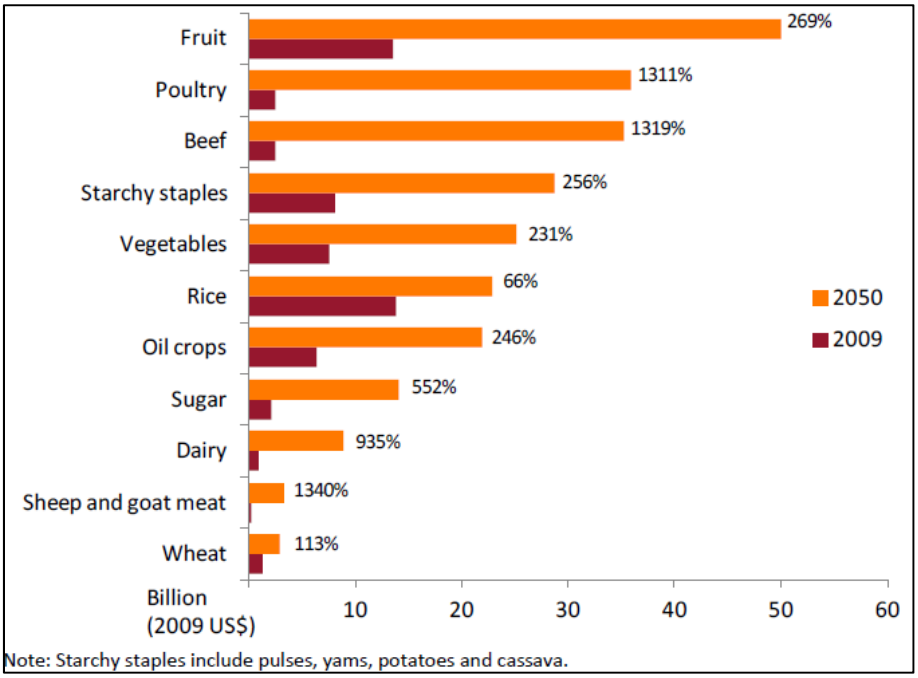
Indonesian Beef Demand and Self Sufficiency

ABARES Modelling

In November 2015 the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) conducting a study to project Indonesia's food demand through to 2050[6]. The study considered a range of agricultural commodities and projected that:

- By 2050 there would be a 1319% increase in the real value demand for beef.
- In 2050, imports of beef were projected to reach US$26 billion (in 2009 US dollars), compared with US$0.5 billion in 2009.

Figure 24 – Projected Consumption of Selected Agricultural Commodities, Indonesia



Source: ABARES Research Report

ANZ Agribusiness Research Modelling

In September 2013 Ben Nixon and Michael Whitehead of ANZ Agribusiness Research presented findings[7] of modelling of the Indonesian target to achieve beef consumption self-sufficiency and the implications for the Australian meat industry.

The modelling concluded:

- Imported beef and live cattle will be required to supplement domestic Indonesian supply and allow domestic herd growth

[6] ***What Indonesia wants - Analysis of Indonesia's food demand to 2050; Caroline Gunning-Trant, Yu Sheng, Patrick Hamshere, Trish Gleeson, and Brian Moir; ABARES Research report No. 15.9; November 2015***

[7] ***Indonesian Beef Self-Sufficiency & Implications for the Australian Beef Industry - AMIC 2013 Meat Industry Conference September 2013; Ben Nixon & Michael Whitehead ANZ Agribusiness Research***

- Four percent domestic herd growth, assisted by imports, could lead to 70% self-sufficiency.
- Under 70% self-sufficiency, Australia could export 52kt beef/467k cattle in 2020, and 77kt /689k cattle in 2030.
- 90% self-sufficiency will also require improvements in productivity and a supply chain which could handle significantly higher volumes.
- Opportunities exist, in particular the development of the feed-on sector and the re-establishment of some processing capacity in northern Australia, as well as further development of export markets.
- The partnership between Australia and Indonesia will continue to be a vital foundation in the development of the beef supply chain across both countries, a chain which is likely to see substantial integration in coming years.

The projections from this model will be impacted by the recent approval to import carabeef (buffalo meat) into Indonesia from India, however, the modelling predicts that imports of beef and live cattle will play an important role in servicing the Indonesian market demand through until at least 2030.

Potential Markets for Australian Beef Processed in Indonesia

In this section possible export markets are explored for beef produced in Indonesia from Australian live cattle or quarter beef. This exploration involves an examination of the size and requirements of existing markets including market access. It also includes an examination of market growth potential, competitor activity and price points. Also considered in this section is how beef produced in Indonesia from Australian beef / live cattle might be positioned in the minds of consumers or customers in other countries.

Two possible business concepts are under consideration for producing beef in Indonesia from Australian live cattle or beef:

1. Importing Australian feeder cattle, feed-lotting these cattle, then slaughtering and boning the cattle
2. Producing retail ready beef products by adding value to primals or processing manufacturing beef sourced from in Australia

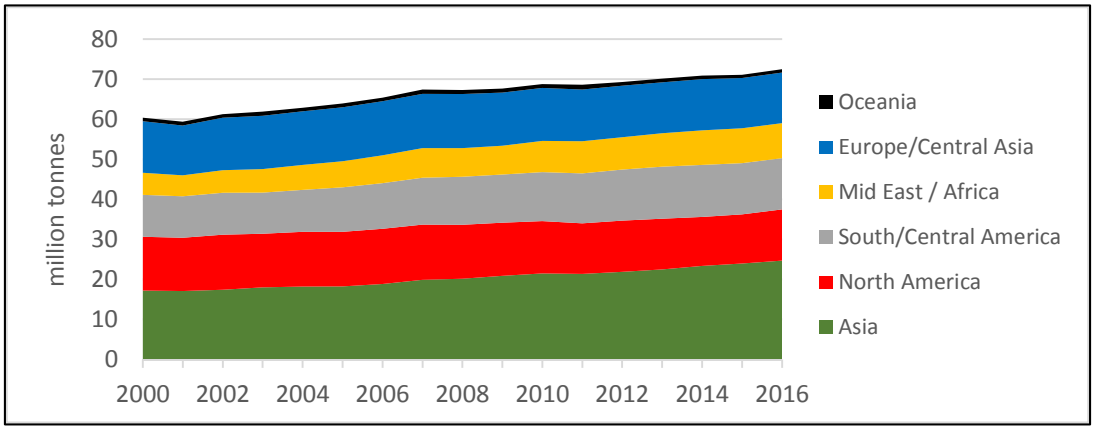
Although material presented in this paper applies to an extent to all three of these options, there is a focus on the first option. To explore market opportunities for the second option requires specificity regarding the type of retail ready product to be produced and detailed market investigations into this product. Even for the first option further market investigation to that presented in this report would be required; however, this report provides information on where this further investigation might optimally be directed.

The challenges involved in exporting beef also need to be fully recognised. Exporting is inherently more difficult than selling domestically. There is a familiarity with the distribution channels and cut uses in the domestic market, as well as the marketing options available. In contrast, between different countries representing potential export destinations customer preferences can vary significantly and, in some countries, are evolving rapidly in unique and specific directions. Effort is required by an exporter to monitor and address these trends and have a detailed knowledge of the specific requirements of each market.

Global Beef Market - Where Beef Produced in Indonesia might be directed

World beef consumption is just over 70 million tonnes carcase weight (see Figure 25). Beef consumption in Asia accounts for about one-third of this total, the largest of any single region. Moreover, the compound annual growth rate (CAGR) of beef consumption in Asia over the past decade has been among the fastest of any region in the world.

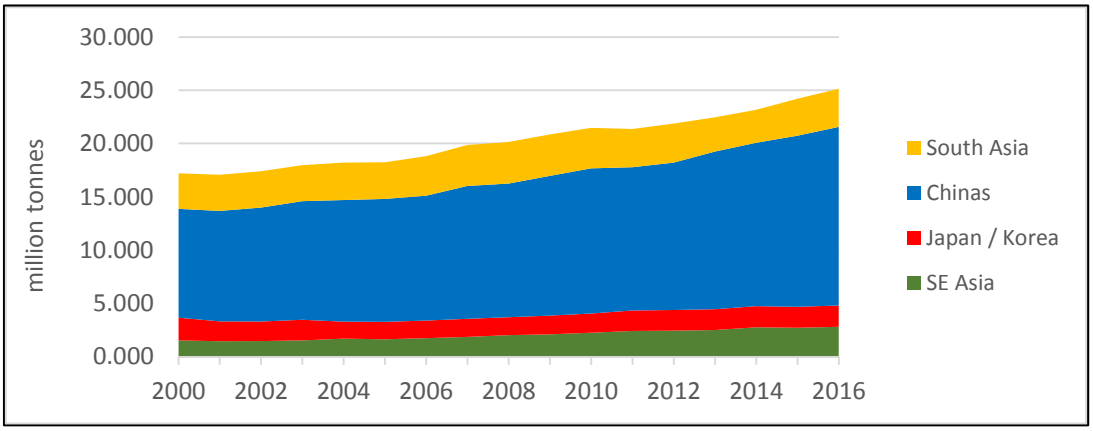
Figure 25 – World Beef Consumption by Region



Source: FAO, FAO/OECD forecasts

Within Asia in absolute terms consumption has grown more rapidly in China than elsewhere – by 4.3 million tonnes over the past decade, compared to almost one million tonnes in South East Asia (see Figure 26). However, proportionate growth in South East Asia has been greater with a consumption CAGR of 4.7% compared to 3.4% in China.

Figure 26 - Beef Consumption across Asia



Source: FAO, FAO/OECD forecasts

Finally, from an examination of beef consumption in South East Asia it is clear that a number of important markets have grown strongly (see Figure 27 and Figure 28).

Of all the countries in South East Asia, Viet Nam has grown most strongly (at a CAGR of 9.3% over the past decade, so that Viet Nam now represents about 30% of all beef consumption across South East Asia). The Viet Nam estimate has been based on FAO data (which is only available until 2013) and FAO/OECD forecasts (for the period 2014 to 2016). In deriving a consumption estimate for Viet Nam, however, it is hard to disentangle the level of beef imports into Viet Nam that are consumed in Viet Nam from those that are smuggled into China. Based on exporting country data, slightly less than 1 million tonnes of beef (carcase weight equivalent) was imported into Viet Nam in 2016[8]. The consultant's estimates from previous in-country field work suggests that about two-thirds of this product would have been smuggled into China, resulting in total beef consumption in Viet Nam being

[8] ***It is to be noted that the 1 million tonnes (cwt) of imports into Viet Nam based on exporting country data is greater than the consumption figure used by the FAO/OECD for Viet Nam. The conclusion is that the FAO/OECD have either not taken account of the discrepancy between exporting country data and Viet Nam import data (the former probably being more reliable) or implicitly assumed that a proportion of imported product is diverted into China (thus adjusting the Viet Nam consumption level lower).***

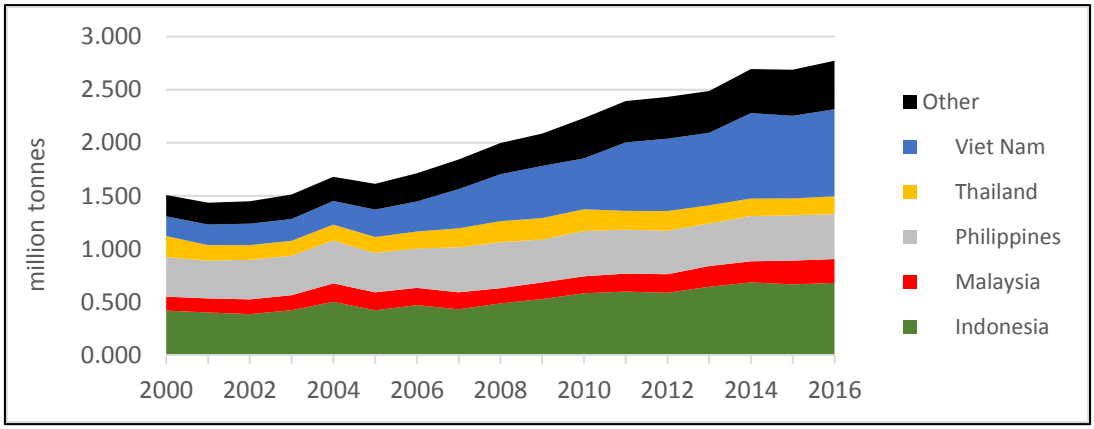
about 0.6 million tonnes in 2016, rather than the 0.8 million tonnes estimated by the FAO/OECD. For the purposes of this report, however, it matters little that some of the consumption estimate implied for Viet Nam may, in fact, represent consumption in China – the more important point is that the product is distributed through Viet Nam.

Indonesia is the South East Asian country that has experienced the second most rapid growth over the past decade – growth of 5.2% (CAGR), to now account for about one-quarter of all beef consumed in the South East Asian region.

The other country to perform strongly in terms of beef consumption growth has been Malaysia (CAGR in beef consumption over the past decade of 3.8%) to account for about 8% of the region's total beef consumption in 2016. The Philippines, although experiencing little growth in total beef consumption over the past decade, still accounts for 15% of the region's beef consumption.

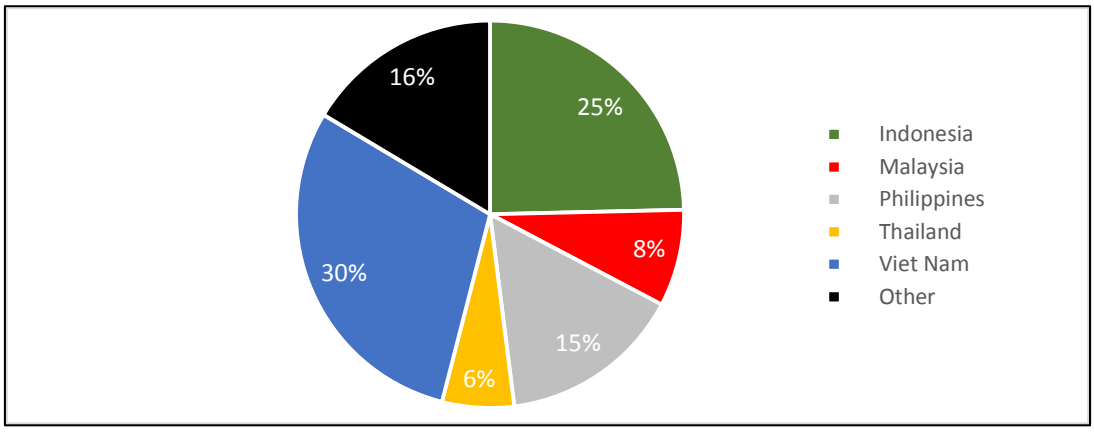
Over the next decade the FAO/OECD have forecast that the CAGR for beef consumption in Indonesia will be 2.6%, in Malaysia 1.7% and in Viet Nam and the Philippines 1.3%.

Figure 27 - Beef Consumption across South East Asia (cwt)



Source: FAO, FAO/OECD forecasts

Figure 28 - Proportion of Total Beef Consumed in South East Asia in each Major Country



Source: FAO/OECD forecasts

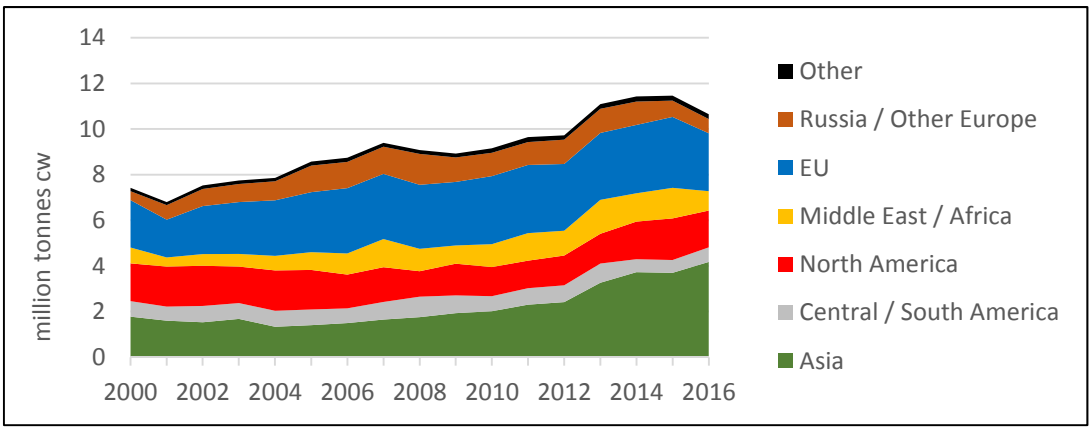
Figure 29, Figure 30 and Figure 31 show analogous information to that displayed in Figure 26, Figure 27 and Figure 28, but are related to beef imports rather than consumption.

Major points to draw from these figures are:

- The worldwide compound annual rate of growth in beef imports over the past decade has been only 1.4%, but has been 10.8% in Asia.
- Within Asia the fastest growth of beef imports has been into China, but imports into South East Asia have also grown rapidly – at a CAGR of 13%.

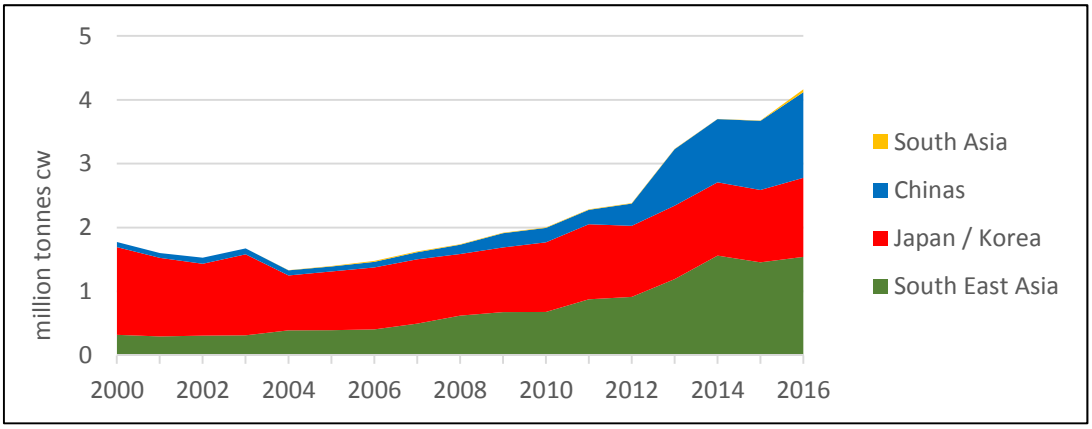
- Within South East Asia imports into Viet Nam have grown at the fastest rate over the past decade – a CAGR of 32%. However, imports into Malaysia and Indonesia have also grown over this period.
- Viet Nam dominates beef imports into South East Asia but, as noted earlier, it is likely that about two-thirds of these imports are smuggled into China. Other major beef importing countries in South East Asia are Malaysia, Indonesia[9] and the Philippines.

Figure 29 - World Beef Imports by Region



Source: GTIS, Comtrade

Figure 30 - Asian Beef Imports by Region



Source: GTIS, Comtrade

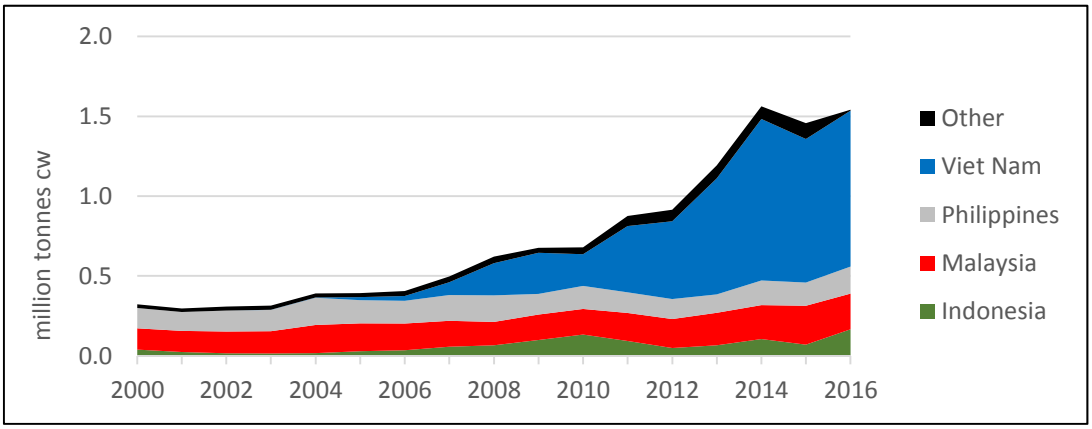
Given the data presented in this section a number of observations can be made regarding beef produced in Indonesia (either from Australian live cattle or quarter beef):

- The Indonesian market itself is one of the more attractive beef markets in the world. Over the past decade beef consumption in this market has been growing at a compound annual rate of 5.2%.
- Over the next decade of all the countries included in the OECD/FAO forecasts only four countries (Ethiopia, Mozambique, Tanzania, Zambia) are expected to have beef consumption growth rates in excess of those for Indonesia. Moreover, because all these countries now have lower levels of beef consumption than Indonesia the absolute growth in these countries will be less than that in Indonesia.

[9] Note, feeder cattle imports into South East Asian countries (especially Indonesia and Viet Nam) have not been counted as beef imports.

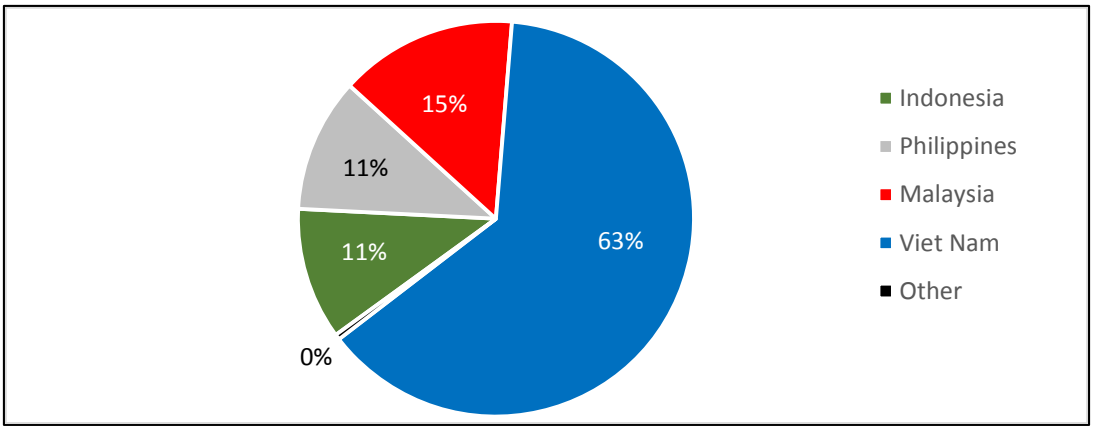
- Because of the attractiveness of the Indonesian market, a consumer preference for locally processed beef and familiarity by Indonesian processors with their domestic market, it makes sense to focus primarily on this market – with exports representing a secondary consideration.
- It should be noted that it is likely that a significant proportion of the growth in Indonesian beef consumption over the next decade will be supplied from Indian buffalo. Indian buffalo not only represents a competitive threat to other beef import supplying nations into Indonesia (notably Australia and New Zealand), but also to domestically produced beef. However, Indian buffalo meat is now pervasive across the ASEAN region – the task of competing against this product will be even more difficult for Indonesian beef processors in export markets than in the domestic market. This again suggests that the focus of Indonesian beef processors should be on their domestic market.

Figure 31 - Major Beef Importing Countries in South East Asia



Source: GTIS, Comtrade

Figure 32 - Proportion of South East Asia Beef Imports by Country



Source: GTIS, Comtrade

- To the extent there should be an export focus by Indonesian beef processors, the focus should be on neighbouring countries. In recent times the growth in beef consumption across South East Asia has exceeded that of any other world region and strong growth will continue for at least another decade. Part of this growth will be fuelled by beef imports. Beef imports into Malaysia, the Philippines and Viet Nam are expected to grow by more than 350,000 tonnes (cwt) over the next decade, with these three countries occupying almost 20% of the total growth in the world beef trade. With the extent of growth expected in neighbouring countries, it makes sense for Indonesian beef processors to focus any export effort on these countries. There is also some commonality in cuisines and customs between Indonesia and neighbouring countries which will lower the hurdles which have to be confronted in export markets.

- Over the medium term it may make sense for Indonesia to attempt to gain direct access to the China market. As noted in this section, the China market can be indirectly accessed via Viet Nam (and also Hong Kong). However, product smuggled into China via Viet Nam (and Hong Kong) incurs a discount compared to product imported into China through official channels. When both direct and indirect imports are taken into account, China is now the largest beef import market in the world. OECD/FAO forecasts are for China beef imports to grow by a further 100,000 tonnes over the next decade. China has shown a willingness to import directly from some developing countries (Uruguay and Brazil). However, China's market access requirements are exacting and present a challenge even for experienced beef exporters such as Australia.

Competitor Beef Supplies into South East Asia

To the extent that Indonesian beef processors may wish to focus on exports, the previous section identified Malaysia, the Philippines and Viet Nam as the most promising markets. This section briefly looks at competing beef suppliers into these markets as well as price points from these suppliers.

Before examining individual markets, the major beef suppliers into the region in general are the major beef suppliers globally – India, Brazil, Australia and the United States. A hierarchy exists amongst these suppliers based on the type of beef produced (grainfed / grassfed) and perceptions of the product.

Table 24 lists export prices globally from these suppliers for frozen and chilled boneless beef. It should be noted that these prices may be influenced by a different mix of cuts exported from each supplying country, as well as other factors. Unfortunately it is generally not possible to segment traded product below the six digit Harmonized System (HS) of tariff codes (e.g. into individual cuts) – chilled boneless beef and frozen boneless beef are both defined at the six digit level.

Table 24 - Unit Beef Export Values by Exporting Country - All Destinations

Exporting country	Average unit export prices (AUD/kg)			
	Chilled Boneless Beef		Frozen Boneless Beef	
	2016	5 year avg	2016	5 year avg
US	10.05	8.95	7.45	6.61
Australia	10.84	8.84	5.90	5.14
Brazil	7.38	6.98	5.16	4.92
India	5.76	5.10	3.96	3.53

Table 24 also shows that globally for frozen boneless beef (the main category of beef traded) beef from the United States (almost all grainfed) attracts a 25%-30% premium over beef from Australia which in turn attracted a 14% premium compared to beef from Brazil (in 2016). Also, beef from Brazil attracts about a 25% to 35% price premium compared to buffalo meat from India.

A similar price hierarchy exists for chilled boneless beef. However, for chilled boneless beef, Australian and US supplies have sold for broadly similar prices.

There are many determinants of these price differences. As mentioned the mix of cuts exported may be important. But so too will be the method of production (grainfed / grassfed), customer perceptions of the consistency of the product, perceptions of safety and other attributes the beef may embody. For chilled product shelf life will be crucial (and this is an area of advantage of Australia over the US).

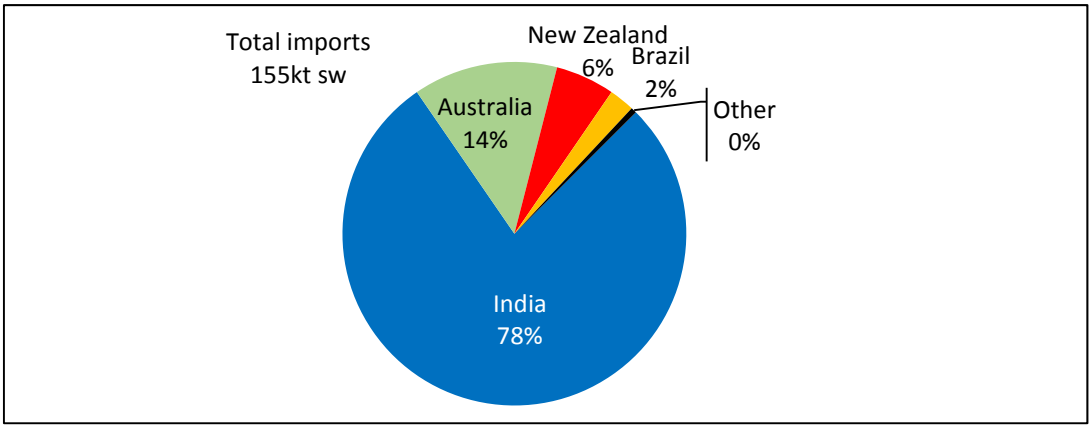
Malaysia

The vast majority of Malaysia's beef import needs, almost 80%, are supplied by India. Buffalo imports from India are distributed widely throughout Malaysia – in wet markets, food service, small butcher shops and modern retail. The entry of Indian buffalo meat into Malaysia first occurred in 1983 and since that time the growth in beef consumption in Malaysia has been substantially met by

the buffalo meat trade with India. Indian buffalo meat is widely accepted by the meat trade in Malaysia and is considered ideal for some Malaysian dishes.

In 2016 Australia supplied Malaysia with 21,000 tonnes of beef of which 1,675 tonnes was chilled product – Australia supplies 98% of Malaysia's chilled beef imports. Australian beef is mostly directed into modern retail or areas of food service.

Figure 33 - Beef imports into Malaysia for 2016



Source: GTIS

Prices for beef imported into Malaysia are shown in Table 25. Prices are below the global average for exporting countries demonstrating that Malaysia mainly takes secondary cuts. For Australia in 2016 47% of product shipped was manufacturing beef, 10% was neck and 10% was striploin.

Table 25 - Unit Beef Import Prices into Malaysia

Supplying country	Average unit export prices (AUD/kg)			
	Chilled Boneless Beef		Frozen Boneless Beef	
	2016	5 year avg	2016	5 year avg
US	N/A	N/A	4.79	3.36
Australia	9.55	16.67	4.16	3.96
Brazil	N/A	N/A	3.56	2.90
India	N/A	N/A	3.25	3.05

Source: GTIS

Philippines

Compared to Malaysia, in the Philippines a more diverse set of beef import supplying countries is evident.

India remains the major beef import supplier into the Philippines, but accounted for just over one-third of Filipino beef imports in 2016. India used to be more dominant in the Philippines – between 2005 and 2010 India supplied almost 60% of the Philippines beef import needs. However, shipments from India to the Philippines started to slip as demand from China (via Viet Nam) strengthened. There are laws in the Philippines which legally restrict sales of Indian buffalo meat to high temperature, high cooking uses (although Indian buffalo meat is often seen – albeit unlabelled – in Filipino wet markets and even in supermarkets in concessionaire butcher stores).

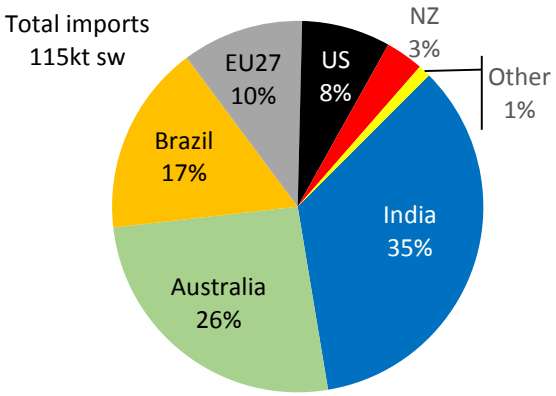
Australia in 2016 supplied just over one-quarter of the Philippines beef import needs. The main uses for this product were hamburger pattie production, other areas of food service and modern retail. Manufacturing trimmings dominated Australian sales to this market, accounting for 87% of product shipped.

It is also notable that there are significant supplies of US beef into the Philippines – US beef is highly regarded in the market. Over the past couple of years sales from the EU to the Philippines have also

increased. This has been on the back of an established trade in pork meat to the Philippines and intermittent supplies from Brazil (who were banned from the market for a period due to BSE).

The major beef dishes in the Philippines are Spanish in influence – mostly involving wet cooking, but there is also a strong influence of western cuisine amongst the upper middle and high income classes – hence the supply of product from the US and also this cooking accounts for a small proportion of sales from Australia.

Figure 34 - Beef Imports into the Philippines for 2016



Source: GTIS

Table 26 shows prices for beef imported into the Philippines. It is to be noted that the average price for Australia beef into the Philippines is less than for Brazilian beef. This is because Australian sales to the market comprise mostly of manufacturing beef, whereas a wide range of Brazilian cuts are supplied into the market (and sold into retail or food service).

Table 26 - Unit Beef Import Prices into the Philippines

Supplying country	Average unit export prices (AUD/kg)			
	Chilled Boneless Beef		Frozen Boneless Beef	
	2016	5 year avg	2016	5 year avg
US	18.11	3.62	8.88	8.20
Australia	13.69	11.18	5.45	4.87
Brazil	N/A	N/A	5.69	5.78
India	N/A	N/A	4.22	3.78

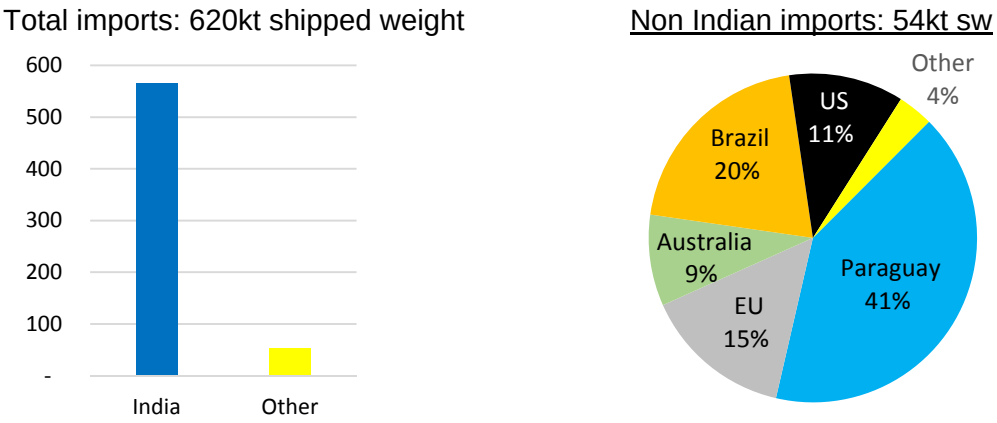
Source: GTIS

The chilled beef trade into the Philippines is almost non-existent. Brazilian and Indian beef is imported frozen and thawed before sale at retail. There are also abundant local supplies – which provide about 70% of Filipino beef consumption needs and which are sold fresh. Virtually all US beef is imported frozen and is directed into food service or sold at retail frozen.

Viet Nam

Like Malaysia, but to an even greater extent, the Viet Nam bovine import market is dominated by Indian buffalo meat (Indian buffalo meat represents over 90% of Viet Nam's bovine meat imports). As previously noted, it is well known that the vast majority of this product is smuggled into China. Perhaps because of this significant differences exist between tonnages that major beef/buffalo supplying countries, such as India and Paraguay, report as being shipped to Viet Nam and tonnages recorded in Viet Nam import statistics. In Figure 35 export data has been used for imports into Viet Nam from India, Paraguay, Brazil, the EU, the US and Australia – Viet Nam import data has only been used for minor supplying countries.

Figure 35 - Beef imports into Viet Nam for 2016



Source: GTIS export statistics from major supplying countries to Viet Nam, Comtrade Viet Nam import statistics used for minor suppliers.

There are several distinct markets for imported beef in Viet Nam. Product from the U.S. and Australia competes at the higher end – in modern retail and higher end food service. Viet Nam's modern retail sector is expanding rapidly through expansions of chains such as Fivimart, Ocean Mart (part of the Viet Namese financial conglomerate Ocean Group), Metro Cash and Carry, Lotte Mart, Big C, Co.opMart (part of the Saigon Union of Trading Cooperatives) and Citimart. Viet Nam's high end food service sector is also expanding – in part driven by a growing tourist trade. The sector includes luxury resorts, hotels, western restaurants, and Asian-themed chain restaurants. To the extent that Indian buffalo meat remains in Viet Nam (rather than being smuggled into China) most is used in factory canteens and other mass institutional settings.

Table 27 shows prices for beef *exported* to Viet Nam from the US, Australia, Brazil and India – unit *import* price data by supplying country was not available for Viet Nam. Over the past five years the unit price for frozen boneless beef exported from Australia to Viet Nam was almost 60% greater than the unit price of exports to Viet Nam from India – with the US being about 25% higher than Australian prices.

Table 27 - Unit prices of beef exported to Viet Nam

Supplying country	Average unit export prices to Viet Nam (AUD/kg) for frozen boneless beef	
	2016	5 year avg
US	$8.46	$7.31
Australia	$5.79	$5.81
Brazil	$5.09	$4.68
India	$4.10	$3.72

Source: GTIS

Implications of competitor analysis for Indonesian produced beef being supplied into other South East Asia markets

Cheap buffalo meat supplies from India dominate bovine meat imports into South East Asia. Australia and the US, however, have shown that it is still possible to compete against these cheap supplies with higher priced product. Successful competition, however, is limited to segments of South East Asian markets more concerned with meat quality in all its dimensions – safety, traceability, provenance, consistency, etc. If beef is to be successfully exported from Indonesia into South East Asian markets using Australian sourced supplies (whether live cattle, quarter beef or value added product) it will be vital that this beef be positioned in such a way as to achieve price premiums over Indian buffalo meat – if not, these exports will be non-existent.

Potential Tariff Advantages

Table 28, Table 29 and Table 30 provide summary tariff rates applying to beef-related imports in major Asian markets for 2018.

- Table 28 provides tariff rates applying to Australian exports;
- Table 29 provides tariff rates applying to exports from Indonesia; and
- Table 30 provides Most Favoured Nation (MFN) tariff rates (that is, tariff rates applying when the product is not shipped under a concessional trade agreement arrangement).

Tariff rates for all ASEAN countries are included in this information. Additionally, tariff rates are included for China (mentioned as a possible longer term market for beef produced in Indonesia), Japan and Korea.

Table 28 – Ad Valorem Tariffs Applying to Australian Beef Exported to Asian Countries

	CHILLED			FROZEN			Meat	Comments
Importing Country	Bone-in Beef	Boneless Beef	Beef Offal	Bone-in Beef	Boneless Beef	Beef Offal	Preparations	
Indonesia	0.0%	5.0%	5.0%	5.0%	5.0%	5.0%	0.0%	All lines reduce to 0% by 2020 under AANZFTA.
Malaysia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Singapore	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Brunei	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Cambodia	15.0%	15.0%	35.0%	15.0%	15.0%	15.0%	15.0%	All lines reduce to 0% by 2021 under AANZFTA, except offals.
Lao PDR	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	All lines reduce to 0% by 2024 under AANZFTA.
Myanmar	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	15.0%	All lines, except meat preparations reduce to 0% by 2020 under AANZFTA.
Vietnam	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	Most lines currently 5%, but reduces to 0% by 2018 under AANZFTA - except meat preparations.
China	7.2%	7.2%	2.4%	7.2%	7.2%	6.0%	2.4%	All lines reduce to 0% by 2024, at the latest, under ChAFTA.
Philippines	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.0%	All lines reduce to 0% by 2019 under AANZFTA.
Thailand	50.0%	50.0%	30.0%	50.0%	50.0%	30.0%	0.0%	All lines reduce to 0% by 2020 under AANZFTA, small TRQ at 0% currently.
Japan	29.3%	29.3%	12.7%	26.9%	26.9%	12.7%	17.0%	Chilled cuts gradually reduce to 23.5% by 2028 and frozen to 19.5% by 2031 under JAEPA.
Korea	26.6%	26.6%	12.0%	26.6%	26.6%	12.0%	48.0%	Chilled and frozen bovine cuts gradually reduce to 0% by 2028 under KAFTA.

Source: DFAT

Table 29 – Ad Valorem Tariffs Applying to Indonesian Beef Exported to Asian Countries

	CHILLED			FROZEN			Meat	Comments
Importing Country	Bone-in Beef	Boneless Beef	Beef Offal	Bone-in Beef	Boneless Beef	Beef Offal	Preparations	
Indonesia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Malaysia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Singapore	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Brunei	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Cambodia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	ASEAN Trade in Goods Agreement (ATIGA).
Lao PDR	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	0.0%	ASEAN Trade in Goods Agreement (ATIGA).
Myanmar	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	ASEAN Trade in Goods Agreement (ATIGA).
Vietnam	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	ASEAN Trade in Goods Agreement (ATIGA).
China	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	ASEAN-China Free Trade Area (ACFTA)
Philippines	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	ASEAN Trade in Goods Agreement (ATIGA).
Thailand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	ASEAN Trade in Goods Agreement (ATIGA).
Japan	38.5%	38.5%	21.3%	38.5%	38.5%	21.3%	21.3%	ASEAN-Japan Comprehensive Economic Partnership Agreement (AJCEPA)
Korea	32.0%	32.0%	5.0%	40.0%	40.0%	14.4%	57.6%	ASEAN-Korea Free Trade Area (AKFTA)

Indicates Beef Product from Indonesia has a tariff advantage compared to product exported from Australia

Source: ASEAN.org

Table 30 – MFN Ad Valorem Tariffs

	CHILLED			FROZEN			Meat	Comments
Importing Country	Bone-in Beef	Boneless Beef	Beef Offal	Bone-in Beef	Boneless Beef	Beef Offal	Preparations	
Indonesia	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
Malaysia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Singapore	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Brunei	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Cambodia	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	
Lao PDR	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	
Myanmar	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	
Vietnam	20.0%	14.0%	8.0%	20.0%	14.0%	8.0%	35.0%	
China	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	
Philippines	10.0%	10.0%	7.0%	10.0%	10.0%	7.0%	35.0%	
Thailand	50.0%	50.0%	30.0%	50.0%	50.0%	30.0%	30.0%	
Japan	38.5%	38.5%	25.0%	38.5%	38.5%	25.0%	21.3%	50% MFN for chilled & frozen beef but the applied tariff is 38.5% until a safeguard volume is reached
Korea	40.0%	40.0%	18.0%	40.0%	40.0%	18.0%	72.0%	

Source: Various

Representative tariffs are shown under each beef-related category. Particularly for meat preparations and, to a lesser extent, beef offals, different tariffs may apply depending on the exact specifications of

the product. In general the "other" category was used when selecting tariffs shown in the "meat preparation" and "offal" columns (as opposed to using a specific meat preparation category or type of offal).

It can be observed from Table 28 and Table 29 that Indonesia has a tariff advantage relative to Australia for supplying beef products into a number of markets mostly in the ASEAN region, but also into China. However, three important provisos need to be noted:

- Firstly, the tariff differences are mostly quite small and will disappear in the near future as the AANZFTA tariff reductions are progressively applied. Currently the largest tariff difference relates to Thailand, but under AANZFTA, tariffs for Australian beef products entering into Thailand will be set at 0 by 2020. In all other ASEAN countries, except the Lao People's Democratic Republic, tariffs on Australian beef imports will be set to zero by no later than 2021. Therefore Indonesia's current tariff advantages to these markets will have been eliminated by 2021.
- Secondly, the lower tariffs applying to beef produced in Indonesia under ASEAN (and also under the trade agreements that ASEAN has made with other countries) have conditions attached. Normally in trade agreements a chapter is devoted solely to rules of origin (ROO). For products not solely produced in the country of origin, under AESAN the ASEAN agreed tariff rates are deemed still to apply provided that (a) the regional value added content (RVC) is at least 40% OR (b) a change in tariff classification occurs in the production of the product. For the purposes of this discussion transformation of live cattle into beef meets the CTC criteria, as does transformation of beef into meat preparations, since both involve a change in HS chapter headings. Deboning beef, however, does not involve the product changing chapter headings; neither does simply producing portion controlled product from primals. This is a matter that may need additional investigation. If the ASEAN rates do not apply because a product has undergone insufficient transformation to be viewed as originating in an ASEAN country, higher Most Favoured Nation (MFN) rates will apply.
- Thirdly, China's market access requirements are exacting. These include approval of individual plants by Chinese authorities which can take many attempts to achieve.

Non-Tariff Trade Issues

Almost every country has non-tariff trade compliance restrictions that apply to trade in beef.

These can be related to animal disease status, phyto-sanitary conditions, compliance with specific country requirement (e.g. Halal certification) and volume controls by way of licensing and quotas.

Many countries require processing plants in the exporting country to be inspected and approved, while some accept that if approved for export to markets such as USA or Europe then the plants are assumed to be acceptable.

Of the countries of interest with regard to export from Indonesia it is worth noting that both Malaysia and China require plants to be inspected and approved. This process can take some considerable time even when a country to country protocol is already in place. It would not be unusual for plants to take 18 months to two years to be approved by an importing country.

Country to country protocols will also need to be established prior to plant approval and these will be Government to Government negotiations which may also take some considerable time and will require the support of the Indonesian Ministries of Trade and Agriculture. Discussions will be required with these Ministries to establish the appetite to negotiate country to country protocols and support the approval for an export beef processing plant in Indonesia. Typical Non-tariff requirements for a variety of countries is provided in Table 31.

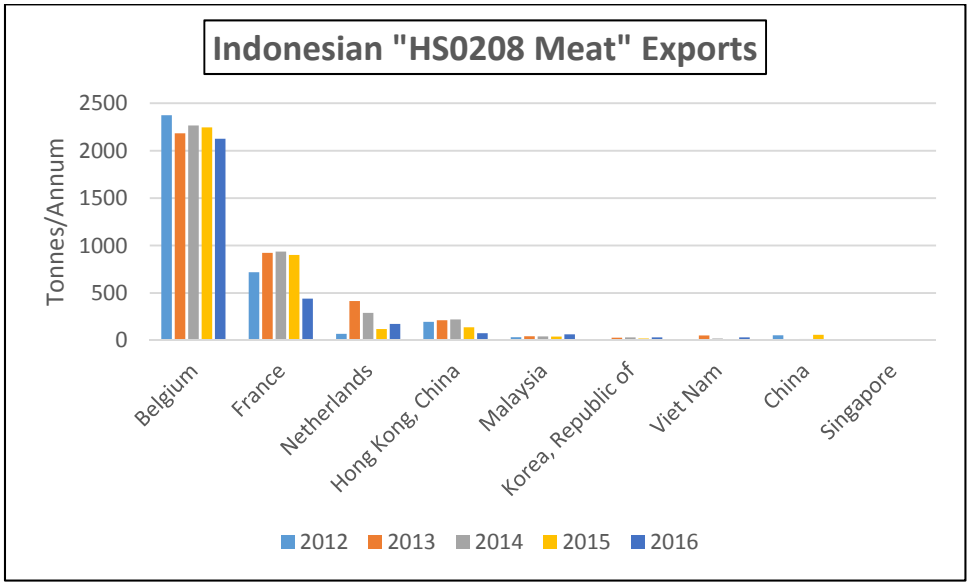
Table 31 – Typical Non-tariff Compliance Requirements

Country	Base Requirement	Detail
Philippines	Imports of meats of bovine animals are subject to minimum access volume (MAV) and tariff-rate quotas (TRQs). Administrative Order (A.O.) 9 of 1996, as amended by A.O. 8 of 1997 and A.O. 1 of 1998 established the rules for implementing these TRQs and allocating import licenses.	All importations from all sources of meat of bovine, swine, sheep, goats, horses, asses, mules and hinnies, fresh, chilled or frozen, require Veterinary Quality Clearance (VQC). It is a measure being implemented to prevent the entry of disease carrying, contaminated, and/ or adulterated meat and meat products which could endanger the lives and safety/ health of the consuming public and lead to potentially serious economic consequences to the livestock, poultry and related industries. It is consistent with the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPs). Therefore it is non-discriminatory.
Malaysia	Import licence is required to ensure SPS requirements are fulfilled.	Intention is to regulate the trade of all animals and animal products in the context of sanitary requirement, including the protection of animal life and health and the protection of human health and to ensure fulfilment of SPS and Halal requirements.
Myanmar	Import license is required for all importation and all requirements and regulations of the ministry concerned.	Imports are subject to inspection requirements by the Ministry of Livestock and Fisheries to protect public health from epidemic of harmful diseases e.g. foot and mouth diseases and anthrax. They shall meet all requirements and regulations of the ministry concerned. Health Certificate must also accompany every shipment of importation. They are also subject to quality and standard requirements by the Food and Drug Administration (FDA).
Thailand	Imports are subject to inspection requirements by the Department of Livestock Development (DLD) to protect public health from epidemic of harmful diseases e.g. foot and mouth diseases, BSE and anthrax. They shall meet all requirements and regulations of the DLD. Health Certificate must also accompany every shipment of importation. They are also subject to quality and standard requirements by the Thai Food and Drug Administration (FDA).	
United Arab Emirates	Animals should be slaughtered in approved slaughterhouses in the exporting State in accordance with Islamic requirements	Exporting country Should have a mandatory reporting program and investigation for epidemiological and infectious diseases in accordance with the conditions of the Code of the World Organization for Animal Health

Source: ITC MacMap

Indonesia's current EOI status is sound in that it is a Foot and Mouth Disease free country and currently exports Product: "HS 0208 - Meat and edible offal of rabbits, hares, pigeons and other animals, fresh, chilled or frozen" products to a number of markets (see Figure 36) and this should provide a starting format for progressing to gain market access to various markets for beef products.

Figure 36 - Indonesia Exports of Special Meat Products (HS0208)



Source: UN Comtrade

Annex 6 - Raw Material Sourcing for Indonesian Processing

Australian Cattle Projections

Meat and Livestock Australia (MLA) publishes Australian Cattle Industry Projections on an annual basis with quarterly updates. In the July 2017 Update the following projections were indicated:

- Poor winter rainfall in southern Australia following the dry autumn), 20-year low cow and heifer slaughter and volatile global market activity resulted in minor revisions in the MLA 2017 Cattle Industry Projections.
- The slowly building national cattle herd indicates the peak of the cattle price surge is more than likely behind us, and downward pressure will continue to slowly mount for the foreseeable future.
- Australian cattle prices are unlikely to drop back to pre-2013 levels, buoyed by lingering restocker activity when pasture conditions eventually improve, along with the improbability of a strengthening A$ and reducing tariff regimes into Japan, Korea and China.
- As the year progresses though, beef production is expected to slowly start increasing again and, as this eventuates, some downward pressure is likely to be placed on the market.
- Expectations are for a further 3% decline in Australian cattle slaughter in 2017, to 7.1 million head. While this is a significant fall, it's not nearly to the same extent that was seen over the past 12 months, when an extremely rare 19% drop occurred.
- The number of cattle on feed is forecast to remain constrained by the still very high feeder cattle prices, which closed 2016 up 80% from the pre-surge average levels. While entry cattle prices remain dear, solace comes from cheaper Australian feed grain prices and, under this scenario, forecasts are for cattle to stay on feed for 10-30% longer than what otherwise would have been the case. The overall outcome is the expectation for numbers on feed to range from 700,000-750,000 head/quarter, and turning off just over 2.5 million head (35% of total adult slaughter).

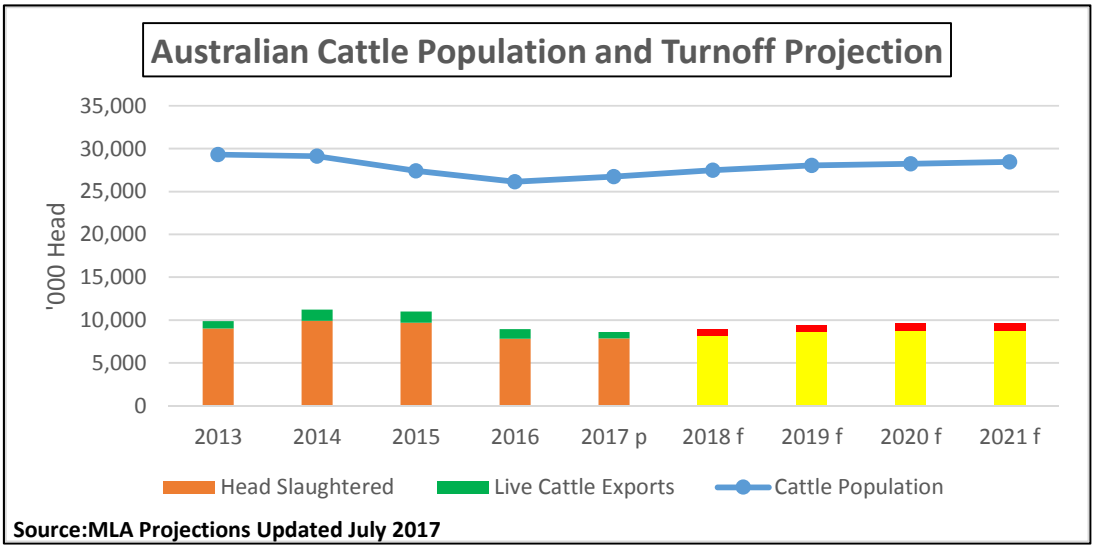
Table 32 presents the projections through to 2021 in tabulated form. Figure 37 provides the same data in graphical form.

Table 32 - MLA Projections (Updated July 2017)

	2013	2014	2015	2016	2017 *p*	2018 *f*	2019 *f*	2020 *f*	2021 *f*
Cattle Population	29,291	29,100	27,413	26,143	26,747	*27,480*	*28,025*	*28,206*	*28,453*
Head Slaughtered	9,034	9,914	9,674	7,830	7,875	*8,240*	*8,580*	*8,800*	*8,810*
Live Cattle Exports	850	1,292	1,332	1,126	750	*750*	*775*	*800*	*800*

Source: MLA Projections

Figure 37 - MLA Projections (Updated July 2017)

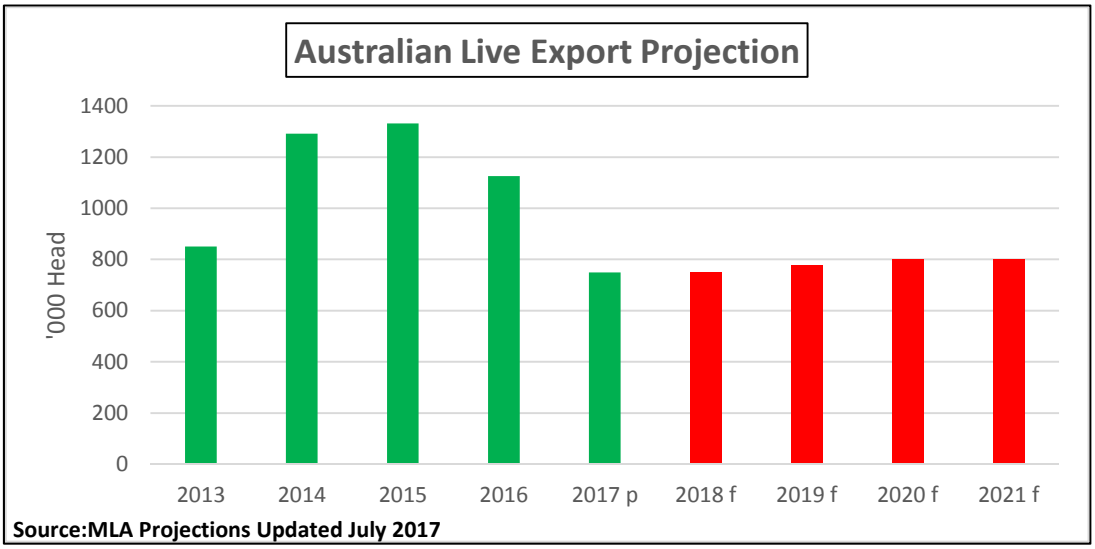


Source: MLA Projections

Live Cattle Exports from Australia

The live cattle export data has been extracted from the projections and is presented in Figure 38. This demonstrates that live cattle exports over the period up to 2021 are projected by MLA to be stable at around 800,000 head/annum.

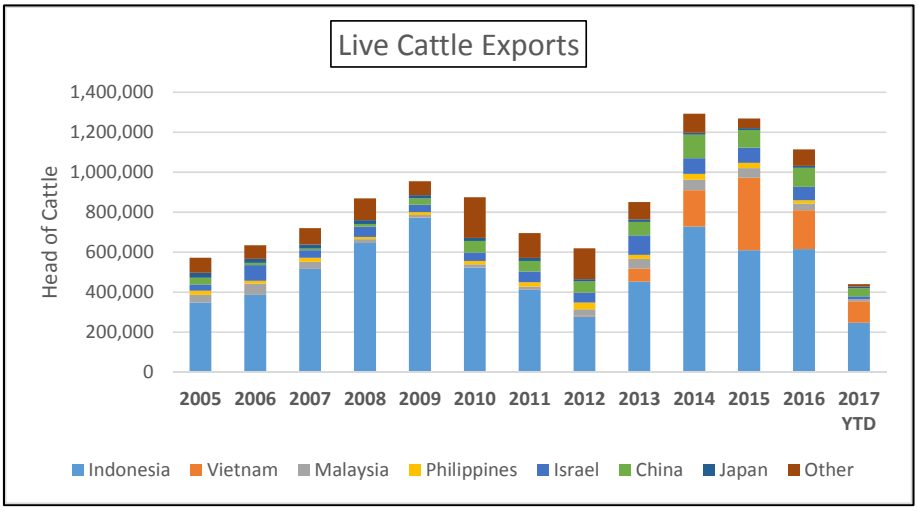
Figure 38 - MLA Live Export Projections (Updated July 2017)



Source: MLA Projections

MLA also publishes monthly livestock exports to all countries. The data in Figure 39 has been extracted from the mid-2017 trade summary. It clearly shows that Indonesia dominates that market for live cattle exports from Australia and has ranged from a market share of 45% to 56% over the past five years.

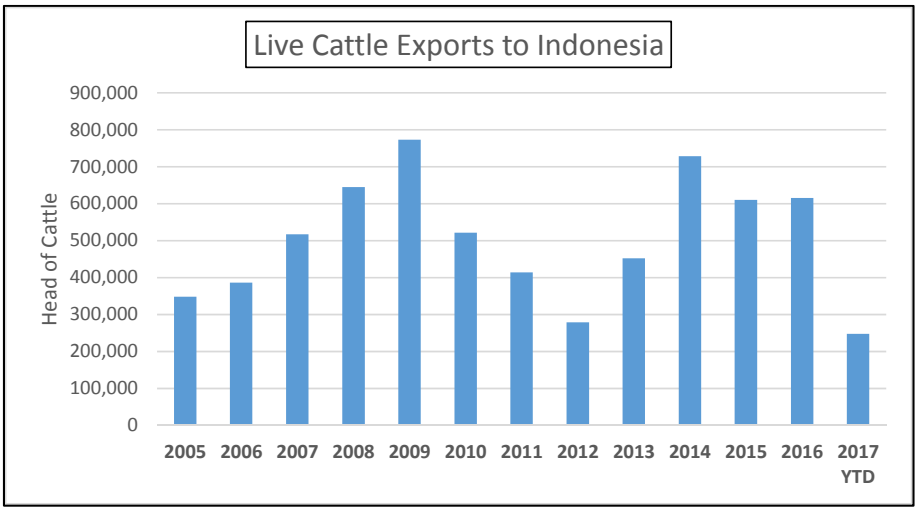
Figure 39 - Live Cattle Exports from Australia 2005-2017



Source: MLA Monthly Live Export Statistics

Figure 40 shows the cattle exported from Australia to Indonesia over the period 2005 to mid-2017. In the period 2014-2016 the data demonstrates that between 600,000 and 700,000 cattle were exported live to Indonesia. Should live cattle exports to Indonesia continue at this level then they would comprise in the region of 75% to 90% of the MLA projected exports.

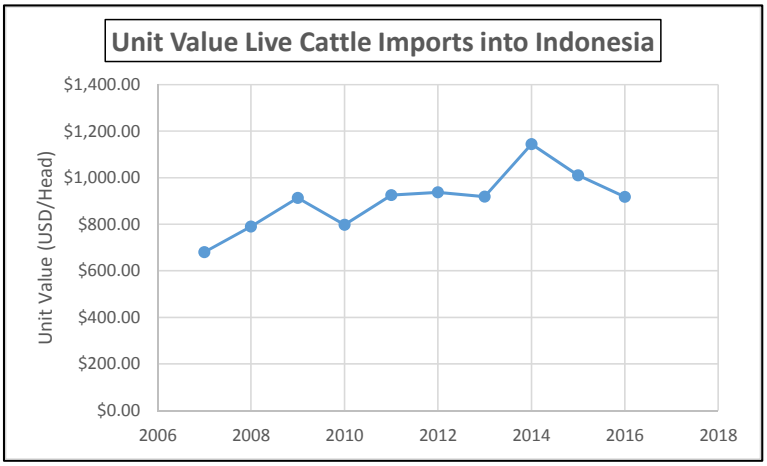
Figure 40 – Live Cattle Exports from Australia to Indonesia (2003 to 2017p)



Source: MLA Monthly Live Export Statistics

Earlier data shown at Figure 4 provides an indication of the feeder steer prices entering Indonesia. In the past three years these have been around USD1000/head.

Figure 41 - Australian Feeder Steers Indonesian Import Price



Source: UN Comtrade

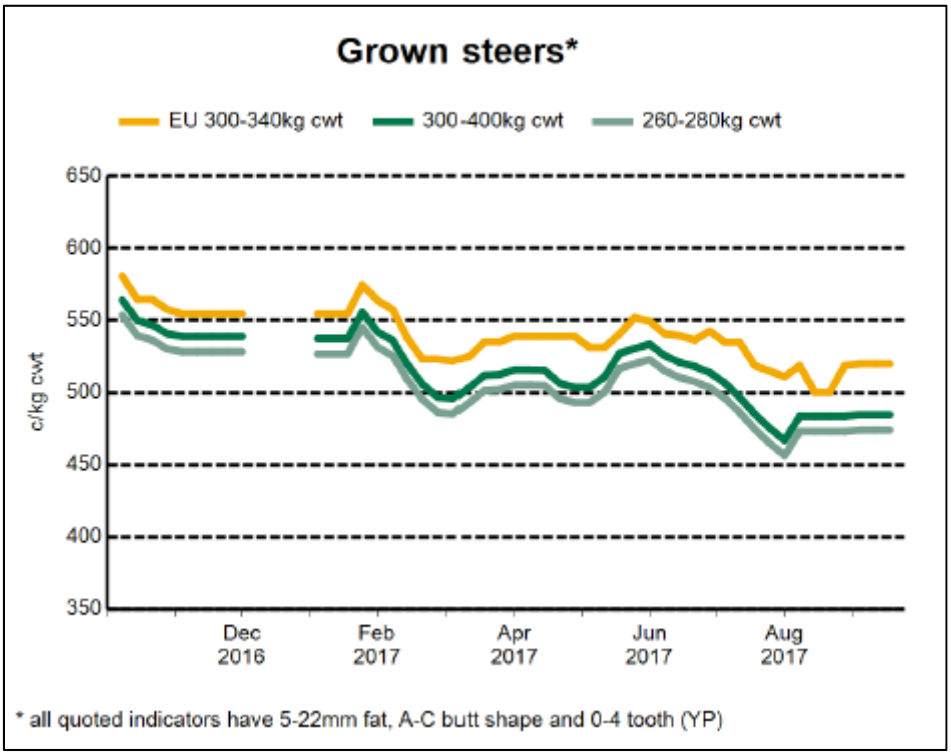
Cattle Prices

The Australian Indicator price of interest to compare with feed finished steers entering a processing plant in Indonesia is the 260-280kg carcase weight (CW) Grown Steer category.

Cattle prices for the most recent 12 months for Grown Steers in QLD based on NLRS "Over-the Hooks" (OTH) prices are provided in Figure 42. From Figure 42 the indicator price has been summarised and adjusted to USD equivalents in Table 33. The per kg price in USD has then been extended to provide an indicator price for a 280kg carcase (expected carcase weight after feeding in Indonesia).

Based on this analysis, cattle that are equivalent to the category expected to be sent to the abattoir in Indonesia have cost an Australian based meat processor in the region of USD1,000 to 1,100 over the past 12 months.

Figure 42 – Over-the-Hooks Grown Steer Prices - QLD



Source: MLA NLRS Over the Hooks Indicator Price Reports

Table 33 – Grown Steers Indicator Prices in USD/kg

Australian Grown Steer Price				
Date	AUD/kg	Exchange Rate	USD/kg	USD/head for a 280kg Carcase
Oct-16	$5.00	1.313	$3.81	$1,066.16
Nov-16	$5.30	1.329	$3.99	$1,117.02
Dec-16	$5.30	1.362	$3.89	$1,089.53
Jan-17	$5.30	1.346	$3.94	$1,102.89
Feb-17	$5.40	1.305	$4.14	$1,158.34
Mar-17	$4.90	1.312	$3.73	$1,045.59
Apr-17	$5.00	1.326	$3.77	$1,056.08
May-17	$4.95	1.345	$3.68	$1,030.19
Jun-17	$5.20	1.326	$3.92	$1,098.13
Jul-17	$4.75	1.284	$3.70	$1,035.46
Aug-17	$4.60	1.263	$3.64	$1,019.71
Sep-17	$4.75	1.254	$3.79	$1,060.47
			Average	**$1,073.30**

Beef Exports from Australia

Australia exports beef to some 100 different markets, however, the volumes per market falls considerably after the Top 5 destinations which are each over 50,000 tonnes shipped weight per annum (USA, Japan, South Korea, China and Indonesia).

Markets which are considered to be of interest for export of Australian beef from Indonesia are circled in green in Figure 43 and include China, Taiwan, Philippines, Saudi Arabia, Malaysia, Dubai, Singapore, Thailand, Viet Nam, Hong Kong and Papua New Guinea.

Figure 43 - Top 20 Markets for Australian Beef

Source: MLA Market Statistics

Figure 44 and Figure 45 provide information on Australian exports to countries of interest determined above and provide chilled and frozen exports broken down into Pack-type. As this provides a picture of export of higher quality primal cuts versus secondary cuts and manufacturing products.

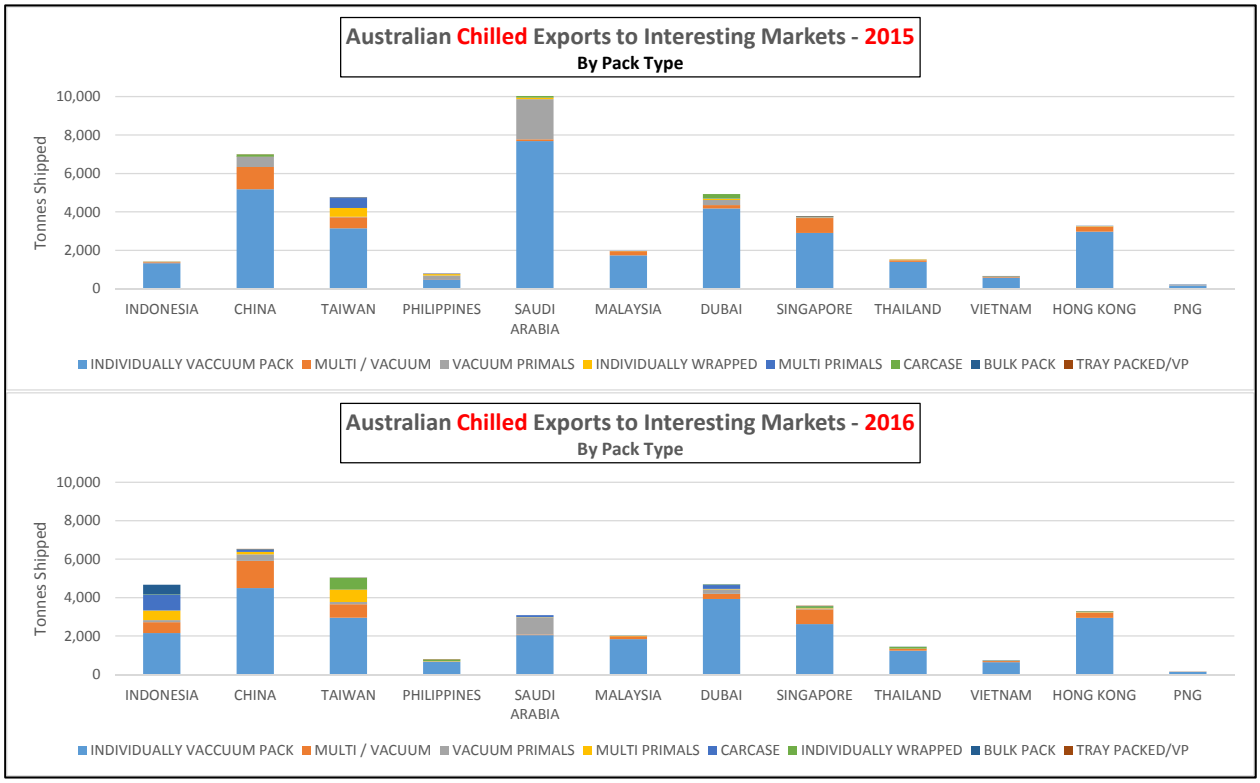
It can be observed that chilled beef markets are dominated by individually vacuum packed primal cuts and that the market sizes for chilled product in total are between 2,000 and 10,000 tonnes/annum.

While Bulk Pack is the most important component of the frozen beef market the situation is more complex. Markets like China take a considerable amount of individually vacuum packed, individually wrapped and layer packed product in frozen form. This is a common strategy for developing markets as frozen product can be handled in a robust and somewhat unforgiving frozen cold chain with a long shelf life compared to a chilled cold chain that must be well controlled and even then only has a shelf life of a few months. The size of the frozen markets for Australia beef products can be small in some cases but go up to over 50,000 tonnes/annum for Indonesia and over 80,000 tonnes/annum for China.

What is important is that there is a considerable difference in most markets with regard to the beef products delivered in chilled and frozen form:

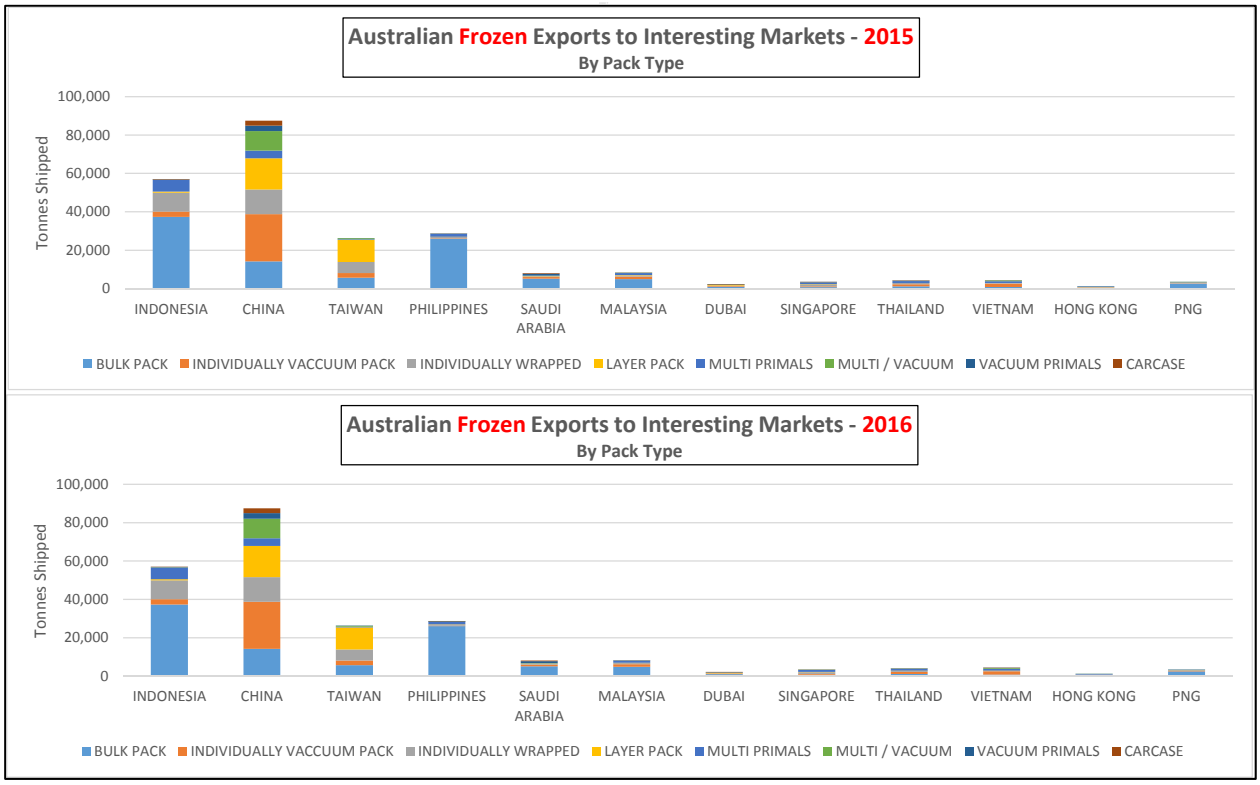
- **Chilled Beef Products** – Are dominated by premium value individually vacuum packed primal cuts
- **Frozen Beef Products** – Are dominated by manufacturing packs and secondary primal cuts.

Figure 44 - Australian Chilled Exports by Pack Type



Source: Export Cuts Database

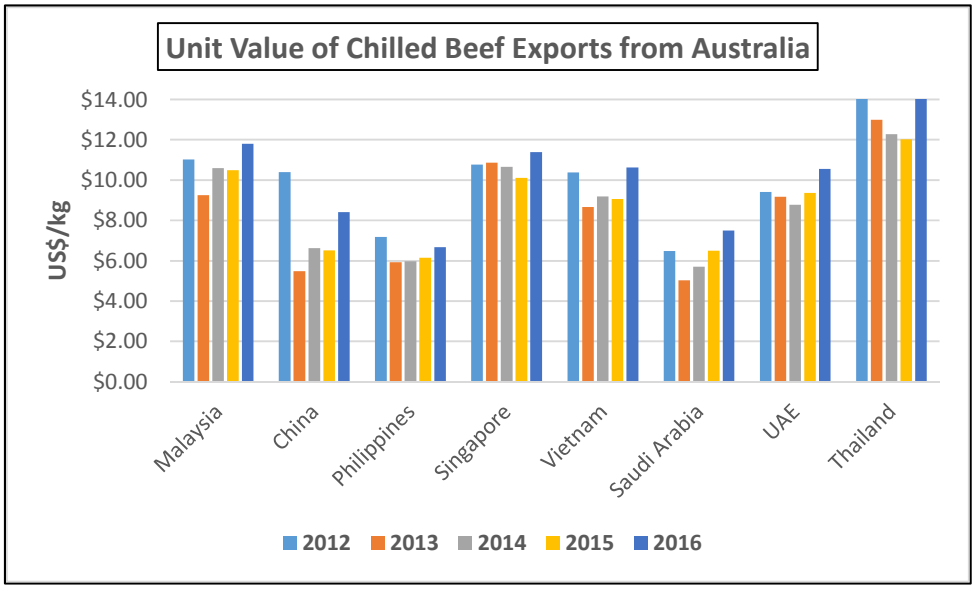
Figure 45 - Australian Frozen Exports by Pack Type



Source: Export Cuts Database

Due to the differences in product types there is a significant price differential between those products supplied in chilled form and those provided in frozen form (see tables at Figure 46 and Figure 47).

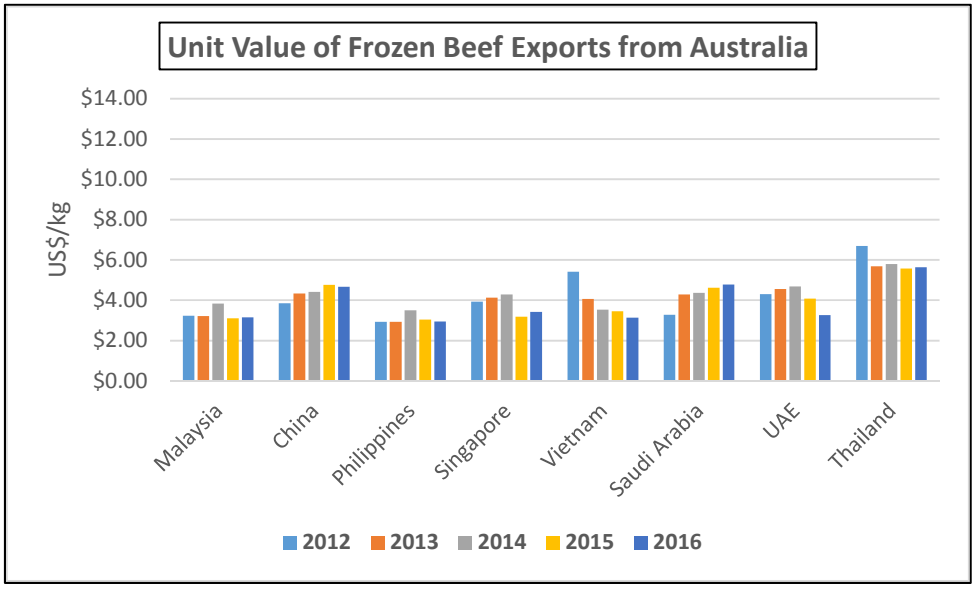
Figure 46 - Unit Prices for Chilled Beef Products Exported from Australia



	CHILLED BEEF PRODUCTS ($US/kg)							
	Malaysia	China	Philippines	Singapore	Vietnam	Saudi Arabia	UAE	Thailand
2012	$11.03	$10.40	$7.18	$10.77	$10.38	$6.49	$9.41	$15.42
2013	$9.25	$5.49	$5.94	$10.87	$8.67	$5.03	$9.17	$12.99
2014	$10.59	$6.62	$5.98	$10.67	$9.19	$5.71	$8.78	$12.28
2015	$10.49	$6.51	$6.16	$10.10	$9.07	$6.50	$9.37	$12.03
2016	$11.80	$8.42	$6.67	$11.39	$10.63	$7.49	$10.55	$14.94
Average	$10.63	$7.49	$6.38	$10.76	$9.59	$6.24	$9.46	$13.53

Source: UN Comtrade Database

Figure 47 - Unit Prices for Frozen Beef Products Exported from Australia



	FROZEN BEEF PRODUCTS ($US/kg)							
	Malaysia	China	Philippines	Singapore	Vietnam	Saudi Arabia	UAE	Thailand
2012	$3.22	$3.84	$2.92	$3.92	$5.41	$3.28	$4.31	$6.70
2013	$3.21	$4.34	$2.92	$4.14	$4.07	$4.29	$4.56	$5.69
2014	$3.83	$4.42	$3.50	$4.28	$3.53	$4.37	$4.69	$5.79
2015	$3.11	$4.77	$3.03	$3.18	$3.45	$4.63	$4.08	$5.58
2016	$3.14	$4.67	$2.94	$3.41	$3.13	$4.77	$3.27	$5.63
Average	$3.30	$4.41	$3.06	$3.79	$3.92	$4.27	$4.18	$5.88

Source: UN Comtrade Database

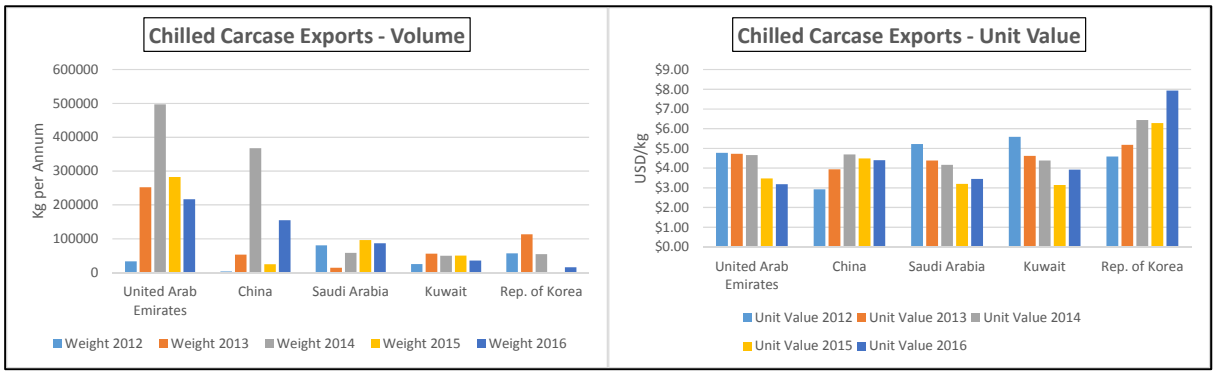
It can be observed from this data that chilled cuts which are dominated by individually wrapped premium primals fetch in the region of USD8-12/kg while frozen product which is dominated by secondary cuts and manufacturing beef fetch in the region of USD4-6/kg.

Bone-In Carcase Exports

A possible business concept for Indonesia would be to initially establish a facility that imports bone-in carcase beef from Australia and processes the carcase into primal cuts and manufacturing beef products for re-export. The value and volume of bone-in carcase beef from Australia is therefore of interest.

Figure 48 (Chilled) and Figure 49 (Frozen) provide profiles for the five biggest export destinations for carcase exports in chilled and frozen form.

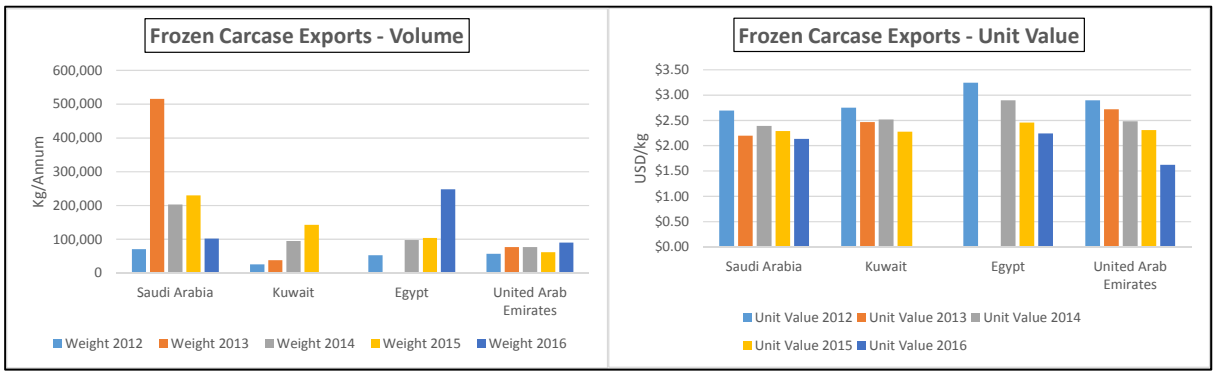
Figure 48 – Chilled Carcase Volumes and Unit Values



Source: UN Comtrade Database

It can be observed that the volumes for both chilled and frozen carcases are only a few hundred tonnes/annum and are quite volatile, varying significantly on a year on year basis. This would normally indicate supply into a spot market rather than meeting a longer term market demand.

Figure 49 - Frozen Carcase Volumes and Unit Values



Source: UN Comtrade Database

Nevertheless it is important to consider the price profiles.

- Frozen carcase product will be delivered by sea-freight and is generally in the range of USD2.00-3.00/kg.
- Chilled carcase product will almost always be delivered by airfreight and this can be seen in the price which is in the range of USD4.00-6.00/kg significantly higher than the frozen price as would be expected.
- There will of course also be price variations based on carcase specification (weight, age, condition, etc).

Annex 7 – Further Processing Data

The following tables and figures provide prices and trends for red and white offal, rendered products and hides. Table 34 and Table 35 show typical co-product values that are achieved in the Australian market currently. Values in Indonesia may be higher owing to the fact that fat and bone material achieves a higher price there than in Australia.

Table 34 – Typical Co-product Values (AUD/head)

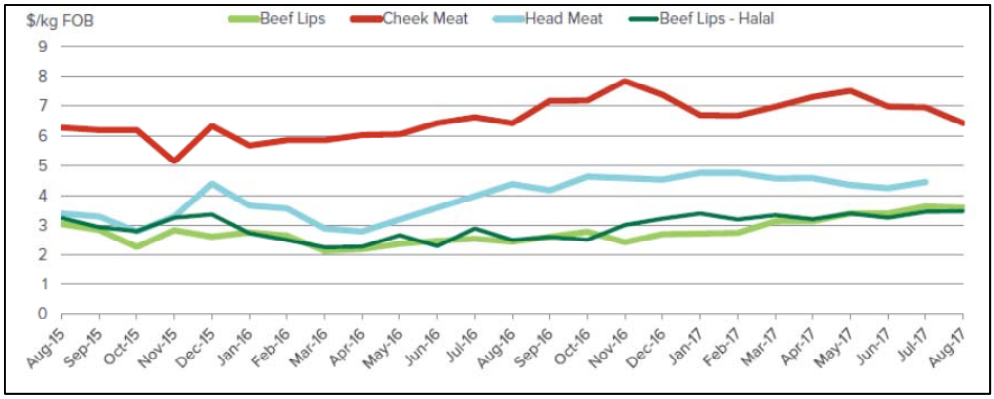
Typical Beef Coproducts Values AUD/head		
	Typical Low	**Typical High**
Offal	$85	$105
Hide	$50	$65
Rendered Products	$65	$75
Total	**$200**	**$245**

Table 35 – Beef Red and White Offal Prices August 2017[10]

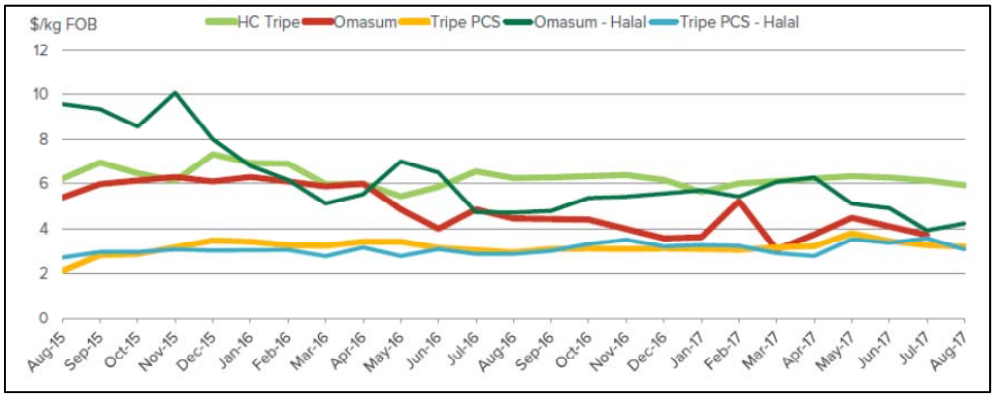
Offal Items	Prices Aug 2017	Range ±
Beef Lips	$3.60	
Beef Lips - Halal	$3.48	$1.07
Cheekmeat	$6.43	$1.80
Cheekmeat - Halal	$6.44	$1.65
Diap. Membrane	$4.24	$1.70
Hc Tripe	$5.93	$0.60
Hc Tripe - Halal	$6.15	$2.00
Headmeat - Halal	$4.08	$0.75
Heart	$1.83	
Heart - Halal	$1.84	$0.20
Heart - Aorta - Halal	$6.40	$2.00
Kidneys	$0.98	
Kidneys- Halal	$0.93	$0.25
Ligamentum	$3.98	$1.15
Liver	$1.00	
Liver - Halal	$1.13	$0.25
Lungs	$2.88	
Lungs - Halal	$2.19	$0.20
Omasum - Halal	$4.23	$2.29

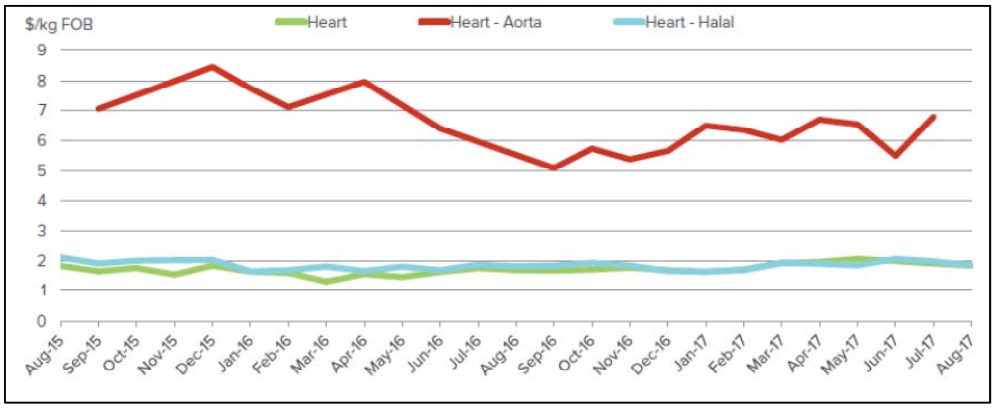
Offal Items	Prices Aug 2017	Range ±
Rum.Pill < 500	$6.65	
Rum.Pill < 500 - Halal	$7.55	$1.00
Rum.Pill > 500 < 700	$9.53	
Rum.Pill > 500 < 700 - Halal	$13.02	$0.70
Rum.Pill > 700	$15.40	
Rum.Pill > 700 - Halal	$16.65	$1.90
Tail	$8.45	
Tail - Halal	$8.54	$1.80
Tendons - Halal	$6.98	$1.03
Thickskirt	$6.36	$2.80
Thickskirt - Halal	$6.50	
Thinskirt	$5.50	$1.80
Thinskirt - Halal	$5.60	
Tongue Root Fillet	$5.18	$2.65
Tongue Root Meat	$2.87	$1.80
Tongue Root Meat - Halal	$2.56	$0.75
Tongue SW	$9.68	
Tongue SW - Halal	$10.00	$4.05
Tripe Pieces	$3.20	
Tripe Pieces - Halal	$3.08	$0.55

Figure 50 - Trends in Beef Offal Prices[10]



[10] MLA Co-product Market Report - September 2017


$/kg FOB
HC Tripe
Omasum
Tripe PCS
Omasum - Halal
Tripe PCS - Halal
12
10
8
6
4
2
0
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17


$/kg FOB
Heart
Heart - Aorta
Heart - Halal
9
8
7
6
5
4
3
2
1
0
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
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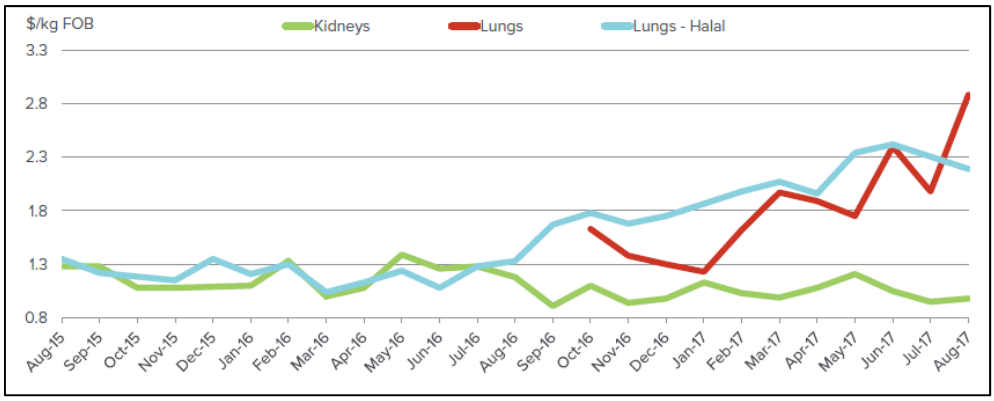
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17


$/kg FOB
Kidneys
Lungs
Lungs - Halal
3.3
2.8
2.3
1.8
1.3
0.8
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
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Jun-17
Jul-17
Aug-17

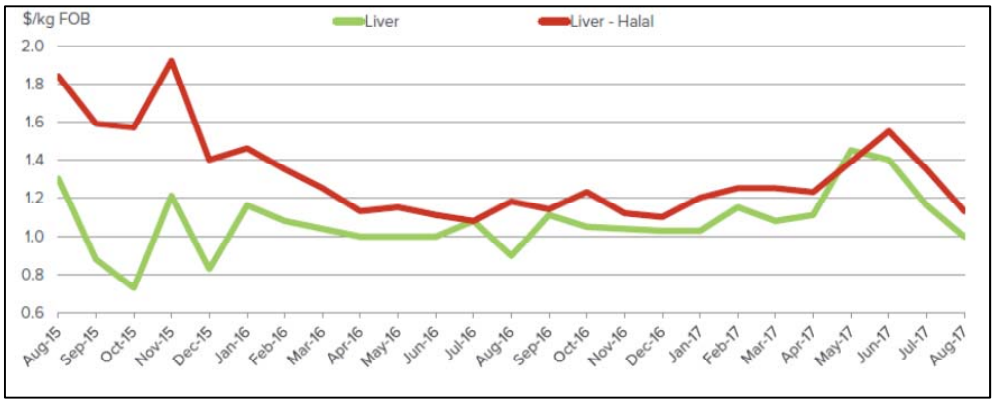

$/kg FOB
Liver
Liver - Halal
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17

Figure 51 - Trends in Rendered Co-products Prices[10]

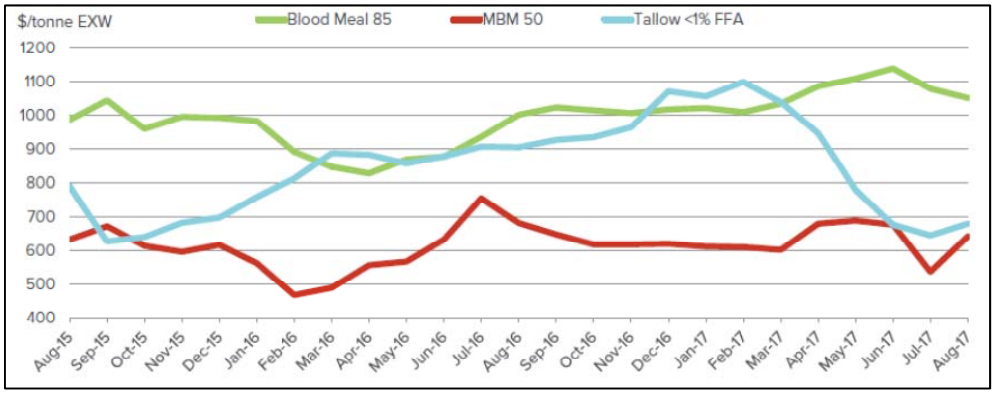


Figure 52 - Trends in Hide Prices (East Coast ex Works)[10]

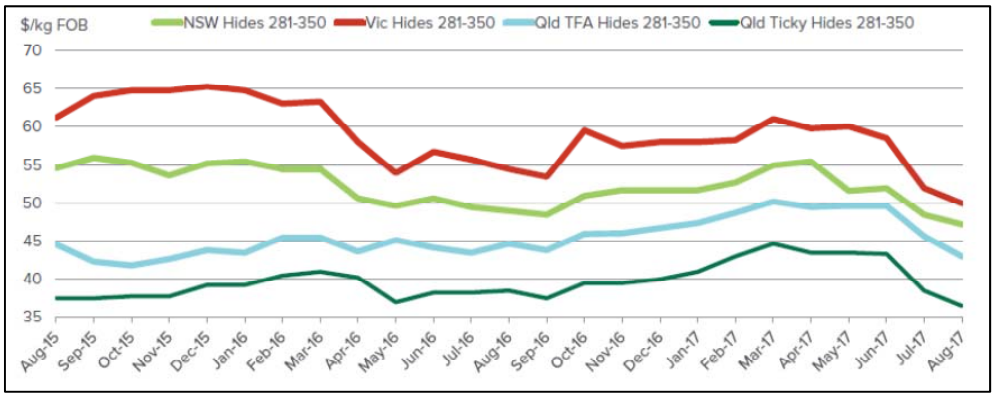
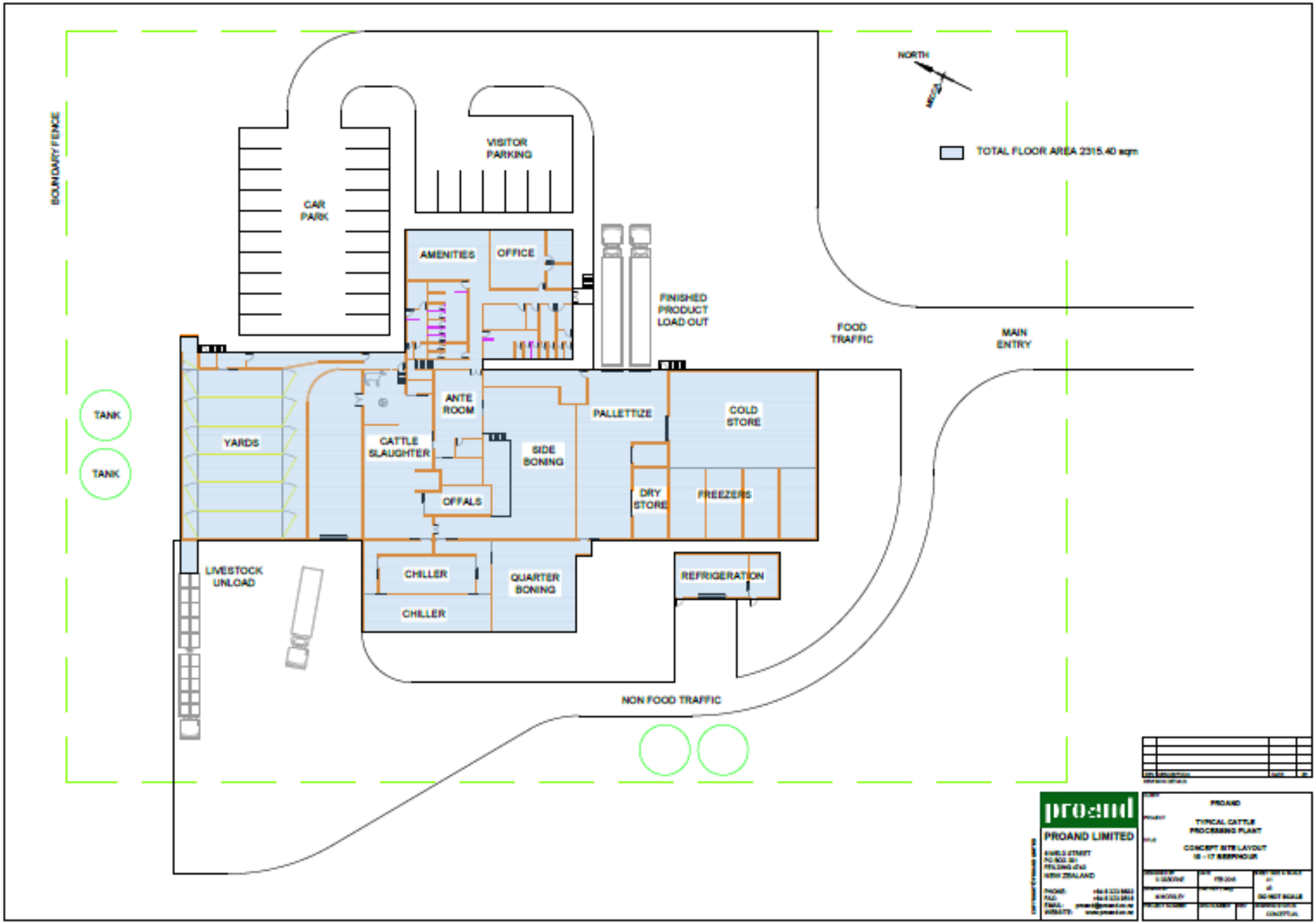


Table 36 – Australian Meat Processing Utilities Consumption

AUSTRALIAN UTILITIES CONSUMPTION IN INTEGRATED BEEF OPERATIONS	
Water Consumption Combined Operations - Litre/Head	2,200
Electricity Consumption Combined Operations - kWh/Head	80
Fuel Consumption Combined Operations - MJ/Head	820

Source: ProAnd Benchmark Data

Annex 8 – Concept Drawing of Beef Plant to Process 15 Cattle/hour

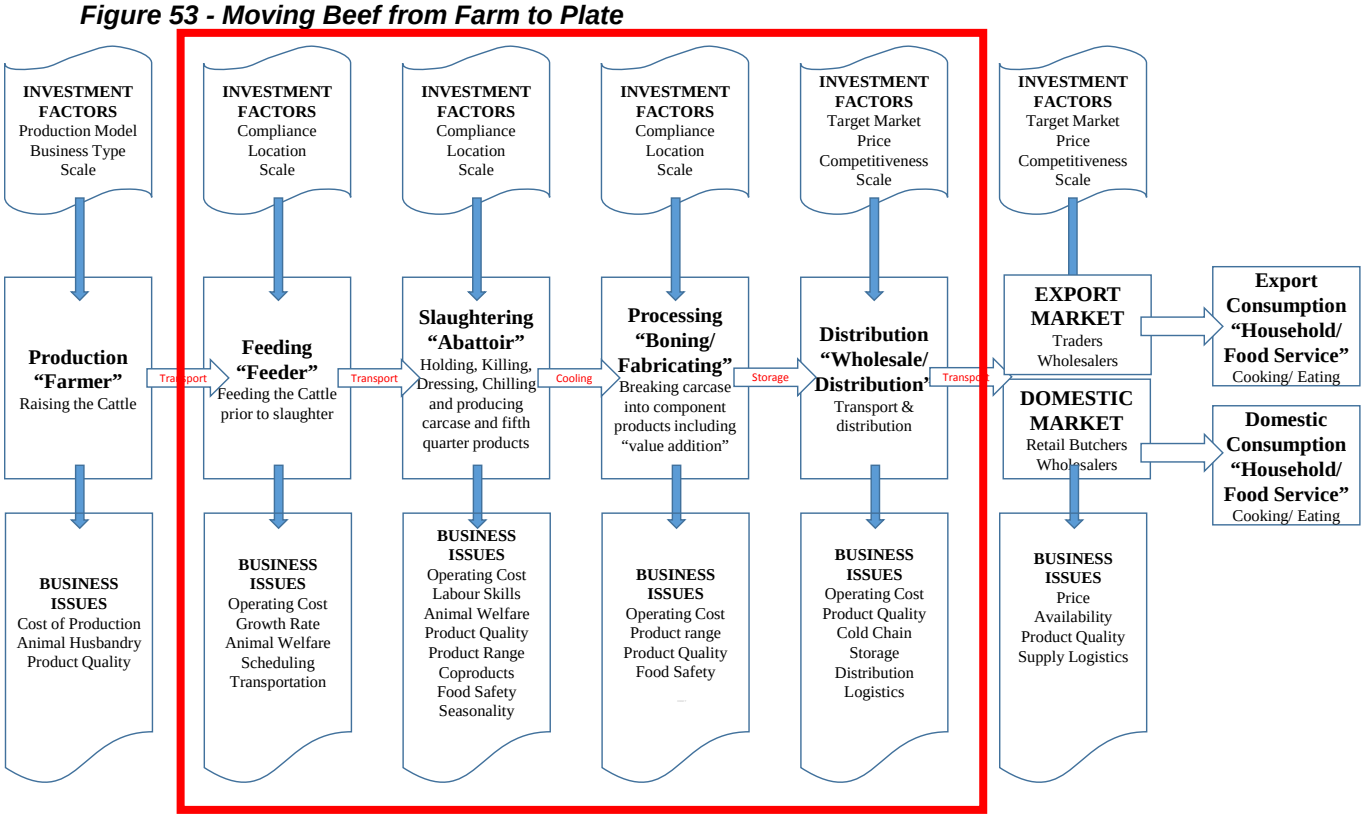


Annex 9 – Detailed Analysis of Business Concepts

Beef production is a series of business processes that can be stand-alone or integrated.

The various stages of getting beef products to market and the critical investment factors and business issues are outlined in Figure 53.

Figure 53 - Moving Beef from Farm to Plate



The context of this study is to investigate the possible feasibility of undertaking the business processes included in the red box above in Indonesia by:

- Making use of live cattle sourced from production properties in Australia,
- Making use of beef products sourced from Australian processors and
- Taking advantage of opportunities provided in Indonesia to support adding value, manufacturing and re-export i.e. Bonded Zone opportunities (see Section 2).

Several business concepts, in increasing degrees of business complexity can be considered:

1. Processing of Australian sourced manufacturing beef in Indonesia into retail ready products for export and domestic markets.
2. Processing Australian sourced beef primal cuts in Indonesia into customer ready products for export and domestic markets;
3. Processing of Australian sourced bone-in beef products in Indonesia into primals and customer ready products for export and domestic markets;
4. Feeding Australian sourced feeder cattle and processing in Indonesia into primals and customer ready products;

The four concepts are addressed in the following paragraphs.

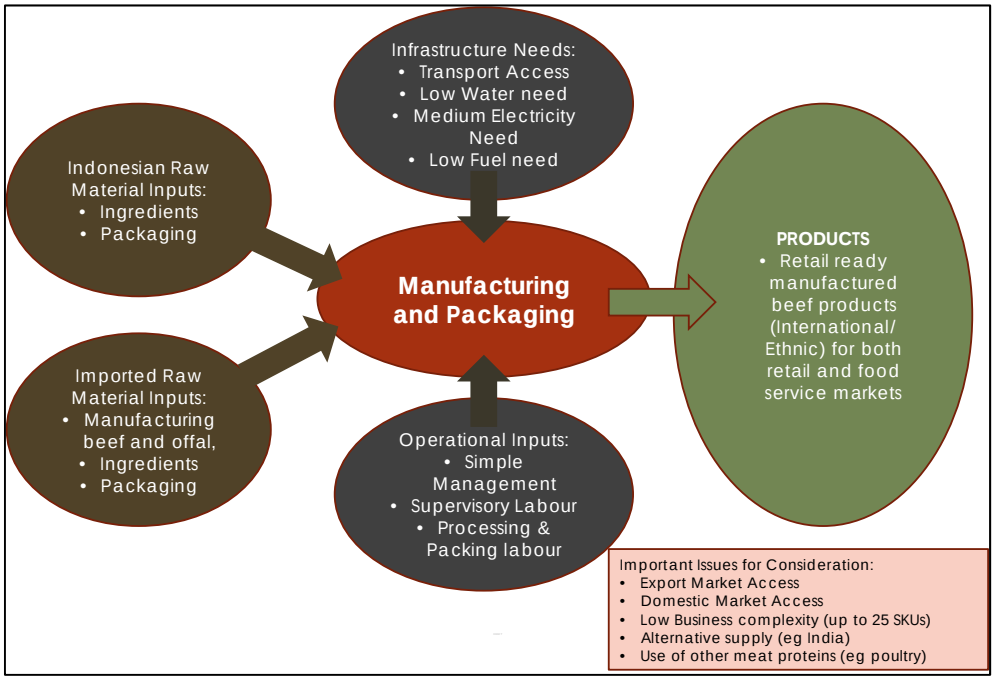
Other opportunities such as tanning preserved hides sourced from Australia, manufacturing of meat processing consumables (e.g. ingredients) and equipment are also possible investment opportunities associated with the meat industry but are not further explored in this document.

Manufacturing Beef Processing into Consumer Ready Products Concept

Overview

Figure 54 provides an overview of the business concept involving importing manufacturing beef products from Australia and processing them into retail ready beef products for both international and ethnic cuisines.

Figure 54 – Manufacturing Beef Processing



Concepts could involve producing beef products for food service and retail. Products could involve a range from simple portion controlled frozen mince items, through formulated products such as patties and sausages to relatively complex items such as smoked beef, cooked beef, beef bacon and ethnic foods (e.g. Abon (Beef Floss), Dendeng Balado (Spicy Jerky), Sate Maranggi (Beef Satay), Rendang, Rawon, Semur, etc).

Manufacturing beef items would be sourced from Australia and it would be expected that ingredients and packaging would be either imported or sourced from Indonesia.

Important issues for consideration include:

- This is a relatively simple business process and involves low business complexity to manage as the variety of finished products would be expected to be relatively limited initially but expand over time;
- The business could expand over time as the products could be developed and trialled in the domestic market before expanding to export;
- Partner selection is critical as the Indonesian partner must be capable of processing and marketing beef products into both domestic and export markets.

Manufacturing Beef Processing SWOT Analysis

Table 37 provides an analysis of the strengths, weaknesses opportunities and threats associated with processing of Australian manufacturing beef in Indonesia.

Table 37 - Manufacturing Beef Processing SWOT Analysis

STRENGTHS • The business can commence with a limited range of products and build into a wider range allowing a staged investment program • Low labour costs allow competitive processing • Most products are likely to be frozen allowing time to accumulate volumes for export and providing a robust cold chain environment. • Potential to expand into products based on other protein sources (e.g. poultry, mutton, etc).	**WEAKNESSES** • No current Indonesian organisations appear to have involvement in selling into export markets • Product development capabilities may be limited • Market access conditions for export markets to be negotiated by country to country authorities • Need to meet customer specification and compliance conditions
OPPORTUNITIES • Growth in formal retail sector in Indonesia and ASEAN countries will require a greater range of retail ready packaged items • Potential to service growing food service sector with products with specific characteristics • Potential for development of ethnic food ranges for both domestic and export markets • Potential to introduce new technologies such as flexible retort products	**THREATS** • Competition from products based on Indian Carabeef produced both within Indonesia and in other countries.

Relevance of Establishing a Manufacturing Beef Processing Facility in a KB Bonded Zone

Benefits associated with establishing the facility in a KB Bonded Zone would be:

- Delayed payment of duties on imported products;
- Zero rating on imported plant and equipment;
- VAT and Taxation advantages as outlined in Table 21 and Table 22.

Challenges to establishing in a KB bonded zone would be:

- Complying with the requirement to export 50% of production. There would be considerable risk in establishing a manufacturing facility in a KB Bonded Zone under the constraint that 50% of the finished product must be exported.

A more likely alternative for development of such a business would be to:

- Initially develop export markets using a manufacturing facility outside a bonded zone that:
    - Complies with export requirements;
    - Takes advantage of PLB and/or GB bonded warehouse arrangements for the supply of meat in a Bonded Coldstore and dry goods including ingredients and packaging in a bonded dry goods store.
    - Such an arrangement would also be beneficial for production of finished products for the domestic market.

Manufacturing Beef Processing Concept Conclusion

The challenge will be to commit to exporting 50% of finished retail ready products.

A critical hurdle involved in processing of manufacturing beef in Indonesia is the competitive threat associated with the potential for products to be manufactured utilising Indian Carabeef.

A critical constraint is considered to be the commitment of an Indonesian processor to utilise Australian sourced beef items.

It is suggested that the most appropriate way for manufacturing meat processing to move forward is to take advantage of bonded storage arrangements provided by third part service providers while developing and establishing export markets for the finished retail ready products. This alternative would also allow products to be manufactured form meat derived from other species.

It is considered important that BKPM conduct discussions with members of the National Meat Processors Association - Indonesia (NAMPA) to gauge interest in:

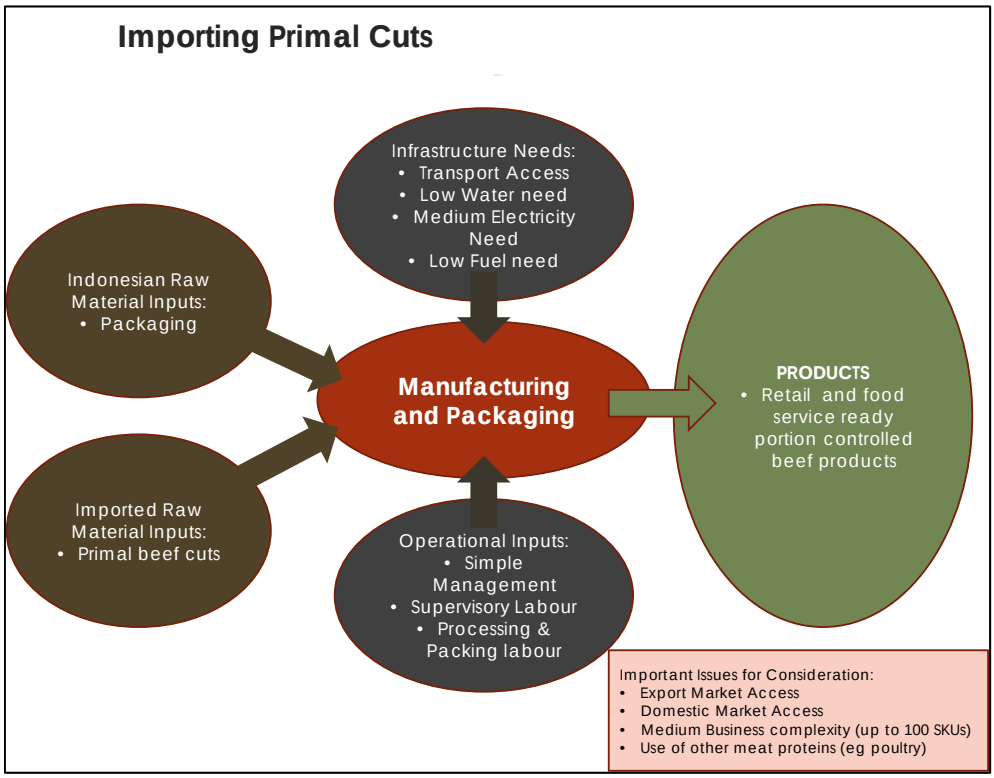
- Encouraging the utilisation of third party bonded warehouse arrangements;
- What assistance can be provided to establish export compliant manufacturing facilities;
- How can the sector be supported by the Ministries of Agriculture, Industry and Trade to establish export markets.

Due to challenges, hurdles, constraints and alternative opportunities outlined above no further analysis has been made of this business scenario.

Primal Cuts Processing into Retail Ready/Portion Control Products Concept

Figure 55 provides an overview of the business concept involving importing beef primal cuts from Australia and processing them into retail ready beef products for both international and ethnic cuisines to be supplied to both domestic and export markets.

Figure 55 – Primal Cuts Processing



The business concepts involves producing portion controlled muscle based beef products for food service and retail. Products could involve a range of portion controlled chilled steak cuts prepared for both retail and food service sectors. In order to access markets the products would need to adopt technology such as skin and modified atmosphere packaging to enhance the shelf life of fresh products and would also need to access a rapid distribution chain to supply chilled products to customers with an acceptable shelf life.

Beef primal cuts could be sourced from Australia and it would be expected that packaging film would be imported while external product packaging would be sourced predominantly from Indonesia.

Important issues for consideration include:

- This is a relatively simple business process and involves low business complexity to manage as the variety of finished products would be expected to be relatively limited initially but expand over time.
- The business could expand over time as the products could be developed and trialled in the domestic market before expanding to export.
- Partner selection is critical as the Indonesian partner must be capable of processing and marketing beef products into both domestic and export markets.
- The critical issue is the speed of the distribution system to be able to supply customer ready chilled beef items with adequate residual shelf life.

Primal Cuts Processing SWOT Analysis

Table 38 provides an analysis of the strengths, weaknesses opportunities and threats associated with processing of Australian beef primal cuts in Indonesia.

Table 38 – Primal Cuts Processing SWOT Analysis

STRENGTHS • The business can commence with a limited range of products and build into a wider range allowing a staged investment program • Relatively low entry cost associated with establishing a processing room • Low labour costs allow competitive processing • Potential to expand into products based on other protein sources (e.g. poultry, mutton, etc).	**WEAKNESSES** • The need for a robust and rapid chilled product distribution system to reach target customers • No current Indonesian organisations appear to have involvement in selling into export markets • Product development capabilities may be limited • Need for access to export markets to be negotiated • Need to meet customer specification and compliance conditions
OPPORTUNITIES • Growth in formal retail sector in Indonesia and ASEAN countries will require a greater range of retail ready items • Potential to service growing food service sector with products with specific characteristics • Potential to introduce new technologies such as skin and modified atmosphere packaging	**THREATS** • Due to relatively low entry cost there is significant potential for other suppliers set up in the target import countries which are likely to have access to similar labour advantages.

Relevance of Establishing a Primal Cuts Processing in a KB Bonded Zone

Benefits associated with establishing the facility in a KB Bonded Zone would be:

- Delayed payment of duties on imported products;
- Zero rating on imported plant and equipment;
- VAT and Taxation advantages as outlined in Table 21 and Table 22.

Challenges to establishing in a KB bonded zone would be:

- Complying with the requirement to export 50% of production. There would be considerable risk in establishing a primal cuts processing facility in a KB Bonded Zone under the constraint that 50% of the finished product must be exported.

A more likely alternative for development of such a business would be to:

- Initially develop export markets using a processing facility outside a bonded zone that:
    - Complies with export requirements;
    - Takes advantage of PLB and/or GB bonded warehouse arrangements for the supply of meat in a Bonded Coldstore and dry goods including ingredients and packaging in a Bonded Drygoods store.
    - Such an arrangement would also be beneficial for production of finished products for the domestic market.

Beef Primal Cuts Processing Concept Conclusion

The most critical hurdle involved in processing of beef primal cuts in Indonesia for export is the competitive threat associated with the potential for similar products to be manufactured in target countries.

The challenge will be to commit to exporting 50% of finished products.

A critical constraint is considered to be the ability to deliver relatively small volumes of chilled products to export customers. Such a concept would require access to high frequency air freight delivery distribution system into target markets.

It is suggested that the most appropriate way for the processing of beef primal cuts to move forward is to take advantage of bonded storage arrangements provided by third part service providers while developing and establishing export markets for the finished products. This alternative would also allow products to be processed from cuts derived from other species.

It is considered important that BKPM conduct discussions with members of NAMPA to gauge interest in:

- Encouraging the utilisation of third party bonded warehouse arrangements;
- What assistance can be provided to establish export compliant manufacturing facilities;
- How can the sector be supported by the Ministries of Agriculture, Industry and Trade to establish export markets.
- Freight forward organisations to investigate what air freight opportunities may exist.

Due to challenges, hurdles, constraints and alternative opportunities outlined above no further analysis has been made of this business scenario.

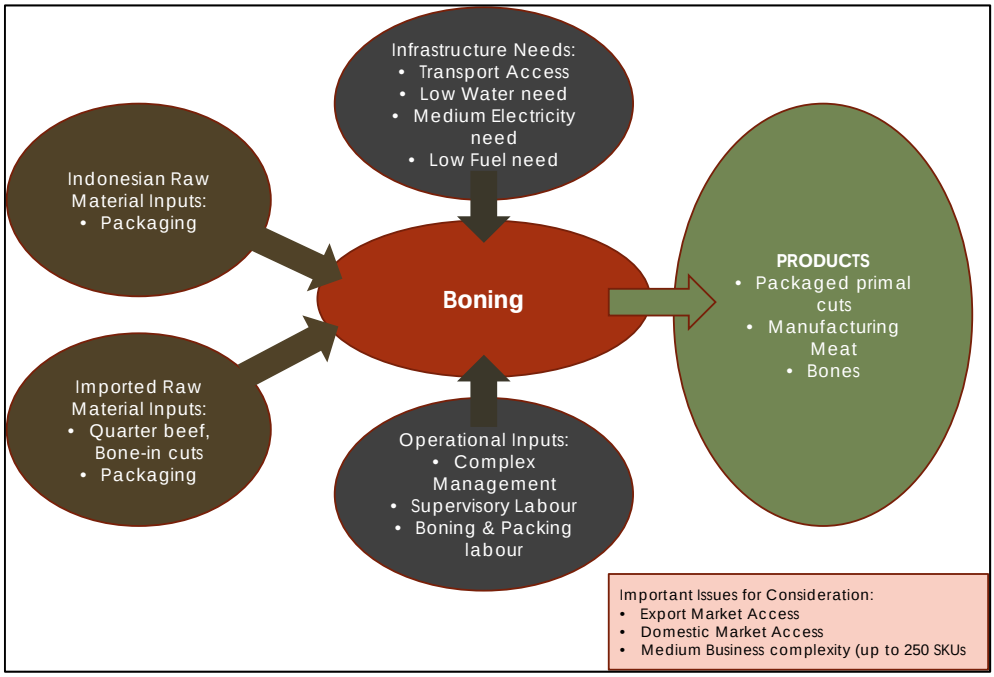
Bone-in Beef Processing into Boneless Cuts Concept

Overview

Figure 56 provides an overview of the business concept involving importing bone-in beef products (e.g. carcase beef, quarter beef in whole or part form) and processing into boneless primals and manufacturing products.

While it is quite possible to import chilled bone-in product using air-freight it is more cost efficient to import frozen product by sea-freight. However to produce a sound product satisfactory Standard Operating Procedures (SOPs) would need to be developed to thaw and process the frozen product. It is likely that the frozen product would need to be packed in a reduced permeability barrier bag prior to freezing so that when thawed the product would be in good condition. The extra cost of packaging would be less than the cost of air-freighting chilled carcases.

Figure 56 – Bone-In Beef Processing



Concepts could involve producing primals and manufacturing beef for supply to domestic and export markets. Should a natural fall of hindquarter and forequarter beef be imported then a full range of cuts would be produced for sale to customers.

Important issues for consideration include:

- This concept involves a medium to complex business process as it involves the need to market and sell the full range of cuts produced from the quarter beef imported from Australia.
- A robust set of SOPs would need to be developed to ensure that the products produced are similar to products produced in Australian meat processing establishments
- The business could expand over time as the products could be developed and trialled in the domestic market before expanding to export.
- Partner selection is critical as the Indonesian partner must be capable of processing and marketing beef products into both domestic and export markets

Bone-in Beef Processing SWOT Analysis

Table 39 provides an analysis of the strengths, weaknesses opportunities and threats associated with processing of Australian manufacturing beef in Indonesia.

Table 39 – Bone-in Beef Processing SWOT Analysis

STRENGTHS • The business can commence with a limited range of products and build into a wider range allowing a staged investment program • Low labour costs allow competitive processing. (This is particularly relevant as in Australia boning labour requirement is 50% higher than slaughter labour requirement). • Most products are likely to be vacuum packed (primals) or frozen (manufacturing) allowing time to accumulate volumes for export and providing a robust cold chain environment.	**WEAKNESSES** • Potential for poor quality product due to processing form imported frozen quarter beef. Need for strict compliance with thawing SOPs. • No current Indonesian organisations appear to have involvement in selling into export markets • Need for access to export markets to be negotiated • Need to meet customer specification and compliance conditions
OPPORTUNITIES • Growth in formal retail sector in Indonesia and ASEAN countries will require a greater range of beef products • Possibility of taking advantage of reduced tariff regimes for trade between ASEAN countries. • Potential to introduce new technologies such as immersion and microwave thawing.	**THREATS** • Will the primal and manufacturing products be able to compete with products supplied direct from Australia and achieve similar prices without suffering discounting • Increasing numbers of FTAs are likely to reduce any tariff advantages over time.

Relevance of Establishing a Bone-in Beef Processing Concept in a KB Bonded Zone

Benefits associated with establishing the facility in a KB Bonded Zone would be:

- Delayed payment of duties on imported products;
- Zero rating on imported plant and equipment;
- VAT and Taxation advantages as outlined in Table 21 and Table 22.

Challenges to establishing in a KB bonded zone would be:

- Complying with the requirement to export 50% of production. There would be considerable risk in establishing a bone-in beef processing facility in a KB Bonded Zone under the constraint that 50% of the finished product must be exported.

A more likely alternative for development of such a business would be to:

- Initially develop export markets using a processing facility outside a bonded zone that:
    - Initially targets the domestic market;
    - Complies with export requirements;
    - Takes advantage of PLB and/or GB bonded warehouse arrangements for the supply of meat in a Bonded Coldstore and dry goods including ingredients and packaging in a Bonded Drygoods store.

Bone-in Beef Processing Concept Conclusion

The most critical hurdle involved in processing of bone-in beef in Indonesia into primals and manufacturing product is the establishment of a processing regime (possibly involving thawing) that can result in similar prices being realised for products compared to those direct sourced from Australia. It is considered that boning of thawed product in Indonesia would need to be well

established as a technique to supply the domestic market before any consideration would be given to the potential to export.

A hurdle involved in processing of beef primal cuts in Indonesia is that such a process has been attempted in other importing countries however due to poor manufacturing and management controls these facilities have often been disbanded due to the poor quality of the resulting products and the market has reverted to importing boned beef products.

A critical constraint is considered to be that for success the establishment of a joint venture relationship between an Australian and Indonesian processor that is able to take advantage of such a business concept initially supplying the domestic market is required.

It is suggested that the most appropriate way for the processing of bone in beef to move forward is to take advantage of bonded storage arrangements provided by third part service providers while developing and establishing export markets for the finished products.

It is also considered important that BKPM conduct discussions with members of NAMPA to gauge interest in:

- Encouraging the utilisation of third party bonded warehouse arrangements;
- What assistance can be provided to establish export compliant manufacturing facilities;
- How can the sector be supported by the Ministries of Agriculture, Industry and Trade to establish export markets.
- Freight forward organisations to investigate what air freight opportunities may exist.

Due to challenges, hurdles, constraints and alternative opportunities outlined above no further analysis has been made of this business scenario.

Integrated Cattle Feeding and Beef Processing into Boneless Products

Overview

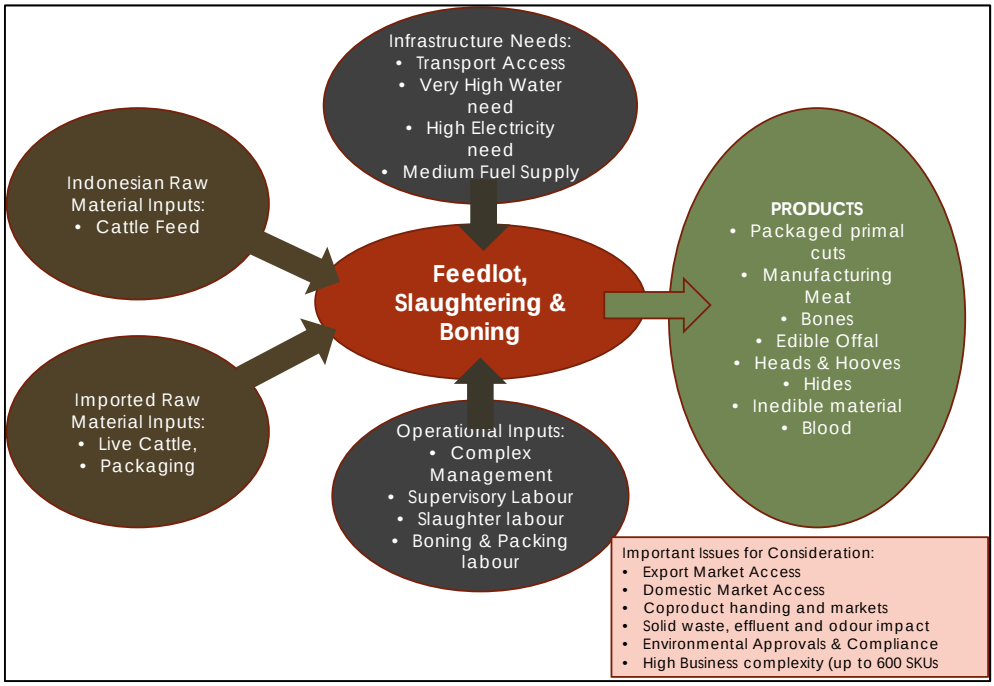
The most complex business concept involves establishment of an integrated cattle feeding and beef processing business in Indonesia capable of supplying the full range of beef products to both domestic and export markets. Such a business concept may flow out of some of the business concepts explored in earlier paragraphs in this section. For example the establishment of a successful bone-in business concept would assist the consideration of moving into a much more complex integrated concept as outlined in this section. Successful concepts processing primals and manufacturing into retail ready beef products could also be included in the integrated business concept. This would involve a natural business progression and significantly reduce the technical and investment risks associated with commencing with the development of and integrated cattle feeding and beef processing business.

However, the possibility of staging the business development towards an ultimate vision of an integrated business concept would be best to understand the nature of the challenges and in particular issues associated with site location as it would be inefficient to re-establish facilities as the concept expanded to meet the ultimate integrated business vision.

Figure 57 provides an overview of the integrated cattle feeding and beef processing business concept involving importing feeder cattle and slaughtering and processing into offals, co-products, and boneless beef primals and manufacturing products.

While it is quite possible to import slaughter ready animals for processing it is likely to be more acceptable to import feeder steers and add value to these animals prior to processing in Indonesia as this takes advantage of the supply of competitive feed rations form agricultural and agri-business by-products in Indonesia.

Figure 57 – Integrated Feeding and Processing



The concept involves a significant number of investments including:

1. Establishment of importing arrangements for live feeder cattle from Australia;
2. Constructing and operating a feedlot which is of sufficient scale and able to comply with customer expectations;
3. Constructing and operating a slaughter plant which not only complies with Exporter Supply Chain Assurance System (ESCAS) requirements but is capable of producing products of the same hygiene and food safety standards as required to comply with the standards expected by the importing countries;
4. Constructing and operating a boning operation which is capable of producing products of the same hygiene and food safety standards as required to comply with the standards expected by the importing countries;
5. Establishing market access for beef products sourced from Indonesia for target market countries;
6. Establishing a distribution logistics system capable of delivering quality products to customers;
7. Establishing a sales and marketing team capable of moving the large number of product items that will be produced (including all co-products and primal cuts and manufacturing products in various weight ranges and packaging forms) as is the nature of the meat processing disassembly activities.

The challenge is whether this can be performed in a manner in which the resultant product is competitive with products supplied direct from Australia.

Important issues for consideration include:

- This concept involves a highly complex business process as it involves the need to market and sell the full range of co-products, primal cuts and manufacturing products produced from slaughter and boning operations.
- A robust set of SOPs would need to be developed to ensure that the products produced form the feedlot and during slaughter and boning are similar to products produced in Australian integrated meat processing establishments.

- Scale of the business will be important in order to access satisfactory product volumes to cover the cost associated with the establishment of this highly complex business model. In Australia the smallest integrated beef processing plants operate at around 40 head processed/hour and target processing in the region of 100,000 cattle/annum (generally requiring extended shift arrangements).
- It is considered that the logical format for the development of an integrated feeding and beef processing business would be the establishment of some sort of Joint venture arrangement between an Australian beef processor and an Indonesian company. Partner selection is critical as the Indonesian partner must be capable of establishing robust management principles to ensure SOP for processing and marketing beef products are complied with especially for customers in export markets.

Integrated Feeding and Processing SWOT Analysis

Table 40 provides an analysis of the strengths, weaknesses opportunities and threats associated with the integrated cattle feeding and processing business concept.

Table 40 – Integrated Feeding and Processing SWOT Analysis

STRENGTHS	**WEAKNESSES**
• Knowledge of cattle feeding is sound in Indonesia. • Some degree of slaughter skills have been established through the ESCAS program. • Low labour costs should allow competitive processing.	• High degree of risk associated with commencing with a complex business process that needs scale to be competitive • Need for establishment and strict compliance with operating SOPs. • Likely to be a lack of labour skills able to comply with slaughtering and boning SOPs. • No current Indonesian organisations appear to have involvement in selling into export markets • Need for access to export markets to be negotiated • Need to meet customer specification and compliance conditions
OPPORTUNITIES	**THREATS**
• Growth in formal retail sector in Indonesia and ASEAN countries will require a greater range of beef products • Possibility of taking advantage of reduced tariff regimes for trade between ASEAN countries. • Opportunity to commence with other business concepts with a view to developing the integrated model over time.	• Will the primal and manufacturing products be able to compete with products supplied direct from Australia and achieve similar prices without suffering discounting • Increasing numbers of FTAs are likely to reduce any tariff advantages over time.

Relevance of Establishing a Feedlot and Meat Processing Facility in a KB Bonded Zone

Benefits associated with establishing a feedlot and meat processing facility in KB Bonded Zones would be:

- Delayed payment of duties on imported products;
- Zero rating on imported plant and equipment;

- VAT and Taxation advantages as outlined in Table 21 and Table 22.

Challenges to establishing in a KB bonded zone would be:

- Complying with the requirement to export 50% of production. There would be considerable risk in establishing a feedlot and beef processing facility in a KB Bonded Zones under the constraint that 50% of the finished product must be exported. The likely level of export is considered later in the document.
- The preferred model is likely to require the feedlot and meat processing to be established in separate bonded zones. The feedlot in a rural area and the meat processing plant in an urban area with good access to international air and sea freight logistics. The ability to transferred products between bonded zones is allowed in the current regulations.
- A considerable period of time will elapse between committing to the concept and export of product. This could be 3-5 years depending on the time taken to construct the facilities, establish country to country veterinary protocols, commission and train staff and establish a processing system that complies with export standards, and finally getting approval from the importing country/customer following a plant inspection.
- Prior to committing to establish such a facility under KB bonded arrangements there will be a need to consider amending the regulations for KB bonded zones to meet the needs of the concept and to provide certainty as to how the regulations will be interpreted.

An alternative concept for development of such a business would be to:

- Initially develop export markets using a feedlot and export compliant processing facility outside a bonded zone that:
    - Initially targets the domestic market;
    - Complies with export requirements;
    - There would be no advantage in using PLB bonded warehouse arrangements for the supply of livestock to the meat processing plant as duties and taxes would be assessed on the added value of the livestock post feeding.

Feedlot and Beef Processing Concept Conclusion

The most critical hurdle involved in processing of bone-in beef in Indonesia into primals and manufacturing product is the establishment of a processing regime (possibly involving thawing) that can result in similar prices being realised for products compared to those direct sourced from Australia. It is considered that boning of thawed product in Indonesia would need to be well established as a technique to supply the domestic market before any consideration would be given to the potential to export.

A hurdle involved in processing of beef primal cuts in Indonesia is that such a process has been attempted in other importing countries however due to poor manufacturing and management controls these facilities have often been disbanded due to the poor quality of the resulting products and the market has reverted to importing boned beef products.

A critical constraint is considered to be that for success the establishment of a joint venture relationship between an Australian and Indonesian processor that is able to take advantage of such a business concept initially supplying the domestic market is required.

It is suggested that the most appropriate way for the processing of bone in beef to move forward is to take advantage of bonded storage arrangements provided by third part service providers while developing and establishing export markets for the finished products.

It is considered important that BKPM conduct discussions with members of NAMPA to gauge interest in:

- Encouraging the utilisation of third party bonded warehouse arrangements;
- What assistance can be provided to establish export compliant manufacturing facilities;

- How can the sector be supported by the Ministries of Agriculture, Industry and Trade to establish export markets.
- Freight forward organisations to investigate what air freight opportunities may exist.

Due to challenges, hurdles, constraints and alternative opportunities outlined above no further analysis has been made of this business scenario.

Integrated Feeding and Processing Conclusion

The most critical hurdles involved in feeding, slaughtering and boning beef in Indonesia for export is:

- The establishment of a processing regime that can result in similar prices being realised for products compared to those direct sourced from Australia;
- The period of time it will take from commencement of construction until the first product is exported;
- The need to alter KB Bonded zone regulations to recognise the disassembly nature of beef processing and the likelihood that only a relative small proportion of finished product will be able to be competitively exported.

A critical constraint is considered to be the need to establish a joint venture relationship between Australian and Indonesian organisations that are able to take advantage of such a business concept.

Further details of this concept are explored in the following Chapter. It is considered important that discussions of these detailed findings be conducted with members of live cattle importers, cattle feedlot operators and NAMPA to gauge interest in investment in such a concept. Should interest be shown then there will be a need to put a proposal together to adjust the bonded zone regulations to meet the business concept particularly relating to the proportion of product exported and the time taken to develop export compliance for both importing country and customers.