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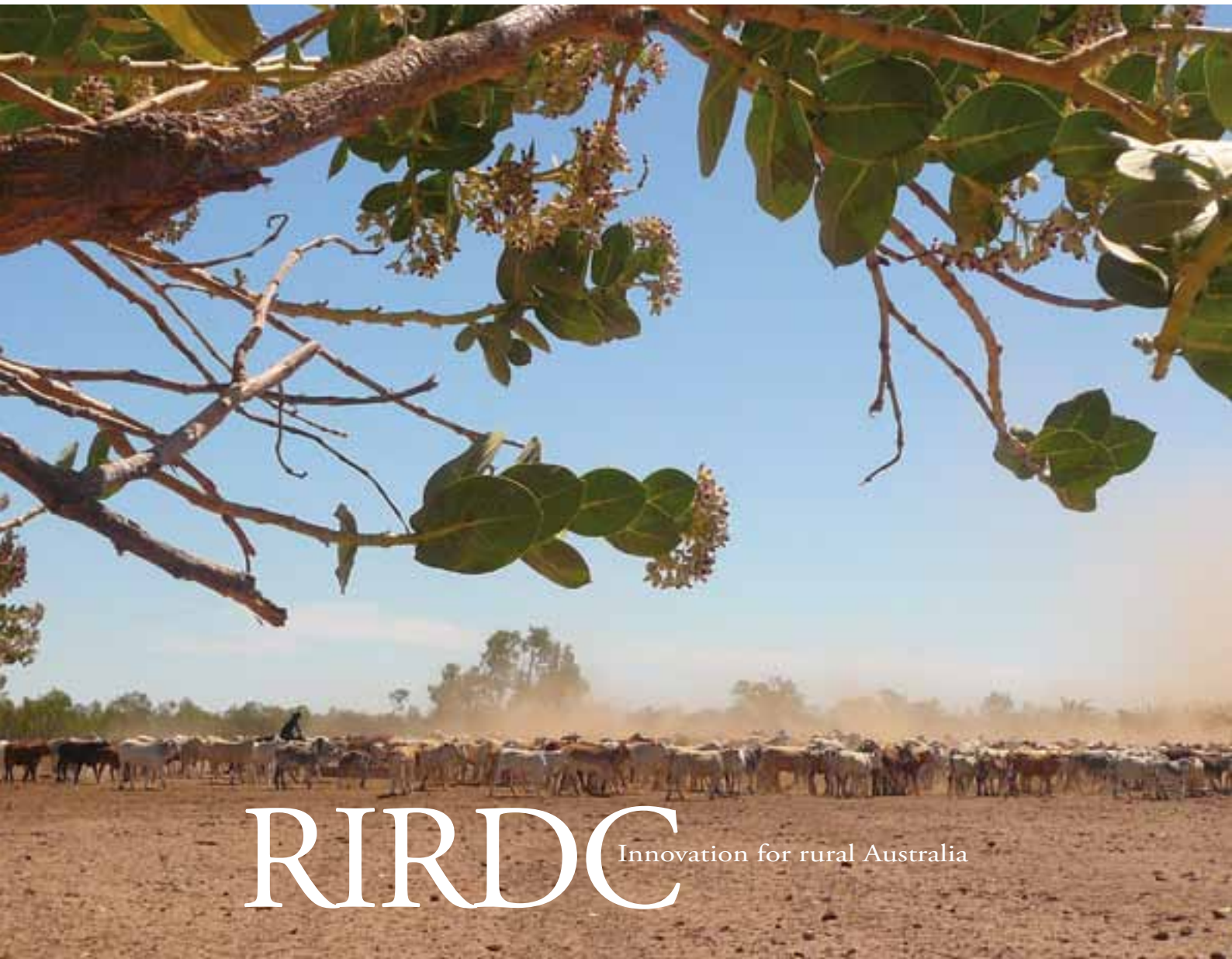
Rural Industries Research and Development Corporation

Feasibility of Establishing a Northern Western Australian Beef Abattoir

RIRDC Publication No. 10/214



RIRDC Innovation for rural Australia

Feasibility of Establishing a Northern Western Australian Beef Abattoir

by Strategic Design & Development

and

Meateng Pty Ltd

November 2010

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Foreword

Northern Western Australian is a dynamic region in Australia's economic and social future. It is also a region of great natural beauty and holds sacred cultural values for many Aboriginal communities.

Pastoralism has always been an important primary industry in this region and like the rest of the northern Australian cattle industry it is heavily reliant on the live export trade. In considering opportunities for diversification of markets for the north-west beef industry, the Australian and Western Australian Governments jointly-funded a prefeasibility study into establishing an abattoir in northern Western Australia.

RIRDC has been fortunate to manage the Australian Government's funding and in assisting the the Australian and Western Australian Governments to work together to investigate opportunities to diversify production. This report was jointly developed with the Department of Agriculture and Food Western Australia and has provided the initial research for consideration of a beef processing facility.

The report found an abattoir in northern Western Australia would be of benefit to regional beef producers, although on the basis of the present supply of cattle in the region, it would not be commercially viable without a significant commitment from industry and governments.

The report can now be used as a tool in informing future policy decisions relating to northern Australian agricultural industries and be a useful input to the three elements of the Northern Australian Beef Industry Strategy:

- assessing the risks and opportunities for the industry;
- building capacity and partnerships for sustainability in the Indigenous pastoral industry in northern Australia; and
- assessing the sustainability of, and the prospects for, mosaic agriculture and its application to the northern beef industry.

This report is an addition to RIRDC's diverse range of over 2000 research publications and it forms part of our Dynamic Rural Communities R&D program, which aims to promote and sustain vibrant, resilient regional communities through targeted commissioned and collaborative R&D investments.

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Craig Burns
Managing Director
Rural Industries Research and Development Corporation

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Introduction

This study has been commissioned by the Department of Food and Agriculture (WA) and the Rural Industries Research and Development Corporation (RIRDC) to undertake a preliminary investigation of the need for a beef processing capability to service the Rangelands cattle production industry.

Since the closure of many smaller regional abattoirs since 1990, and the rise of the live export trade, there are few options for northern region producers to access a processing option for their product. The rise of Indonesia as the dominant market for northern Australian live exports (90%), exposure to the import policies of that country is of increasing concern to the industry.

This study examines, at pre-feasibility level, the potential viability of an abattoir (or abattoirs), particularly from a physical supply chain perspective. It includes a capital cost estimate for a new facility, and recommendations as to the best location for an abattoir to provide maximum benefit to the greatest number of producers.

Background

Rangelands cattle production in WA is oriented strongly towards the live export trade, with reliance on that market increasing in the more northerly areas. Kimberley region producers are particularly exposed to the live trade, and can only access south-western WA processing alternatives via long distance transport, which often greatly reduces financial returns. Pilbara, Gascoyne and Murchison producers are similarly affected, but have proportionally greater ability to sell cattle to southern processors.

The Rangelands cattle production areas are thinly stocked in comparison to agricultural zones and east coast pastoral areas. The Kimberley region has the heaviest herd density within the Rangelands. Annual turn off is around 150,000 head in the Kimberley, and 275,000 in total.

The live trade has recently become more vulnerable to importer policy changes and depressed prices. Current expectations are that the Indonesians will continue to enforce a 350kg mass limit and attempt to build a sustainable local breeding herd, but future trading conditions remain unpredictable. The viability of the Kimberley region industry, already marginal, is potentially at risk from any negative trends in this direction. The beef industry is also of greater significance to the Kimberley region economy than anywhere else in the state.

Viability of processing alternative

There is a strong need for a processing alternative or new live export market to protect northern producers against a deteriorating outlook for the Indonesian live trade. Some options involving recommissioning of old abattoirs (eg Katherine, NT) or developing existing facilities for dual species processing are being explored at present, but a larger scale facility is most likely to be required to address the forecast regional problems.

The development and operation of such a facility, however, would not be commercially viable under current and foreseeable market circumstances.

Despite this, several potential locations have been investigated from the point of view of the cost of getting product to market, access to reliable transport chains, labour availability and capital cost. These include Wyndham, Broome, Port Hedland and Newman. Of these, Broome is considered to offer the most advantages to a processor and to the local producers.

However, there is little incentive for processors to invest in abattoirs due to:

- Lack of scale – cattle turnoff rates are low in relation to the needs of a modern abattoir
- Seasonal variability of slaughter cattle supply
- Strongly competitive live export trade, and associated herd characteristics
- Remote locations affecting skilled labour availability

A processing chain featuring a new facility could not be expected to work as an option of 'last resort', behind the live trade. Processing would need to become the dominant stream in the region of the abattoir, with live export as a back-up option. This implies that it would need to feature:

- Consistent fundamental price differentials over the live trade
- Considerable commercial commitment, or ownership involvement, etc, by producers
- A significant level of integration along the chain to market

A hypothetical abattoir in the Kimberley region capable of processing 400 head per day would cost an estimated $33.85m (+/-30%) excluding the provision of suitable serviced land. Preliminary costing of operations and freight costs suggests that a facility of this nature would be viable if supply can be maintained. Serious financial losses result from any significant shortfall in the required number of slaughter cattle.

There is little likelihood that smaller processing facilities or mobile abattoirs would offer any meaningful cost advantages to producers in the region and be competitive with the live trade in the longer term. As interim means of building up a processing capability, however, such entrepreneurial approaches are worthy of support by government.

The great challenge is for the industry to re-orient itself around a processing stream, and wean itself off live export dependence. This would require significant structural adjustment and the development of an agistment/fattening industry to underpin future diversification of marketing options and increased profitability for northern producers.

Key findings

Access to a processing stream would be of significant benefit to producers in Northern Rangelands, who are exposed to tightening live export market constraints.

Broome is the location that offers the most advantages to producers and processors as the site of a new facility.

For greatest operational efficiency, any new abattoir should be capable of processing a minimum 400 head per day, and should be focused on cattle, with other species (eg camel) targeted to utilise niche spare capacity only.

Abattoirs in the Northern Rangelands in WA would not be commercially viable in competition with a strong live export trade, without tangible government support, and without significant producer commitment to a processing alternative.

An industry restructuring effort towards the development of a significant agistment/backgrounding sector would benefit the industry generally, and also provide a more commercially attractive platform for a processing stream.

Findings in detail

Demonstrated need for a processing sector

- The high level of dependence on the Indonesian live export trade is a major business risk to beef producers in the Northern Rangelands.
- Current indications are that 350kg weight restrictions re-imposed by Indonesian live importers will remain in place for the foreseeable future. There will be an absence of sales options for cattle types excluded – cracker cows, pregnant females, heavy steers, shorthorn stock.
- A long term view of the Rangelands industry would incorporate the need to start planning for a processing option in preparation for future trends of this nature.
- Access to abattoir facilities and to a processing stream would be of significant benefit to the Rangelands beef industry, particularly producers in the most northerly areas. Producers in these areas suffer a significant financial disadvantage in using southern processors, due largely to live cattle freight costs.
- The relatively small size of the herd, and annual turnoff volumes, means that any new abattoir would need to command a large percentage of the live trade's current sales volume. An abattoir would not be able to survive on the live trade's 'discards' alone.

Separate regional approaches required

- The distance between the Kimberley and the Gascoyne regions is great. For the producers in different areas to gain access to a processing stream alternative, different regional strategies will be required. The greatest value in any abattoir option accrues to producers in the immediate region, and diminishes with the distance that needs to be covered by live animal transport.
- A West Kimberley abattoir would be of significant value to the Kimberley and Northern Pilbara regions, essentially adding a processing option not available at present. The likelihood that the Northern Territory will gain some processing capacity in the short to medium term, combined with other advantages means that the West Kimberley would be a better location than the East Kimberley.
- This means that a new facility would need to be developed for the region. Broome is the preferred location due to urban scale, access to road and sea freight advantages. Derby may be preferred as an industrial host, but would face disadvantages in attracting and retaining a supply of labour.
- A Gascoyne or Midwest regional abattoir would improve current returns over those from processing options currently available to Southern Rangelands, and Southern Pilbara producers. The need for this is less pressing than in the north. If an existing processing operation in the area can be extended to handle beef, this would be a better outcome than a new comprehensive abattoir.
- Existing abattoirs in the northern agricultural zone could be engaged in discussion regarding any interest in developing increased cattle slaughter capability. Government, however, should be mindful that this option could reduce the numbers of Rangelands cattle currently being processed in the south, which may affect profitability of some of these operators, and possibly hasten rationalisation of the domestic processing sector.
- Any new regionally significant facility should be built to best-practice standard, providing a comprehensive slaughter and boning service, and capable of processing a minimum 400 head per day. Investment in smaller facilities, or reducing the scope of services provided would reduce capital risk but increase unit costs and reduce the ability to generate genuine commercial returns on capital for the owners.

Agistment sector planning

- As a pre-requisite for any abattoir development, a Rangelands regional plan for the beef industry is required to stimulate the development of a backgrounding or agistment sector, particularly in the north.
- This will involve the development of a feed-on capability in coastal areas, probably based on irrigated pastures, hay production and/or other roughage sources. This would ameliorate the 12 month supply problem previously faced by processors in the dry tropics. This development would provide focus for producers, including indigenous managed properties.
- There is no need for this sector to be developed in a single zone or property adjacent to an abattoir. Individual lease holders should be encouraged to make investments of this nature in strategically suitable areas. Mining leases capitalizing on dewatering options would be a good source of this capability.
- Development of such a sector would be of great benefit to the industry whether or not a processing stream emerges, and should be pursued in any case.
- Preliminary efforts should be in this direction, focusing on identification of suitable areas under artesian water resources planning, easier irrigation and development approvals on pastoral leases, and development of commercial structures for the provision of agistment etc as part of a processing stream.
- This planning process would also incorporate an investigation into the ability of producers to engage in an ownership structure with the abattoir operators to ameliorate seasonal supply risk and compete effectively with live trade prices from time to time.
- DAFWA would be well placed to lead a multi-agency approach to the co-ordinated development of such a plan, in collaboration with the Western Australian Beef Industry Council.

Economic viability

- Despite current levels of commercial interest in small scale investments, a significant abattoir development would require some active assistance from state and regional levels of government, in order to guarantee achievement of high quality product for the longer term.
- In strictly commercial terms, it is unlikely that a new facility will be viable at any location in the subject area, as the returns on capital are unlikely to be high enough to warrant the risks involved (seasonality, competition with live trade, foreign exchange fluctuations etc).
- Under ideal climatic and trade conditions, modelling suggests a new operation could be competitive with existing processors and would be strongly profitable. In most realistic seasons, however, when throughput is variable, profitability is lower, and losses would be incurred in the weaker seasons. This annual variability poses the greatest risk to the consistent positive returns sought by investors.
- For this facility to operate cost-effectively, throughput equating to around 75% of the average Kimberley live trade would be needed. This obviously implies that the live trade would need to become a back-up option for the Kimberley for the processor to be viable. This may only become a practical reality if Indonesian import restrictions were to be combined with domestic policy and regulation seriously restricting the live trade.
- A new comprehensive facility would certainly require some assistance from government sources, particularly to ensure that it is built and managed to optimum standard. Any capital assistance might be sourced from any compensation packages potentially resulting from negotiations over local Kimberley energy developments. Other forms of assistance could be through increasing ease of permits and licences, subsidized indigenous labour schemes, and industry structural adjustment funding (i.e. addressing the ‘store trap’ issue).

- Most importantly, it would require some form of producer commitment to be integrated into its ownership and management structure.
- To generate real ongoing value for producers from a processing stream, a genuine competitive local market for slaughter cattle would be necessary. This could be achieved, for example, through a system whereby more than one processor operated separate boning rooms in a common facility, under a 'service kill' model. Existing facilities operated by the processor closer to end markets would then finish the products for sale.
- Any new facility should be operated and managed by an operator or operators with strong international market presence, and a proven ability to target growth markets.
- Freight cost differentials between potential new abattoirs and established competitors are encouragingly low, given the availability of road and sea backload freight capacity. Processed meat product can be freighted much more cheaply than live cattle.
- Labour is the greatest cost component, and the seasonal cost risk problems might be ameliorated under the terms of any indigenous labour assistance schemes.
- Unpredictable supply problems would be further ameliorated if the agistment sector can be developed, and producer buy-in to the processing stream can be harnessed under a management model.
- Government assistance would be less significant and necessary for an existing operator seeking to offer a cattle slaughter service. It would be inappropriate for overt assistance to such a processor, where this might have a detrimental effect on the viability of other existing processors. Any assistance granted could be negotiated through normal state and regional development channels.
- The concept of seasonal processing of camels and goats has some merit, but should not distract from the fundamental need to establish fodder and agistment industries to support year round availability of stock for a beef processing facility.
- Mobile abattoirs would not appear to offer significant benefits to the industry in the long term and it is difficult to see how government could sponsor this form of processing in any substantial way. Entrepreneurial activity of this nature, however, could be a useful interim step towards the development of a processing alternative for the region.

Recommendations

In view of the growing risks to the viability of the live trade for many producers, the state Government should continue to investigate options for stimulating commercial development of a processing stream for the Rangelands.

As part of a risk-mitigation approach to this issue, the following steps should be taken:

- the future of the live export trade in WA should be formally reviewed in view of emerging market issues and the regulatory environment;
- a location for a possible abattoir in the area between Broome and Roebuck Junction should be researched in detail;
- identify the steps necessary to reduce impediments to the development of irrigation capability in key districts so that an agistment sector can be allowed to develop and flourish;
- existing major regional and national processor companies should be formally approached to consider commercial options for developing and operating such a facility, including the multi-operator 'service kill' and other models;
- estimate the 'commercial gap' between likely development and operating costs, and model financial viability in greater detail;

- determine the nature of any in-principle support that could be offered by the state to provide incentive to invest in processing (eg provision of land and headworks, low-interest loans, risk-sharing mechanisms etc)
- engage with producer organisations to determine the commercial structures necessary to give processing a dominant marketing position in the region

The state government should open discussions with existing WA abattoir operators seeking to expand their capability to offer services to the Rangelands beef industry. Types of assistance to be considered could include various forms of risk underwriting and a 'one-stop shop' approach to permits and approvals.

The Department (DAFWA) should initiate a multi-agency approach to the structural reform of the Rangelands beef industry and seek to incorporate a Northern Territory government response to the issues affecting the entire northern cattle production region.

A joint government industry Rangelands Cattle Industry Working Group (potentially established through the WA Beef Council) should address structural reform issues including the active development of agistment and fodder production industries to underpin improved productivity of the industry and any processing capability.

Working Group participants could include:

- State Government (DAFWA, Regional Development, Pastoral Lands Board)
- Commonwealth Government (RIRDC, DAFF, DFAT)
- Northern Territory Government
- Pastoral producers representation
- Indigenous development representation
- Mining industry representation

1. BACKGROUND TO THE STUDY

1.1 Introduction

This study has been conducted in response to a request from the Western Australian Department of Food and Agriculture (DAFWA) for a pre-feasibility study into the potentiality of a north Western Australian beef abattoir. The study has also been part-funded and supported by the Rural Industries Research and Development Corporation (RIRDC).

The need for the study is a growing recognition that the dependence on live export as a market for Rangelands cattle is a major source of risk to the viability of pastoral enterprises and the beef industry as a whole in the Kimberley, Pilbara and Gascoyne regions.

The development of an abattoir would offer producers in the Rangelands region an alternative production and marketing stream to the live export option. The location, scale and scope of any new facility, however, will be critical to its success. This study considers both the potential cost of meat production and the cost of getting such product to market, in competition with the live export option and other Western Australian beef production streams.

The study leans on previous reports examining the dynamics of the northern Australian beef industry. It uses the findings of these studies to inform an analysis of production cost and the transport and handling costs likely to be involved in getting product into the market.

In the course of this study, a wide range of consultations have been held, with field visits to each region and public meetings in Carnarvon, Karratha and Port Hedland. The consultants were able to meet with several producers on their properties in each region and also addressed a Pastoralists and Graziers Association (PGA) meeting in the Kimberley. The consultants have also benefited from the expertise of the Reference Panel for this study, which met several times at various stages of the project.

We would like to thank all producers, industry stakeholders and staff from DAFWA and other agencies that have contributed to the outcomes of this study.

1.2 Study Background

Cattle raising on the Western Australian Rangelands is fundamentally different to the more intensive beef farming industry in southern Australia. Northern beef production takes place in a unique physical and commercial environment, which results in great marketing and management challenges to be overcome in a highly competitive global market.

The northern production areas are characterized by:

- large scale enterprises on pastoral lease
- low herd density
- significant annual interruptions to turn-off due to heat, drought and tropical rainfall patterns
- long distances to market
- relatively low access to professional services due to isolation

There are two distinct production regions within the overall area. The Pilbara/Gascoyne region is separated from the Kimberley Region by the Great Sandy Desert and several hundred kilometres of highway. Similar production systems prevail in each area, but the Kimberley has the greatest herd numbers and density, and a significant degree of isolation from the remainder of the state, and markets.

The pattern of closure of regional meatworks in the Rangelands, and in Australia generally, has reduced the marketing options available for producers in remote areas. This important change was partly in

response to the emergence of the live trade, combined with regulatory changes that have added costs disproportionately to smaller operators. The export beef processing sector is now dominated by large abattoirs, particularly in Queensland, slaughtering over 300,000 head of cattle per year.

The export meat industry perpetually faces difficult operating conditions, dealing with continual fluctuations in supply, demand, costs and prices reflecting changing trends in production conditions, global trade and currency fluctuations. This is a difficult environment for investment capital to be deployed in, as returns can vary quickly between the strongly positive and strongly negative.

The Western Australian industry also faces some strategic and structural disadvantages against east coast suppliers. Queensland production chains have some advantages in terms of scale, supply chain co-ordination and access to lucrative Asian markets for both live and processed products. The major export abattoir in Western Australia (Harvey Beef) lacks the security of supply and sufficient scale to warrant a year round multi-shift operation.

Several domestic beef abattoirs operate in the south-western sector, of which Gingin is the furthest north. Some slaughter cattle from the southern Rangelands are destined for these southern abattoirs, either directly or via saleyards, including the newly opened Muchea facility, but Kimberley cattle face prohibitively high costs in accessing these southern chains due to distance and transport regulations.

Thus Kimberley producers are now heavily oriented towards production for the live export trade, while Pilbara producers access both live trade and southern processing chains. Gascoyne producers are focused on the southern chains with a small proportion of turnoff going out live.

The dominance of production for the live trade has led to some herd characteristics that make for cattle less suited to the processing chain. Northern cattle are primarily of the Bos indicus type (e.g. Brahman), which are sufficiently hardy for the conditions and temperamentally suited to live carriage, but whose meat is generally of manufacturing standard (i.e. hamburger mince). These cattle are also less temperamentally suited to the management practices used in the feedlot sector.

Previous attempts to reinvigorate the processing stream for the northern industry have been unsuccessful, due to the orientation of the entire production culture of the region towards the live trade, and its relative success and simplicity. However, the industry is now vulnerable to changes affecting the returns and reliability of the live trade, and industry fears relating to this are currently quite high.

Government agencies in Western Australia and the Northern Territory have recently been asked to assist the industry in reviewing the potential for some processing capability to be re-established, particularly in northern Australia, in response to these fears. Attention is currently being paid to the feasibility of re-opening mothballed plants such as those at Katherine and Batchelor (Northern Territory) and Kununurra (Western Australia), as well as potential new developments serving the greater Rangelands area (such as this study).

The live trade has become very exposed to developments in the Indonesian market, whose growth has been responsible for overall growth of the WA live export sector, in the last few years. Most recently (June 2010), there has been evidence that Indonesia is acting to restrict numbers of imported cattle in response to damped global meat demand, and in support of its local producers.

This activity has led to renewed interest in local processing options throughout the region.

1.3 Consultation and acknowledgements

The study has been guided by a Reference Panel, who have provided invaluable advice, resources and information throughout the course of the project.

Reference Panel membership

- Kevin Chennell, DAFWA – Project Manager
- Chris Chilcott, DAFWA
- Ken Moore, RIRDC – Project co-sponsor
- Tim Darcy – Producer, Gascoyne
- Jack Burton – Producer, Kimberley
- Jim Motter – Producer and PGA Chairman, Kimberley
- Stephen Yule – Gascoyne Development Commission
- Paul Troja – CEO, Rockdale Beef, NSW
- John Donaldson - WA Meat Industry Authority
- Joe Ross – Dept of Indigenous Affairs
- Peter Trefort – Hillside Meats, Narrogin WA

Assistance

The study has been aided by the provision of advice and assistance from the following people and organisations:

- Meat and Livestock Australia – Michael Finucan
- DAFWA – Phil Thomas
- NT Live Exporters Association – Adam Hill
- Toll Express – Kevin Welsh
- Jebsens Shipping – Grant Williams
- WA Dept of Transport – Mark Brownell
- NT Dept of Resources – Neil McDonald
- Duncan Ord - Dept of Indigenous Affairs

Field trips

Two field trips were undertaken to gauge producer interest in the issues and meet with government and industry representatives at key locations in the Gascoyne, Pilbara and Kimberley areas.

Open meetings with producers were held at Carnarvon and Karratha, with the assistance of DAFWA regional staff. The PGA invited the consultants to address a grower meeting in Broome. At and following these meetings, productive discussions were held with interested parties. The consultants also had the opportunity to visit properties in each of the three regions, to gain improved understanding of Rangelands cattle raising, market options, regulatory issues and climatic conditions.

We would like to thank all those producers and other interested parties who attended the meetings, showed hospitality and participated in the study.

1.4 Structure of Report

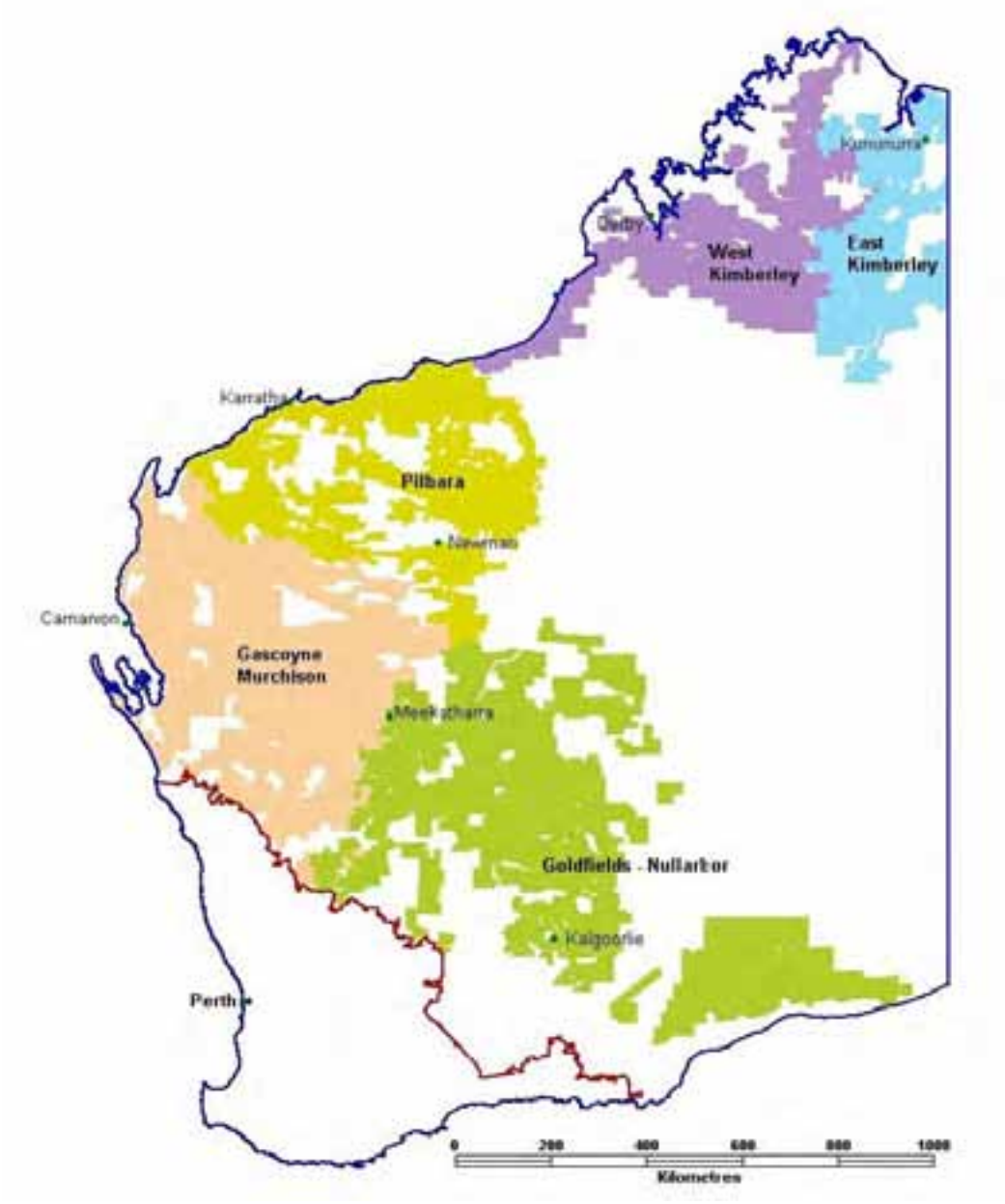
This report commences with a general description of the Rangelands cattle industry and the market options currently available to producers. It then discusses the live export trade and its growth prospects, and analyses the options, risks and issues associated with a move to develop a processing stream as an alternative market option. Potential locations are then assessed, before cattle supply chain development needs are discussed. Freight transport economics and abattoir costs are analysed, and a detailed capital costing prepared by Meateng is summarised (the full costing report is attached as an appendix). Finally the findings of the study are outlined.

2. THE RANGELANDS BEEF CATTLE INDUSTRY

2.1 Rangelands area

For administrative and reporting purposes, the Rangelands region is usually divided into regions (Kimberley, Pilbara, Gascoyne-Murchison) following shire boundaries. The Kimberley and Pilbara regions are often grouped as Northern Rangelands, while the Gascoyne region is contiguous with the southern agricultural area and is part of the Scrublands district which stretches towards the Goldfields.

Figure 1 - Map showing administrative divisions and pastoral leases



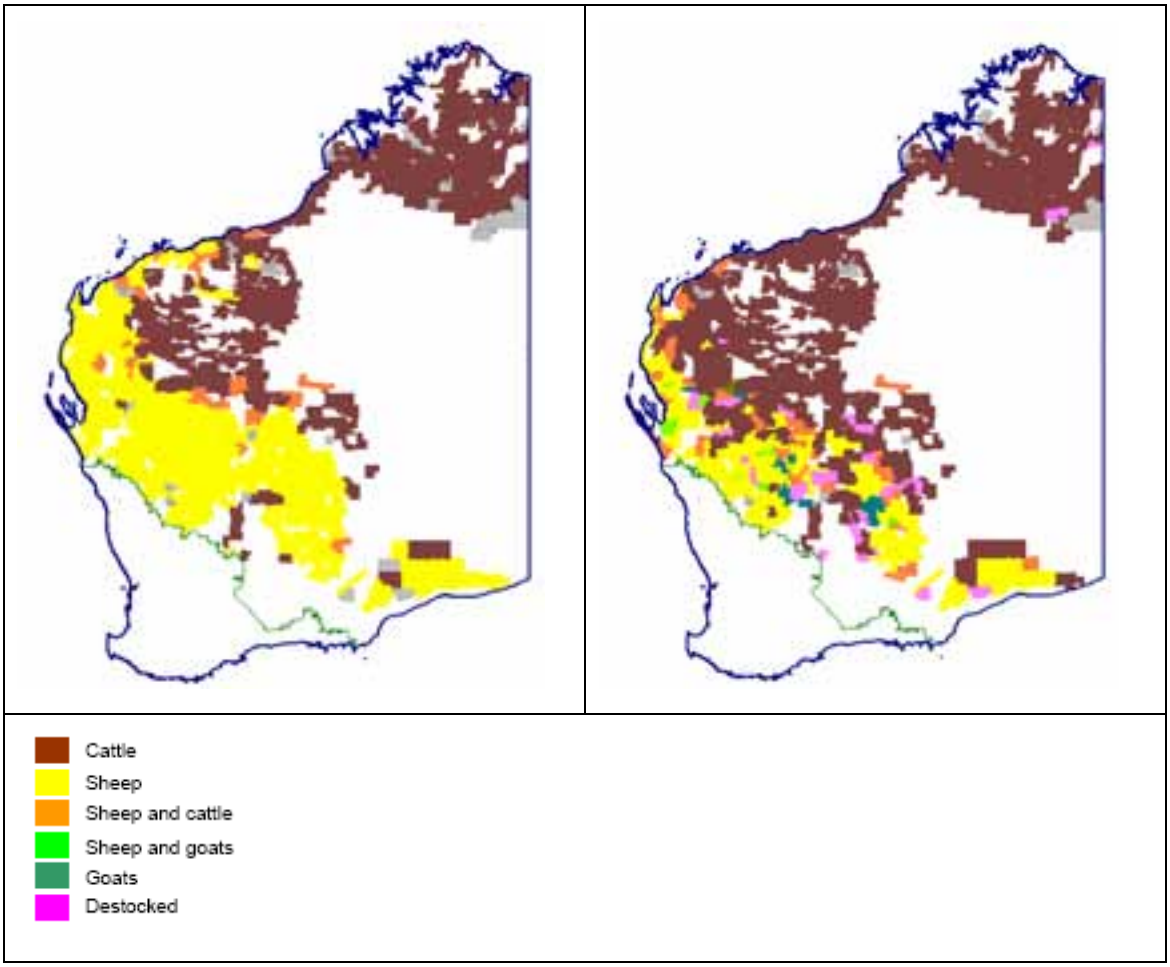
Source - Pastoral Lands Board (2006)

For the purposes of this study, which is focused more on the transport supply chain than on grazing and farming practices, the Pilbara district is more closely aligned with the Gascoyne area than the Kimberley. The Great Sandy Desert forms a geographical barrier between the Pilbara and Kimberley regions, and the tick line runs along the southern edge of the Kimberley region. This is a significant boundary in relation to transport characteristics and costs.

Figure 2 illustrates the geographical pattern of cattle production in Western Australia and how it has changed over time. Cattle raising is dominant throughout the Northern Rangelands, and sheep production has declined significantly in the Gascoyne and coastal Pilbara areas over the last 25 years. This is driven by greater returns available from cattle over sheep, and the higher costs associated with wool production.

The entire Rangelands cattle industry operates under Pastoral Lease conditions, and there are around 450 such properties (stations) in the area. Total annual pastoral livestock production is valued at $240m, of which $180m is made up of cattle sales (PLB, 2009).

Figure 2 - WA map showing changes in dominant livestock production between 1984 and 2004



Source: Pastoral Lands Board, 2005

The area under pastoral lease in each region is huge, as summarised in Table 1. The mix of tenure types differs quite markedly from region to region, with the Kimberley characterised by a high percentage of land under indigenous management and corporate control, with a small area of private smallholdings. In the Pilbara, there is a more even mix of lease types, and mining area leases total 20%, reflecting the main economic pursuits in the region, and the ability of mining companies to dewater their mines cost-effectively with livestock grazing.

The southern areas have small percentages of mining and indigenous leases.

Table 1 - Pastoral lease areas by region and tenure type (sq kms)

Sq.kms	*Region*				
	Kimberley	Pilbara	Gascoyne	Murchison	Total
Indigenous	65,181	16,770	2,884	11,146	95,981
Individual	47,386	49,758	33,374	114,539	245,056
Mining	0	29,643	0	27,380	57,023
Private	96,853	46,096	45,845	45,681	234,475
Foreign	2,405	0	0	0	2,405
Total	211,825	142,267	82,102	198,746	634,940

% within region	*Region*				
	Kimberley	Pilbara	Gascoyne	Murchison	Total
Indigenous	31%	12%	4%	6%	15%
Individual	22%	35%	41%	58%	39%
Mining	0%	21%	0%	14%	9%
Private	46%	32%	56%	23%	37%
Foreign	1%	0%	0%	0%	0%
Average	100%	100%	100%	100%	100%

Source – Pastoral Lands Board of Western Australia

Cattle numbers are concentrated most heavily in the Kimberley, and are increasingly less concentrated with southerly location. The concentration of cattle production is low in the Gascoyne and Murchison as sheep and other species are prevalent in these regions, and pasture quality, and carrying capacity is lower in the inland.

2.2 The Rangelands herd

Table 2 illustrates the concentration of cattle raising on each region's pastoral leases. There are more cattle per square km in the Kimberley than elsewhere, but the overall density is very low in relation to other Australian cattle raising areas.

Table 2 - Herd density (cattle units/sq km of pastoral lease land)

cu/sq km	*Region*			
	Kimberley	Pilbara	Gascoyne	Murchison
Indigenous	2.05	0.86	1.03	0.21
Individual	3.59	2.23	0.96	0.57
Mining	0.00	1.77	0.00	0.42
Private	3.79	2.43	1.61	0.56
Foreign	5.03	0.00	0.00	0.00
Average	3.22	2.04	1.33	0.53

Source – Pastoral Lands Board of Western Australia

There have been changes to the herd dimensions in each region over the last decade

Table 3 - Annual changes in herd size by region and tenure type

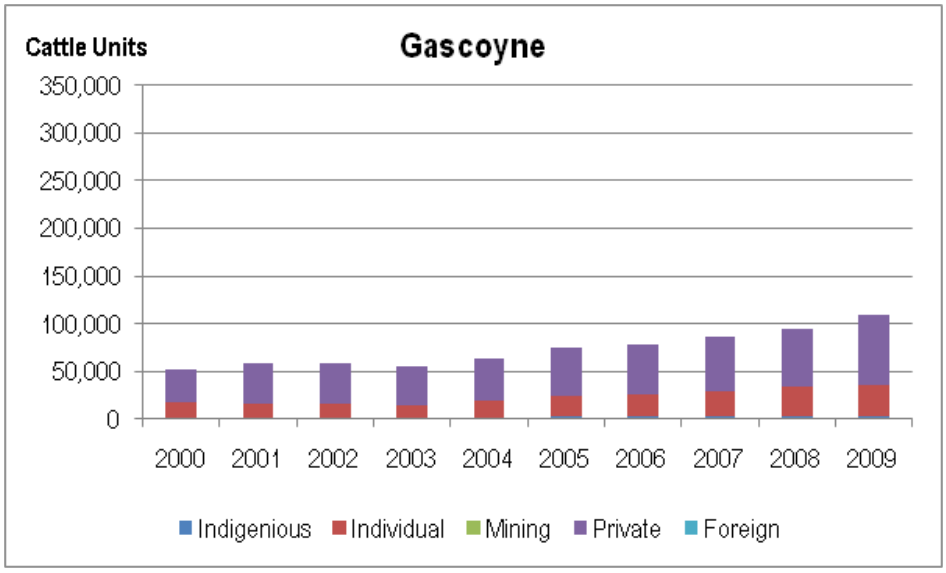
Region		*Area (ha)*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*
KIMBERLEY	Indigenous	6,518,082	71,207	49,019	70,702	60,124	65,824	97,583	92,348	109,014	84,757	133,614
	Individual	4,738,578	89,700	99,669	107,832	113,496	120,868	121,460	129,854	146,536	158,095	169,971
	Mining	0	0	0	0	0	0	0	0	0	0	0
	Private	9,685,342	349,068	304,698	323,115	329,483	353,188	346,966	375,819	376,334	389,836	367,145
	Foreign	240,481	6,710		10,938	9,512	9,812	10,581	10,976	9,561	11,899	12,098
	Total	*21,182,483*	*516,684*	*453,385*	*512,586*	*512,614*	*549,693*	*576,590*	*608,997*	*641,445*	*644,586*	*682,828*
PILBARA	Indigenous	1,677,040	5,702	9,333	10,760	15,213	16,811	17,529	16,838	16,613	18,105	14,492
	Individual	4,975,771	90,676	95,958	98,555	92,609	93,682	84,966	98,718	95,905	96,545	110,892
	Mining	2,964,279	30,187	29,432	32,478	32,924	39,256	43,395	47,385	45,922	47,884	52,477
	Private	4,609,571	84,301	84,774	103,655	88,780	87,698	80,622	83,739	94,183	113,517	112,111
	Foreign	0	0	0	0	0	0	0	0	0	0	0
	Total	*14,226,661*	*210,866*	*219,497*	*245,449*	*229,526*	*237,446*	*226,512*	*246,681*	*252,623*	*276,051*	*289,972*
GASCOYNE	Indigenous	288,359	725	0	1,606	1,391	1,538	2,363	2,091	2,559	3,528	2,967
	Individual	3,337,406	17,643	15,882	14,565	13,296	16,885	20,993	23,782	27,005	30,649	32,102
	Mining	0	0	0	0	0	0	0	0	0	0	0
	Private	4,584,473	33,226	42,203	42,718	40,815	44,195	51,093	51,423	56,301	60,539	73,862
	Foreign	0	0	0	0	0	0	0	0	0	0	0
	Total	*8,210,238*	*51,593*	*58,085*	*58,888*	*55,502*	*62,618*	*74,449*	*77,296*	*85,865*	*94,716*	*108,931*
MURCHISON	Indigenous	1,114,586	2,448	3,189	2,134	691	2,124	1,025	937	1,430	108	2,301
	Individual	11,453,891	39,910	35,325	40,839	48,000	49,236	47,115	47,566	53,943	57,522	64,757
	Mining	2,738,044	5,760	6,021	5,974	6,086	7,878	7,296	7,877	10,386	11,970	11,608
	Private	4,568,101	20,223	18,201	16,198	16,555	16,027	15,763	21,633	22,693	24,297	25,679
	Foreign	0	0	0	0	0	0	0	0	0	0	0
	Total	*19,874,622*	*68,340*	*62,737*	*65,145*	*71,332*	*75,266*	*71,199*	*78,012*	*88,453*	*93,898*	*104,345*

Source – Pastoral Lands Board of Western Australia

2.2.1 Gascoyne/Murchison

This region extends from the Carnarvon coast inland towards Meekatharra. The beef cattle herd is an estimated 108,000 in the Gascoyne, and 104,000 in the Murchison, with heaviest stocking in the northern parts of the region, though growing significantly in the south as traditional sheep country is adapted.

Figure 3 - Current herd breakdown by pastoral lease type - Gascoyne



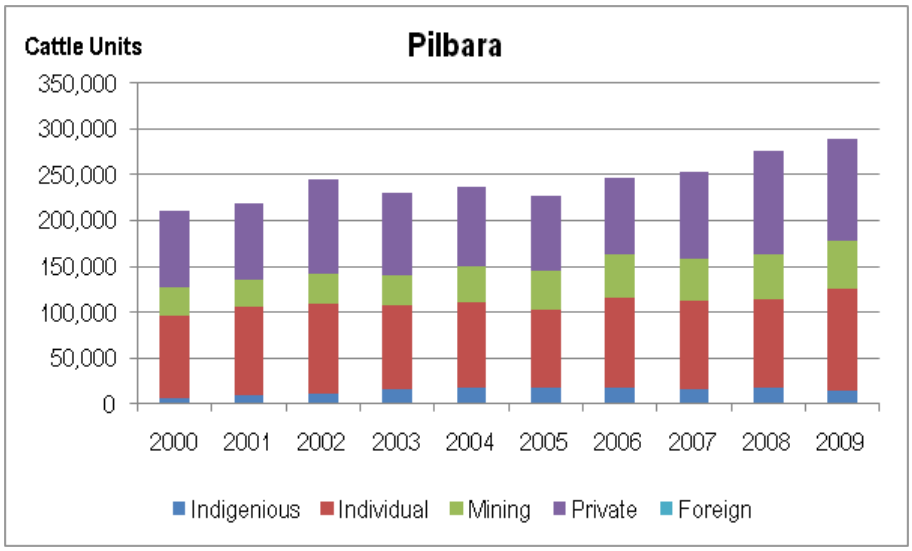
Source – Pastoral Lands Board of Western Australia

The region includes breeding properties as well as providing backgrounding services for northern-bred cattle en route to saleyards for slaughter or live export ex-Fremantle. There are no designated feedlots in the area, but its proximity to the grain growing areas in the Midlands region points to potential future activity of this type.

2.2.2 Pilbara

The Pilbara region extends inland from the coast to well beyond the mining centre of Newman, with a light population density of 2 'cattle units'/sq km. The herd is currently estimated at 280,000 head, having increased steadily through the last decade. This number is considered to be close or above the long term potential carrying capacity of the region (Neithe, 2008), which takes into account long term average pasture condition and water availability etc.

Figure 4 - Current herd breakdown by pastoral lease type - Pilbara



Source – Pastoral Lands Board of Western Australia

Climatic conditions are severe in the tropical areas. The region has suffered serious drought conditions in 2010, which will impact on herd numbers in the short term. Soils in general are of low quality and poor water-handling capability exacerbates rainfall uncertainty.

The annual wet season typically brings 3-4 months of extreme heat and frequent cyclonic rain events which interrupt mustering activities and can disrupt the flow of weaners and older cattle for backgrounding and/or sale.

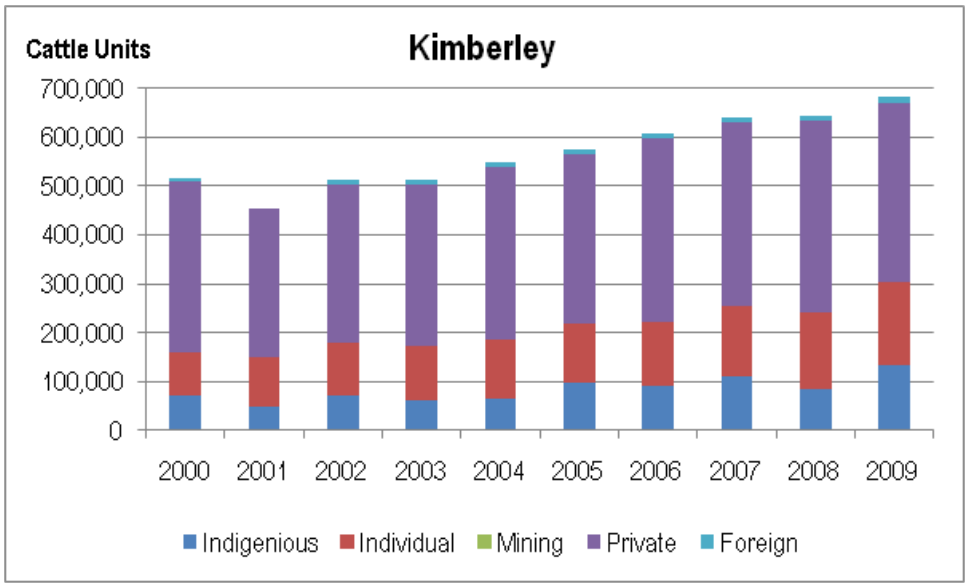
Sales in the region account for around 90,000 head per year, a 30% turn-off rate. Of this figure, around 50% is understood to be destined for backgrounding in the northern agricultural areas and eventual processing. The remaining half is exported live via Port Hedland or Broome.

2.2.3 Kimberley

The Kimberley region with the most concentrated cattle population has a herd of about 625,000 head, around 60% of the estimated 1 million cattle in the Rangelands areas.

The heaviest concentration of cattle is in the West Kimberley area, but the herd density is fairly consistent across the entire region, reflecting the importance of the industry to the region. The East Kimberley borders the Northern Territory pastoral lands and has much in common with Northern Territory Cattle industry, particularly in relation to market options.

Figure 5 - Current herd breakdown by pastoral type - Kimberley



Source – Pastoral Lands Board of Western Australia

Climatic and soil conditions are similar to those in the Pilbara, and cattle raising can be a precarious business activity. The long distances to market and support services, limited road access and extreme climatic conditions contribute to the difficulties.

2.3 Turnoff

Annual turnoff varies considerably throughout the Rangelands, and from year to year.

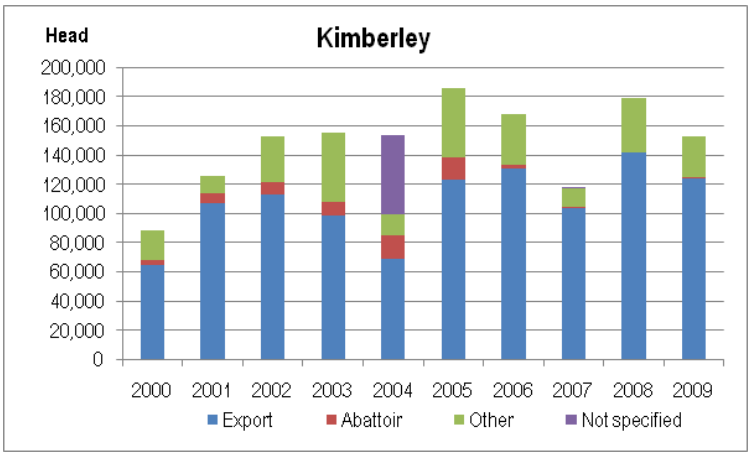
Live export has become progressively more important in recent years, particularly for the Northern Rangelands. Table 4 illustrates the scale of annual sales and the nature of sales for each region.

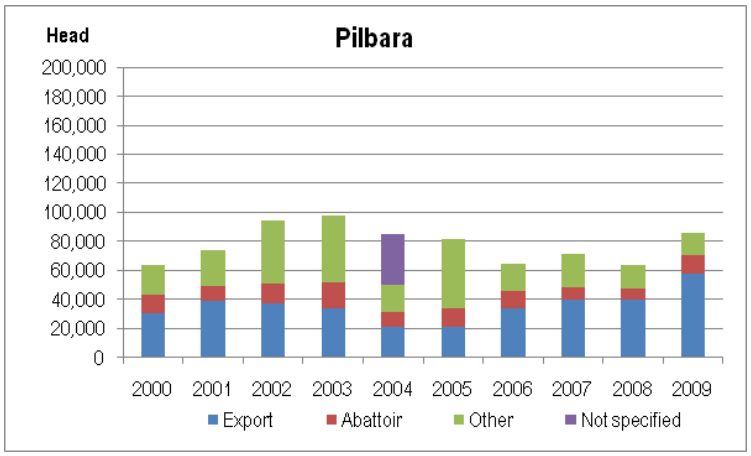
Table 4 - Cattle sales by region and market type (2000 – 2009)

Head of cattle		Year										
Region	Destination	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**average**
Kimberley	Export	64,783	106,896	112,696	98,757	68,993	123,015	130,398	103,419	141,651	124,076	107,468
	Abattoir	3,218	6,481	9,110	8,670	16,390	15,355	2,645	924	235	474	6,350
	Other	20,296	12,135	31,090	47,709	14,083	47,531	34,827	13,150	37,399	28,095	28,632
	Not specified	0	0	0	-8,273	54,265	0	0	100	0	0	4,609
	Kimberley Total	**88,297**	**125,512**	**152,896**	**146,863**	**153,731**	**185,901**	**167,870**	**117,593**	**179,285**	**152,645**	**147,059**
Pilbara	Export	30,740	38,726	37,252	33,915	20,660	21,138	34,195	39,865	39,845	57,750	35,409
	Abattoir	12,192	10,124	13,885	17,645	10,607	12,578	11,233	8,610	7,743	13,032	11,765
	Other	20,590	24,674	43,044	46,424	18,908	47,908	19,405	22,582	16,481	15,349	27,537
	Not specified	0	0	0	-9,158	35,243	0	0	0	0	0	2,609
	Pilbara Total	**63,522**	**73,524**	**94,181**	**88,826**	**85,418**	**81,624**	**64,833**	**71,057**	**64,069**	**86,131**	**77,319**
Gascoyne	Export	6,882	4,955	10,797	3,069	195	6,850	8,105	10,838	10,738	16,688	7,912
	Abattoir	2,800	5,858	7,409	3,743	1,724	1,852	6,115	3,420	4,523	7,637	4,508
	Other	6,148	7,494	10,089	16,625	234	11,282	11,681	7,937	8,845	6,589	8,692
	Not specified	794	1,077	1,090	-174	14,849	0	0	0	0	0	1,764
	Gascoyne Total	**16,624**	**19,384**	**29,385**	**23,263**	**17,002**	**19,984**	**25,901**	**22,195**	**24,106**	**30,914**	**22,876**
Murchison	Export	7,961	5,027	3,155	2,087	1,565	5,200	5,445	6,850	10,222	12,487	6,000
	Abattoir	4,760	8,779	5,982	2,669	3,104	1,797	2,113	2,204	2,661	5,013	3,908
	Other	13,911	14,749	36,232	23,168	904	22,977	10,059	10,586	14,470	10,214	15,727
	Not specified	0	0	0	-320	18,973	0	0	0	0	0	1,865
	Murchison Total	**26,632**	**28,555**	**45,369**	**27,604**	**24,546**	**29,974**	**17,617**	**19,640**	**27,353**	**27,714**	**27,500**
Grand Total		**195,075**	**246,975**	**321,831**	**286,556**	**280,697**	**317,483**	**276,221**	**230,485**	**294,813**	**297,404**	**274,754**

Source – Pastoral Lands Board of Western Australia

Table 5 - Sales figures trends (2000 – 2009) by region





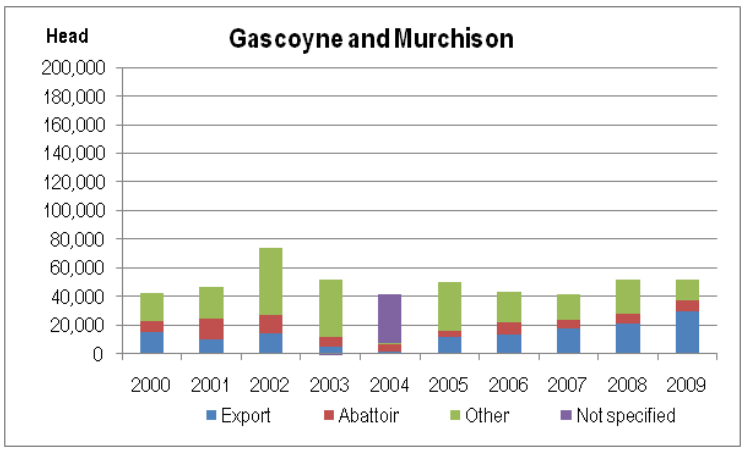


Table 5 above, shows how estimated sales volumes have varied from year to year in each region. The Kimberley has the most volatile sales numbers, including a severe dip in 2007. The lack of an abattoir sales option for the Kimberley is clearly depicted, since the closure of the Kununurra facility in 2005. The dominance of the live trade is also clear. The category 'other' includes sales where the eventual destination of the animal is not known or declared. The high proportion of 'other' sales in the Pilbara and Gascoyne, reflects the proximity of these regions to the southern saleyards and agricultural area backgrounding properties, destinations less attractive to the Kimberley producers.

Sales volumes vary from year to year as turn-off rates are surprisingly volatile, at least according to official data. Neithe (2008) reports figures indicating that Kimberley turn-off has varied between 16% and 30% over the last decade, and 25%-43% in the Pilbara, with the low points occurring in poor isolated seasons. Overall turn off rates have improved slowly in the last 25 years, but are still considered inferior to those in agricultural regions.

Total sales for the region remain under 300,000 in any one year, with the exceptions being 2002 and 2005, when 320,000 sales were recorded, of which around 50% were recorded in the Kimberley.

Figure 6 - NW WA cattle production regions with indicative annual cattle movement numbers ('000)

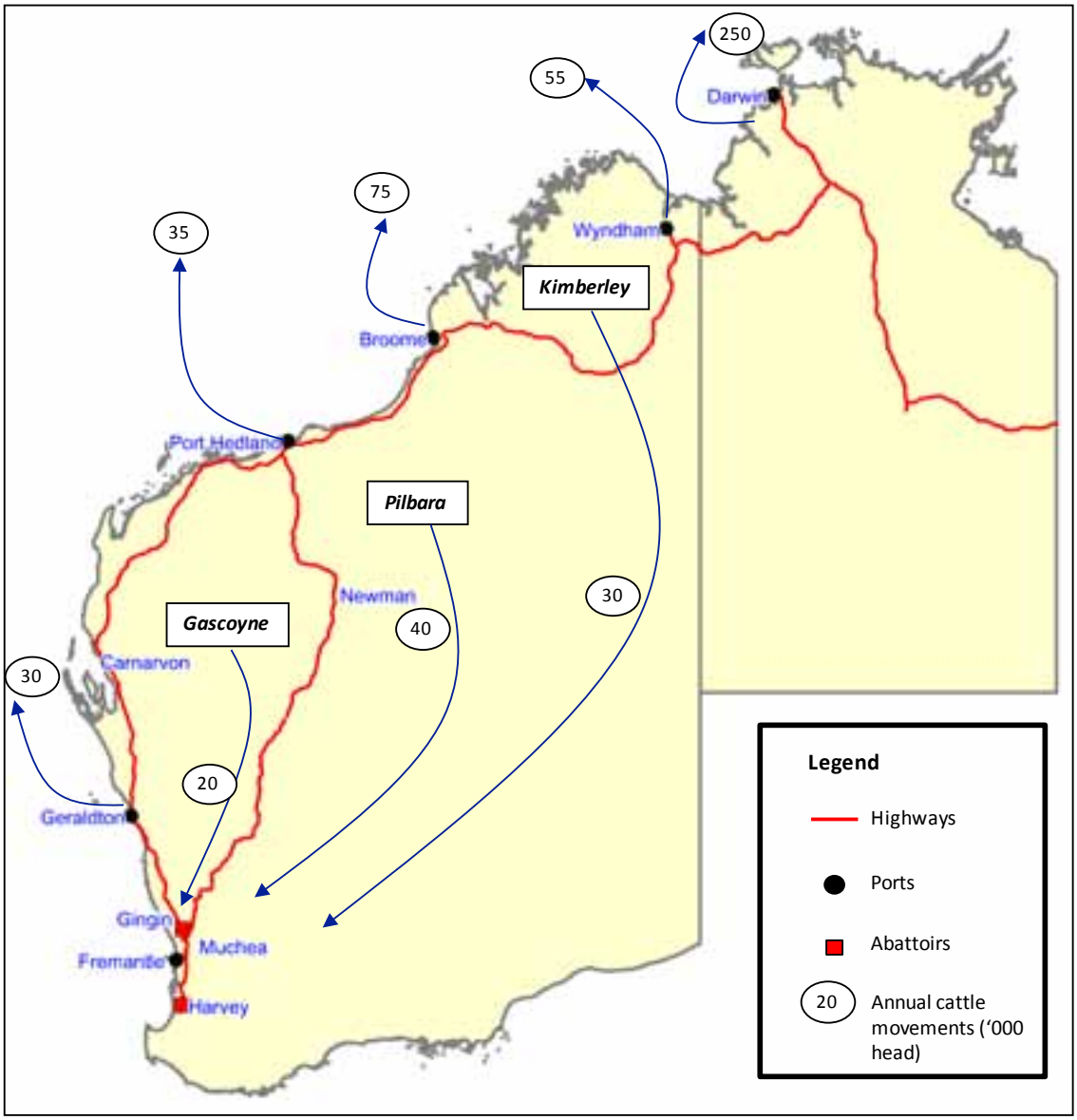


Figure 6 above, summarises the average number of cattle sold and transported to market for each region, illustrating the basic market options available to producers in each region.

The Rangelands herd has grown 40% from an estimated 850,000 in 2000 to 1,200,000 (expressed as cattle units) in 2009.

Kimberley and Pilbara sales are heavily oriented towards the live trade, while Gascoyne Murchison sales are shared between the live trade and processing options in the South West.

3. THE LIVE EXPORT TRADE

Growth in the live trade accelerated during the early 1990s, as the potential for development of a viable alternative export industry was realised. Live exports had been occurring prior to this, as the northern Australian production area had advantages over Asian cattle raising lands. It was only with the development of infrastructure such as ports, purpose built shipping, AQIS accredited holding yards etc, that the full potential of the trade was realized.

Western Australian exports rocketed from 20,000 head in 1990 to 280,000 in 1998, with similar growth experienced in the other northern states. Total Australian exports peaked at around 940,000 in 2002, of which about one third were from Western Australia. In more recent years, despite a significant fall in exports ex-Queensland, the numbers exported from Western Australia have been in the range 270-380,000 per year, with 2009 the heaviest year to date at 381,000.

The West Australian export task is divided fairly consistently between five ports servicing the Rangelands and agricultural production areas, as follows:

Table 6 - Live cattle export volumes by port (WA and NT)

(head)	*2005*	*2006*	*2007*	*2008*	*2009*	*average*
Broome	82,815	85,368	92,679	81,324	96,629	87,763
Wyndham	65,587	48,669	41,544	50,969	75,474	56,449
Port Hedland	7,050	17,126	22,187	19,968	22,895	17,845
Geraldton	31,081	24,621	19,482	35,463	48,288	31,787
Fremantle	84,513	141,926	115,941	147,709	138,501	125,718
Total WA	271,046	317,710	291,833	335,433	381,78	319,562
Darwin	209,274	239,948	288,787	359,307	353,278	290,119
Total WA and NT	480,320	557,658	580,620	694,740	735,065	609,681

The heaviest regional throughput is at the Kimberley ports (Broome and Wyndham), while Fremantle is the largest single export destination, serving both the agricultural region and the Rangelands.

Once these pathways to market were consolidated, the live trade became the simplest and most profitable source of revenue for the northern pastoral leases. Ironically, the sudden success of the live trade was the final nail in the coffin for the abattoirs serving the northern regions, which had always tended to struggle with issues of quality supply. The subsequent closure of abattoirs, in turn, resulted in a large scale orientation of the herds towards live export characteristics, principally towards turn-off of younger Bos indicus cattle. This trend has dramatically increased the exposure of northern producers to the risks associated with having a single market for an export product with limited access to domestic markets.

In recent times, the spread of international consumers of northern Australian live cattle has narrowed dramatically from importers in several countries, to a 90% focus on heavily regulated Indonesian buyers.

Figure 7 following, illustrates the proximity of the Western Australia ports with Indonesia and nearby Asian markets

Figure 7 - Northern Australia and SE Asia

Indonesia prefers to buy young cattle for fattening in its own feedlots, and has been recently advertising a wish to reduce its dependence on foreign cattle by improving its breeding herd performance. In June 2010, Indonesia announced a renewed enforcement of a rule limiting the weight of imported cattle to 350kg, overturning recent practice enforcing this as an average weight limit across a shipment. On top of recent reduced purchase volumes and lower prices, this is causing concern about the future market outlook for northern producers.

Any significant reduction in the live trade would have a negative impact on prices received by West Australian producers, though over time this effect would eventually be balanced out by global adjustments in supply and demand.

There is a general tendency for prices and market activity to spike downwards at the start of the dry season, though this year's reversal has apparently been more severe than usual.

Table 7 shows how Indonesia has become the dominant market for all Australian live exports (including Queensland and southern states). The Indonesian percentage from West Australian ports is higher than the national average set out in the tables. The percentage of Indonesian purchases from the northern West Australian ports is presumably higher again, towards the 90% currently quoted anecdotally.

Table 7 - Australian live cattle export destinations (1990-2009)

Destination	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Indonesia	8,061	12,668	24,981	58,299	118,034	228,422	388,974	428,077	41,174	159,548
Philippines	22,625	19,873	56,604	93,475	128,130	209,192	206,317	259,702	215,961	268,784
Egypt						15,541	52,210	37,539	119,579	240,482
Malaysia	22,512	25,495	23,298	24,799	29,773	38,891	44,484	73,752	43,587	65,227
Israel							1,485		8,719	8,715
China			8	87			110	1,380	240	
Japan	31,503	30,976	21,696	16,613	11,130	10,050	15,481	19,857	17,148	12,362
Saudi Arabia	646							1,100		
Jordan				768		1,132	4,563	2,451	18,128	37,560
Other	15,003	34,785	21,669	19,032	14,080	15,782	27,474	124,205	156,585	51,551
Total	100,350	123,797	148,256	213,073	301,147	519,010	741,098	948,063	621,121	844,229
Indonesia % of total	8%	10%	17%	27%	39%	44%	52%	45%	7%	19%

Destination	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*
Indonesia	296,653	289,525	426,458	387,160	359,560	347,967	386,566	516,992	644,849	772,868
Philippines	223,773	97,411	115,522	96,016	46,918	20,941	13,159	20,354	10,791	12,860
Egypt	207,551	203,206	145,015	7,583		6,961				
Malaysia	56,772	77,925	92,009	87,955	47,541	38,067	56,484	35,018	20,263	13,651
Israel	15,837	34,966	47,777	43,213	20,947	32,027	79,443	36,895	51,721	36,901
China	285	1,985	9,372	44,138	73,911	32,512	9,879	8,785	12,767	32,798
Japan	14,393	17,957	14,028	22,034	18,098	25,269	21,944	21,083	19,770	16,039
Saudi Arabia		20,800	54,277	15,969		17,522	27,586	16,254	18,303	18,346
Jordan	40,736	13,186	4,765	23,065	34,154	16,980	5,935	5,163	830	27,578
Other	39,982	65,513	62,657	47,115	36,619	34,553	33,318	58,938	89,216	23,102
Total	895,982	822,474	971,880	774,248	637,748	572,799	634,314	719,482	868,510	954,143
Indonesia % of total	*33%*	*35%*	*44%*	*50%*	*56%*	*61%*	*61%*	*72%*	*74%*	*81%*

Source - ABARE (2007)

The live trade from the region has grown significantly in the last decade, particularly through Broome and Wyndham. In 2009, an estimated 240,000 head were exported through ports serving the Rangelands.

Indonesia has become the dominant importer of WA live cattle, and the industry is exposed to serious risks associated with reductions in demand and tightening product specifications

4. TOWARDS A BEEF PROCESSING STREAM

4.1 Processing options in Western Australia

The meat processing sector in Australia is increasingly characterised by large processing companies operating large facilities. Table 8 shows a list of the top beef and sheep processing companies in Australia. The two major processors (Teys Bros and JB Swift Australia) operate several plants each, the largest of which are located at coastal or metropolitan locations in Queensland.

The three export beef processors in Western Australia are relatively small compared to the major national players. They are located in the far south-west of the state in the heart of the prime beef production area. There are another four southern meatworks supplying the domestic market only.

In 2007, an estimated 469,000 head of cattle were slaughtered in Western Australia (O'Loughlin, 2008). The largest processor is Harvey Beef, followed by VV Walsh and Western Meat Packers, which process an estimated 340,000 head between them.

Harvey Beef has since increased its capacity from 700 head per day to 1000 per day, and initiated a second shift. It has, however, been unable to source a sufficiently reliable year round supply of cattle to capitalise on this new capacity, and has increased its production by around 10% since 2007.

The review of abattoir capacity by DAFWA (O'Loughlin, 2008) noted that there were several companies expressing plans to increase abattoir capacity at that time. Unused operational abattoir capacity was roughly estimated at 20%. view of this, it was considered that there was insufficient increase in demand for Western Australian meat products to warrant a new abattoir being developed at that stage. That conclusion, however, would have been based on the assumed continuation of growth in the live trade as well as the fairly static market for south western West Australian beef products.

A previous DAFWA report (Burggraaf & Manners, 2005) opined that there would be some rationalisation of the smaller domestic abattoirs in the following five years or so, and that an export-licensed small to medium sized new abattoir could replace some older small facilities. There is no hard evidence yet of any moves in that direction, but operating margins for some of these existing plants are considered to be thin, in view of chronic supply security problems in Western Australia generally.

4.1.1 Northern Rangelands

The only northern Australian facilities outside the capital city environs are those at Rockhampton and Biloela in Queensland. There are no meatworks in the Rangelands area, or in the adjacent Northern Territory production areas, several having closed down in recent decades as the live export trade has grown. Some of these facilities closed due to changes in supply and/or skilled labour shortages, while others found themselves priced off the land by residential development (e.g. Broome).

Non-operational facilities still exist, e.g. at Kununurra, and periodically interested parties review the option to recommission these works. The difficulties involved in bringing old plant up to new hygiene and food quality standard, however, would add considerable cost to this approach. Gaining water licences and environmental approvals in some areas would also be a hurdle for recommissioned premises, as compared to existing premises seeking to expand capacity.

Table 8 - Top 25 red meat processors in Australia (2007)

Organisation	*Throughput ETCW 2007 (a)*	*Throughput ETCW 2006*	*Kill share % 2007 (b)*	*No. plants operated in 2007*	*Species*	*Employee numbers*	*conversion*	*live weight tonnes*	*average live weight tonnes)*	*est head / year*
JBS Swift Australia Pty Limited	453,000	436,000	15.77%	4	Beef	4,800	50%	906,000	0.60	1,510,000
Teys Bros Pty Limited	344,933	273,300	12.01%	6	Beef	2,700	50%	689,866	0.60	1,149,777
Nippon Meat Packers Aust Pty Limited	164,200	168,700	5.72%	3	Beef	1,650	50%	328,400	0.60	547,333
Tasman Group Services	163,072	162,000	5.68%	6	Multi	1,900	50%	326,144	0.60	543,573
Cargill Beef Australia	152,000	145,000	5.29%	2	Beef	1,100	50%	304,000	0.60	506,667
T&R Pastoral Pty Limited	133,000	99,800	4.63%	4	Multi	1,400	50%	266,000	0.60	443,333
Fletcher International Exports Pty Ltd	82,400	80,000	2.87%	2	Sheep	1,365	50%	164,800	0.60	274,667
Australian Country Choice Production Pty Limited	60,250	54,750	2.10%	1	Beef	950	50%	120,500	0.60	200,833
H. W. Greenham & Sons Pty Limited	58,000	53,500	2.02%	2	Beef	475	50%	116,000	0.60	193,333
Rockdale Beef Pty Limited	54,870	54,750	1.91%	1	Beef	450	50%	109,740	0.60	182,900
Kilcoy Pastoral Company Limited	54,200	52,800	1.89%	1	Beef	550	50%	108,400	0.60	180,667
JSA Jackson & Son Pty Ltd	49,515	47,600	1.72%	2	Sheep	580	50%	99,030	0.60	165,050
Unnamed	47,766	72,000	1.66%	2	Beef	550	50%	95,532	0.60	159,220
MC Herd Pty Limited	47,000	45,500	1.64%	1	Multi	n/a	50%	94,000	0.60	156,667
Harvey Industries Group Pty Limited	44,486	44,200	1.55%	1	Beef	300	50%	88,972	0.60	148,287
G & B Gathercole (Vic) Pty Limited	40,140	35,000	1.40%	3	Multi	390	50%	80,280	0.60	133,800
Unnamed	39,500	39,500	1.38%	1	Beef	n/a	50%	79,000	0.60	131,667
Tatiara Meat Company Pty Ltd	39,200	n/a	1.36%	1	Sheep	470	50%	78,400	0.60	130,667
Stanbroke Beef Company Pty Limited	38,000	36,500	1.32%	1	Beef	n/a	50%	76,000	0.60	126,667
Unnamed	37,000	37,000	1.29%	1	Beef	n/a	50%	74,000	0.60	123,333
Primo Australia Scone Abattoir	35,000	32,000	1.22%	1	Beef	360	50%	70,000	0.60	116,667
CRF (Colac Otway) Pty Ltd	34,320	n/a	1.19%	1	Sheep	377	50%	68,640	0.60	114,400
V & V Walsh Pty Limited	34,320	35,600	1.19%	1	Multi	300	50%	68,640	0.60	114,400
Northern Co-Operative Meat Co Limited	30,226	45,932	1.05%	2	Multi	961	50%	60,452	0.60	100,753
Southern Meats	28,000	51,000	0.97%	1	Sheep	480	50%	56,000	0.60	93,333
Western Meat Processors	25,000			1	Multi	n/a	50%	50,000	0.60	83,333
Combined total (top 25)	2,289,398		78.83%	52						

Source - Meat & Livestock Association (2007)

4.1.2 Southern Rangelands

Beef production in the Southern Pilbara and the Gascoyne region is focused more or less equally between the live export trade and southern processors.

The independently owned Geraldton Meat Exports (GME) sheep/goat abattoir has potential to expand its activity into beef processing, which would help balance its winter seasonal shortfall in numbers of the smaller ruminants. To achieve this, however, the company would need to add a new slaughter floor and some additional chiller rooms.

4.1.3 Northern Territory

The situation in Northern Territory has changed considerably in mid 2010. A recent pre-feasibility study for a Northern Australian dual-species (camels and cattle) abattoir (Neithe, 2009) concluded that such a facility would be of benefit to the local beef producers. Consequently, several firms have begun to develop plans to recommission or construct abattoirs in the Northern Territory. The mothballed Katherine abattoir has been the subject of a bid by a Darwin based company which planned to focus on producing meat for export through that port.

This renewed interest in processing is being driven primarily by the indications from Indonesia that it will be moving towards self-sufficiency in meat production, by reducing the import of slaughter cattle. Indonesia is expected to continue importing feeder cattle, leaving a niche for local processors to gain access to larger numbers of cattle no longer acceptable to the dominant live customers.

There is similar interest by some producers in the Kimberley Region in developing commercial processing, but as yet no clear expressions of intent have been made by established commercial operators or marketers. The Northern Territory offers a slightly more tempting environment for an abattoir development than northern Western Australia. Katherine is at the centre of a large beef production area and is a gateway to Darwin, only 320km distant. Processing in this area would achieve freight advantages over the live trade, and provide an outlet for pregnant females, cracker cows and heavy steers for which no cost-effective alternative market exists.

The changes in the Indonesian live trade, plus the addition of camels into the slaughter mix, offers the opportunity to increase the annual slaughter throughput over the low levels in the 1990s (average 31,000 per annum) in the post-BTEC period which precipitated the abattoir's closure.

4.2 Commercial, economic and strategic issues

4.2.1 Risks

The creation of a processing alternative stream carries many risks for the proponents. The changing nature of Australian meat processing, points to the concentration of processing activity into a small number of large facilities. Investors in a new regional abattoir would face competition from larger, more efficient facilities with easier access to export markets.

Reliability of supply would be a major issue, given the strength of the live trade and the potential for exogenous factors (such as currency fluctuations and sea freight price differentials) to favour the live trade over processed meat from time to time. Any short term swing towards the live trade could bring about the need for closure or shutdowns for the abattoir, which obviously are commercially highly undesirable. While-ever live trade dominates production output in the Rangelands; any abattoir would face this type of risk to its capacity to generate return on significant amounts of capital needed for development of the option.

It is becoming clear that a new abattoir would also need to be considered as a part of a revitalised supply chain, rather than simply a standalone commercial asset. To attract the required daily cattle intake to generate revenue quality, abattoir operators would depend on relationships with producers working with

cattle in a range of stages – breeding, weaning, backgrounding, growing out etc, as well as transporting and handling. To achieve reliability through a chain of this nature, the abattoir operator would need to have developed alliances or similar commercial agreements with participants in these activities, delivering grown-out cattle in consistent numbers through a range of climatic conditions.

The abattoir operator would need to be confident that it had claim over sufficient cattle numbers on hand or within an easy haul of the facility ahead of the wet season in the tropics, during which time long distance transport of cattle from inland pastoral properties is often inhibited. It would therefore need to invest in alliance agreements with the owners of the properties providing the growing out services, along with other operators holding cattle at different stages of the chain.

This approach would be difficult to pursue in an environment where live trade competes opportunistically with the processing stream, within which an animal may require the investment in another 1-2 years of growth (beyond the live export sale age) before generating a return to the various producers bringing it to maturity.

It is hard to envisage a substantial processing stream generating commercial acceptable returns to investors in this environment. The live export 'tap' can be turned on and off fairly easily by producers in response to market conditions and customer practices. By contrast, the processing stream, once turned 'on', cannot be turned 'off' very often or for very long.

In terms of the large area under consideration, over 2000km long by road distance, it is unlikely that any one location for an abattoir could draw cattle away from the existing alternatives in each region – the live trade in the north, and southern processing option for the south. An abattoir in the northern Rangelands will not be competitive with the existing stream based on supply to Harvey Beef, while a southern Rangelands abattoir would not command much interest from Kimberley producers where transport journeys are much longer than the short distance to the live ports (unless trading conditions change markedly).

4.2.2 Advantages

Notwithstanding these issues, there would be substantial advantages for the overall industry in the creation of a processing stream:

Reduced exposure to dominant customer

- This is particularly significant to the Kimberley region. The dominance of the Indonesian consumers leaves the region's producers with very little market security and a difficult business and investment environment.

Incentive to invest in a cohesive backgrounding and value adding industry

- A confirmed abattoir development would provide the backbone for the development of a new backgrounding sector, whereby cattle producers and other landowners could invest in irrigation or utilise coastal rainfall to provide growing out capacity that would benefit both the live export and meat trades.

Incentives to improve management practices

- Aligned with the previous point, producers previously focused on the live trade would be challenged to manage their cattle's growth in order to reach premium weights for the abattoir. This could involve commercial alliances with backgrounding service providers. These alliances and services would lead to improved professional attention to supply chain efficiency which would eventually result in improved returns.

Ecological benefits

- There are currently an estimated 60,000 cattle of little or no value to the export trade roaming on Rangelands pastoral properties. These cattle are contributing to the damage being done to natural grasslands and reducing the effective value of the carrying capacity of the land. A processing

chain would absorb most of these animals (pregnant females, cracker cows etc) and create more space for more valuable cattle.

Regional economic benefits (investment, employment generation, indigenous opportunities)

- An abattoir would employ up to 200 people and generate considerable flow-on benefits into the regional economy, and that of its host town. Associated industrial and tertiary sector businesses (equipment maintenance, infrastructure, freight and logistics, training and human resource management) would benefit from the association with the new business. In principle, the replacement of a trade in exporting live animals with a manufacturing enterprise would be of considerable value beyond its immediate commercial returns.

4.2.3 Supporting a processing option

A new abattoir can readily be built in any number of locations, and will be of benefit to local and regional producers seeking an alternative option to the live trade or southern processing option. Once established, the operation would no doubt claim a base-load kill volume from producers keen to re-orient their operations in pursuit of higher returns from processing than those available from the live trade. This base-load would also include the cracker cows, heavy steers and pregnant females which are being excluded by the live trade.

This base-load, however, would not be steady, reliable or of sufficient scale to guarantee that the abattoir could operate at its design capacity. Viability of a processing stream depends on many issues, including availability of co-ordinated feed-on and aggregation services, skilled and unskilled labour, cost-effective transport, and competitive access to market. Above all, however, the steady supply of cattle is the main determinant of commercial success or otherwise.

Every recent study into the issue has concluded that processing would be of benefit to the industry so long as markets can be found and a steady input stream provided.

A processing chain featuring a new facility(s) cannot be expected to work as an option of 'last resort', behind the live trade. Processing would need to become the dominant stream in the region of the abattoir, with live export as a back-up option. This implies that it would need to feature:

- *Consistent fundamental price differentials over the live trade*
- *Considerable commercial commitment, or ownership involvement, etc, by producers*
- *A significant level of integration along the chain to market*

Established processors will not risk capital in providing a facility that will only be used opportunistically by producers. The status of the live trade into the future cannot be predicted – prices could well improve again once the impacts of the Global Financial Crisis on beef inventories have passed, and changes to Indonesian import policy are always possible. Processors will need some form of security over their supply arrangements to confidently invest in a new facility. This implies that a unique partnership relationship between producers, processor and government might be needed to ensure the stability of a new facility.

4.2.4 Strategic issues associated with a Rangelands processing stream

The Rangelands area is considered too large for a single new facility to make a difference to the entire region. This raises the issue of scale, and the need for an abattoir to be able to command a strong cattle supply from a reasonably close proximity.

A single facility located in the centre of the Rangelands region (i.e. the coastal Pilbara or Newman area) would involve significant transport distances (well over 1000km in some cases) for live cattle movement. While this is not insurmountable, the need for southern Rangelands producers to drive cattle north for slaughter would be counter-productive – as the distance would be similar to those endured in transporting cattle from this area to the existing processors in the south west of the state. Processed product from these abattoirs is closer to market than meat from a centrally located Rangelands abattoir.

The tick line also introduces a barrier to the use of a single Pilbara processing facility. Transporting live cattle across the tick line adds considerable cost in terms of treatments and permits required before transport, and the treatment can devalue the product under certain circumstances. Kimberley cattle would thus incur these costs in accessing southern or central facilities.

Transport cost analysis (see Section 7) and geographical conditions drive the conclusion that separate strategies for the Kimberley and southern Rangelands should be elucidated.

The task ahead is not so much about determining the location of a viable new abattoir, but developing a series of regional strategies towards establishing an improved supply chain, for the benefit of producers seeking the most efficient means of getting optimum cattle types to market (either live or processing).

The Kimberley is sufficiently remote as to warrant its own regional strategy, while the Pilbara/Gascoyne regions are sufficiently contiguous to be connected by a Southern Rangelands strategy.

4.2.5 Mobile abattoirs

A recent study (Neithe & Butler, 2010) reviewed the potential for mobile abattoir systems to be developed for use in the sparsely grazed northern cattle regions. However, the issues or cold chain management, AQIS inspection, labour, effluent disposal and access to power and water make it difficult to conceive of a business cost model that would be viable in competition with normal fixed location abattoirs.

A fleet of mobile abattoirs is unlikely to be able to satisfy the needs of the Northern Australian cattle sector in terms of either capacity or processing cost. However, there may well be an interim or marginal role for entrepreneurs to establish mobile operations. They could well serve a useful purpose in establishing volumes towards a critical threshold where a fixed processing plant becomes viable. These endeavours could be facilitated by government where they involve operations that would be compliant with food and environmental standards

4.2.6 Seasonal processing of camels and goats

The complementary slaughter seasons of cattle with camels and goats have led to suggestions that this model could assist in providing the elusive 12 month supply of slaughter stock for continuous operation of a processing facility. However, while this model has labour cost and retention benefits, it also requires a higher capital base for processing a species other than beef cattle.

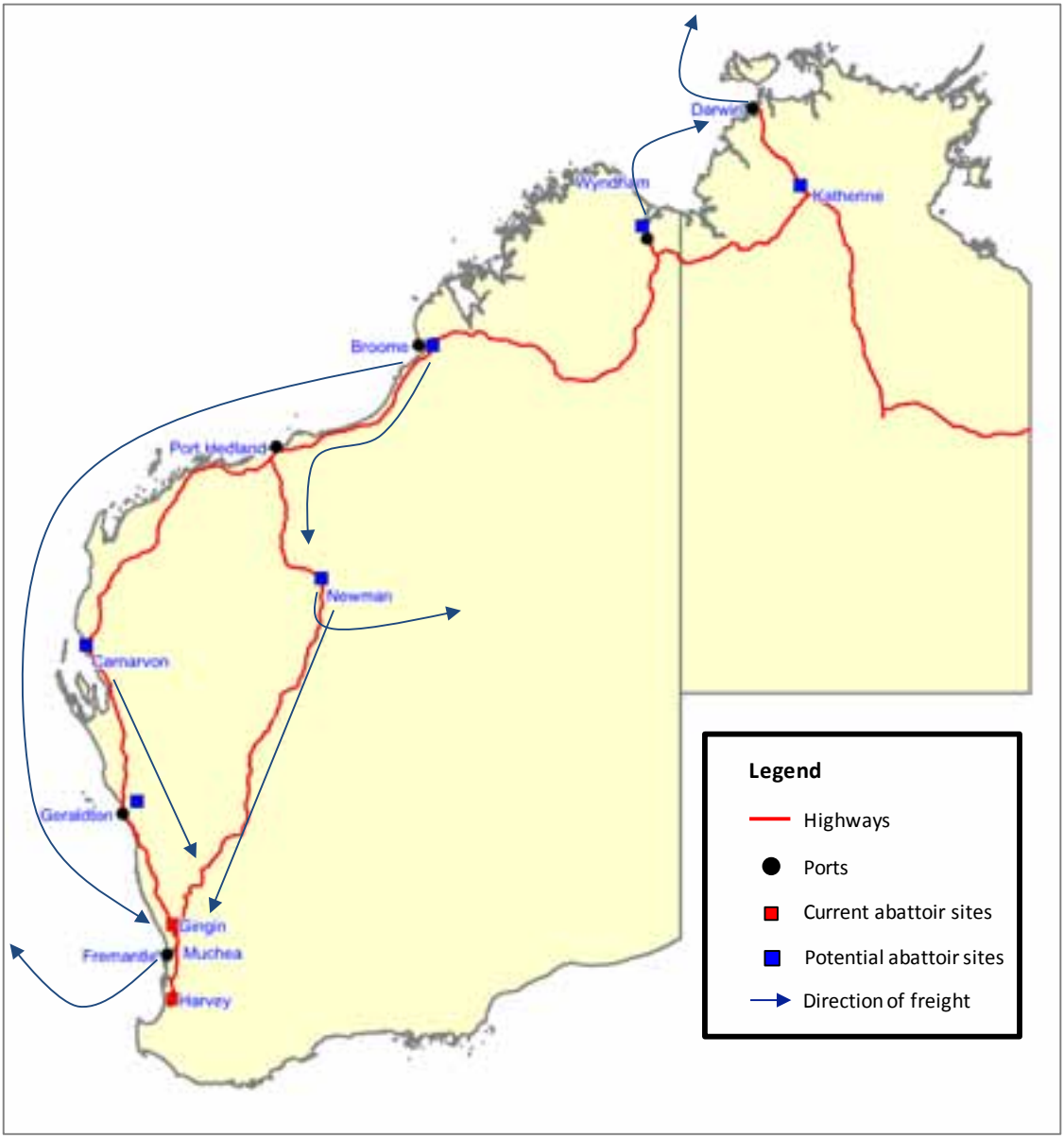
The fundamental economic viability of a facility under this model would be dependent on the cattle numbers available, and attracting the attention of a processor with operational experience and market access. Such a processor would need to determine that a cattle processing stream was viable, and then seek to address the incremental benefits and costs of seasonal processing of a second and third species.

4.1 Abattoir location options

Figure 8 on page 25 shows the sites which were considered in this study for the location of a new abattoir, and indicate the direction of freight (live cattle and processed meat) that would be applicable for each.

The strengths and weaknesses of these sites are considered in this section.

Figure 8 - Potential sites for abattoir development, showing product direction flow



4.1.1 Gascoyne/Murchison

There are limited options for new abattoir development in this region, with Carnarvon being the only population centre of any size at all. Carnarvon is the site of a mothballed meatworks, located 12km north of the town to the north of the Gascoyne River. It is currently owned by a Perth-registered company which has sought interest from Asian importers from time to time, but has no current plans to re-open the facility.

The works is well sited in relation to production zone and local feed sources, but was originally built for the slaughter of goats. To slaughter cattle, considerable new investment in beef slaughter and processing would be needed. The works does not have a rendering plant, and waste was previously burnt on the premises. This approach would not be approved if the works was to be re-instigated today.

The plant, if recommissioned, would most profitably operate as a dual species facility, which would address seasonality concerns regarding cattle, since goat supply is weakest in the winter, when cattle supply is strongest.

Development of a facility here would support a Queensland-style model of gradual value improvement through southward movement towards market.

However, any plans for development of a beef slaughter floor at Geraldton Meat Exports (GME) would affect the viability of a future Carnarvon works, and vice versa. There is unlikely to be enough supply of goats or cattle to support two similar medium scale dual species plants within 400km.

There have also been concerns that any new capacity developed here could have a dampening impact on the viability of Harvey Beef. Some cattle slaughtered at Harvey are bred in the Rangelands and fattened in the northern agricultural zone, before being traded through saleyards.

4.1.2 Pilbara

Location options for the Pilbara area are the major coastal centres of Karratha and Port Hedland, and the inland town of Newman. Of these, the coastal centres would be of sufficient urban scale to accommodate a major industrial employment hub, but direct competition for labour from the mining and bulk logistics sector would tend to drive up operating costs and create labour supply problems. Accommodation in these towns is already insufficient for current and forecast populations, and this does not bode well for a low-margin business such as meat processing.

The town of Newman is a more interesting option, as it is sited towards the southern end of the region, and on the main inland highway to the southern markets – commanding cheaper road freight rates than Port Hedland. Newman is also well sited in relation to mining leases with potential to use mine waste water for irrigation, which could provide capacity to overcome some seasonality problems.

Newman is also an intriguing potential site due to its proximity to mining camps and centres which are occupied by thousands of workers, requiring by one estimate, 1 million meals per year. Pilbara region primary agricultural producers have long been interested in winning supply contracts for these settlements, and meat would be a prime demand product. Current supply arrangements for these settlements, however, are dominated by third party logistics companies, who source basic food staples from around the country in bulk volumes, and store them in Perth-based distribution systems. The dominant supplier for the sector reported for this study that road transport arrangements are typically based on a single weekly truck trip to each centre, carrying dry and refrigerated products, including made-up meals. Meat products are provided to supermarket (HACCP) standard.

While a local meat supplier (e.g. at Newman) could compete for access to this type of contract, its proximity to the mining centres would offer it no particular advantage over suppliers elsewhere in Western Australia, and indeed, other parts of Australia.

Thus Newman could offer some overall freight advantages over coastal locations, for export markets, it is unlikely to be a practical site due to labour and climate issues, as well as concerns over the ability to attract the required daily cattle supply from other regions (outside the inland Pilbara).

A facility at Carnarvon or Geraldton could be of value to much of the Southern Pilbara, by improving the access to a processing option by greatly reducing the live transport distance.

In summary, there is no obvious location for a new abattoir in the Pilbara that could overcome the barriers of labour attraction, scale, freight disadvantage and the need to access export and domestic markets via Perth. A Gascoyne or Geraldton area abattoir would be more likely to attain the overall scale required for viability, since cattle product from the Pilbara and Gascoyne needs to pass through the region to reach market.

4.1.3 Kimberley

The Kimberley region offers considerable strengths as a location for a new abattoir. This is somewhat paradoxical, as it is also the region where the competing live trade has the strongest presence and command over cattle production.

The region's producers are highly motivated by the need for new market options, but remain culturally wedded to the pastoral traditional lifestyle. The beef industry is important economically as well, although it

offers less obvious growth opportunity than energy developments currently under consideration e.g. oil and gas at James Price Point.

A rapidly growing indigenous population offers potential for a labour force which is less likely to command 'mining sector-competitive' wages, and which might be able to qualify for training and other forms of government support. Energy project development compensation schemes that might be established for indigenous interests could also be the source of capital for deserving industrial projects.

The region boasts the largest cattle herd in the Rangelands, currently producing around 150,000 head per year for sale. There is some potential to improve on this figure if indigenous managed properties in the region can increase their stocking rates and turn-off through increased professionalism and support.

This area may also qualify for some forms of regional stimulation investment in meat processing due to its unique remoteness and its unhealthy over-reliance on the export trade.

The West Kimberley offers the cheapest access to markets via Perth in absence of viable shipping and air options direct to Asia and Middle East (see Section 7). Broome and Derby are the only two population centres, of which Broome is the largest at 14,000 permanent residents. Broome has a deep water port, and a coastal shipping service. It has a nascent industrial estate on its outskirts which would welcome a major manufacturing development, but there are concerns that the general population would not. The city is focused on its tourism industry as well as the nearby energy developments, and development approvals may be problematic to acquire.

Derby has been mooted as a community more suited to the development, but is hampered by its small population (4,000) and its lack of port facilities, as well as the extra road distance to Perth. Derby does have a major airfreight capability (via Curtin Airbase), which could be useful if direct passenger flights to Asia eventuate on the back of regional developments, but this is of peripheral interest at present. Curtin Airbase also offers land available for industrial use, but this is at present unserviced.

In the East Kimberley, Wyndham is a small port town near Kununurra, with the capacity to host industrial activities associated with its shipping trade on behalf of the Ord River area. Kununurra has only 6,000 people and may be below the level that could reasonably support a modern abattoir, but has some advantages in relation to the sea freight opportunities and proximity to a large cattle production area in the Northern Territory as well as Western Australia. Kununurra also hosts the beef processing facility which closed most recently, and could be considered for re-opening, if water licences etc could be negotiated.

The recent developments re the Katherine, Northern Territory abattoir, if they progress satisfactorily, would tend to militate against an East Kimberley development, since the pool of available cattle would have shrunk.

In summary, the most appealing option for more detailed examination is the Broome area.

Despite closures of many smaller abattoirs in recent times, overall processing capacity in Western Australia is sufficient to meet average demand, but is geographically uneconomic to access for the Northern Rangelands industry. The processing sector is understood to be operating on thin commercial margins.

Threatened changes to Indonesian live import activity have encouraged some interest in re-establishing Northern Territory processing capability, which would benefit Kimberley producers. An existing sheep/goat abattoir near Geraldton is also considering investment in a beef slaughter floor to provide operational synergies. Elsewhere, dual species abattoirs would generally need to be developed around a dependable cattle base-load.

Mobile abattoirs would be unlikely to generate realistic cost-competitive processing options for northern producers, but may be valuable in establishing an interim capacity.

Investment in processing would be a high risk activity, best managed by an existing large scale processor with access to existing and potential markets. Despite the commercial risks, the regional benefits of a processor would be great, more so in the Kimberley than in the Southern Rangelands.

A processing stream could not operate as option of 'last resort', after live export. It would need to be accepted by the industry as the dominant stream for Northern Rangelands production.

Of the potential location options, Broome offers the greatest benefits in terms of labour availability and access to markets.

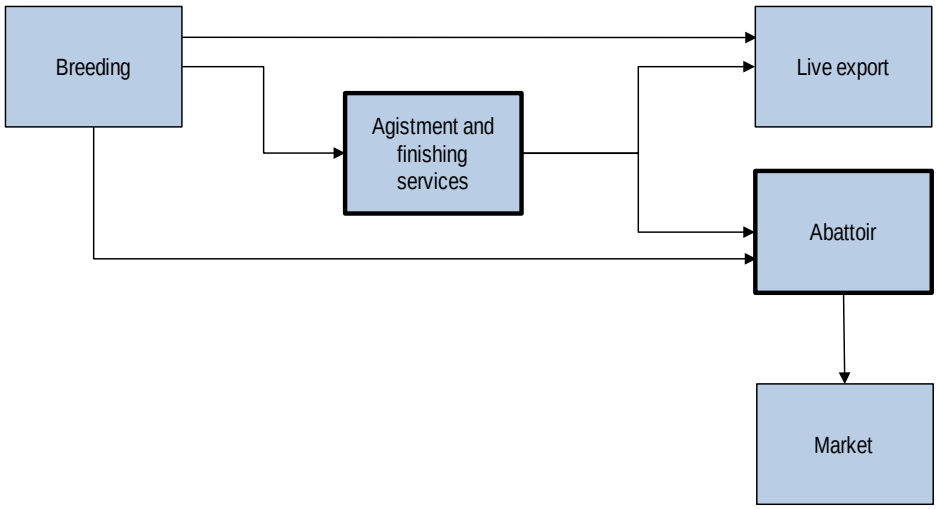
5. DEVELOPMENT OF AN AGISTMENT INDUSTRY

In the course of this study it has become clear that the current state of cattle management in the Rangelands would have to change if a new abattoir was to be successful. The focus on the live trade has led to a very simple marketing process whereby cattle are bred and fattened, by and large, on a single property, mustered and accumulated for sale and shipment. Breeding programs have improved the quality of stock in recent times, but Bos indicus cattle, suited to the live trade, proliferate.

A northern abattoir would most likely be invested in as part of a structured move by the industry towards an integrated processing stream. A critical component of such a stream would be the development of an agistment and/or backgrounding sector in the vicinity of the works, as illustrated in Figure 9. This sector would serve the purposes of:

- Smoothing out cattle supply by providing a means of accumulating cattle in proximity ahead of the wet season when mustering is not possible
- Providing a reliable means of fattening animals to the optimum weight despite rainfall problems
- Spreading risk between producers and backgrounding properties

Figure 9 - Necessary enhancement of the simple live export supply chain

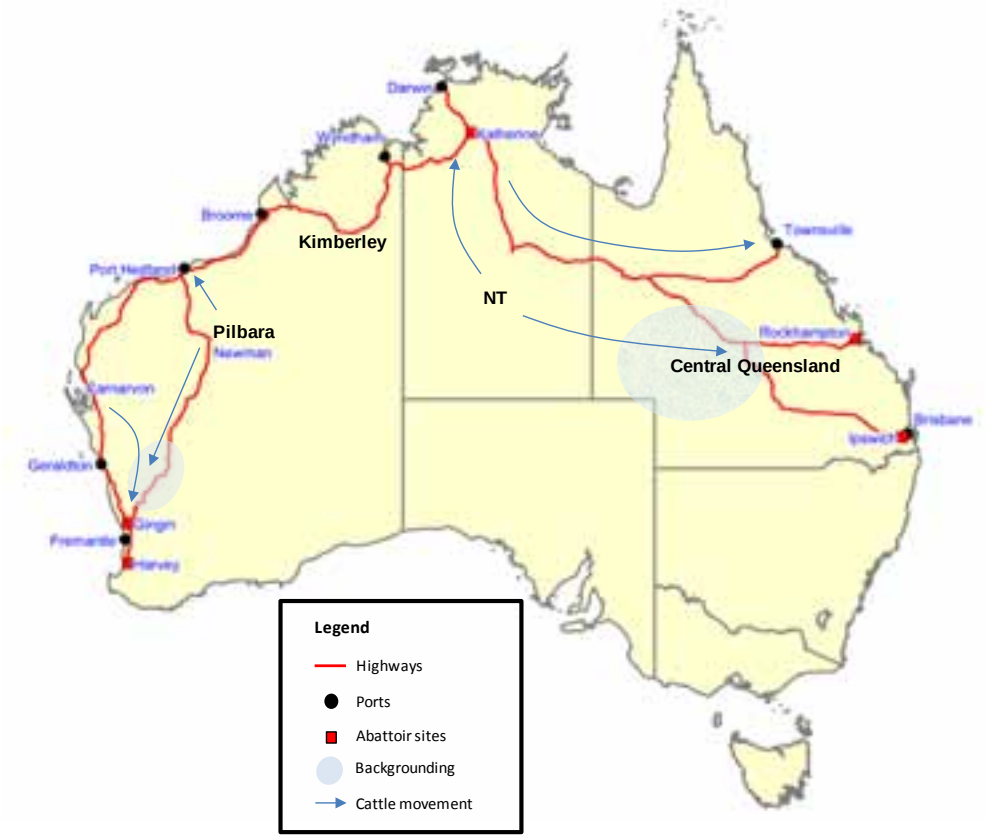


In agricultural regions, this service is provided by feedlots as well as pastoral properties, wherein cattle are fattened on grain, often under intensive accommodation conditions.

There is, however, very little evidence of cattle, from the most northerly areas, being grown out on specialist properties prior to sale at optimum weight. Some investment has been made in irrigation, and some properties now offer intensive use of irrigated fodder crops as a staging point, but the practice is not widespread, and the impediments to the development of pastoral land for this type of purpose are many.

Figure 10 shows how backgrounding is commonly undertaken as part of a long distance, staged journey from breeding property to market, in Western Australia but more substantially in Central Queensland. Cattle from the eastern Northern Territory routinely traverse much of Queensland en route to live export points and abattoirs, via backgrounding properties throughout the southern and central latitudes. The scale of Queensland herd and annual slaughter allows this to be done in a fairly efficient manner.

Figure 10 - Use of backgrounding en route to processing



This pattern is strongly entrenched in Queensland, but much less utilised in Western Australia. There are very few properties north of Geraldton at which backgrounding takes place. There are also no feedlots north of Geraldton, as illustrated by the map at Figure 11, which shows how the Queensland feedlot industry is able to make use of grain supply generated from cropping areas in Central Queensland and the Downs to the south.

The grain growing areas in Western Australia extend only as far north as Northampton, and the cost of freighting grain from those areas to the Pilbara and Kimberley is too high for a traditional feedlot sector to be developed in the tropics.

Other sources of feed such as tropical grasses under irrigation, and horticultural roughage waste have been suggested as alternatives to grain. Irrigation using artesian water is beginning to grow in popularity, but the costs of clearing land and installing centre pivots, for instance, are high, and the process of gaining permits is difficult under current pastoral lands tenure arrangements.

In the Kimberley, increased access to artesian water is being managed via the development of regional water plans, which are in the early stages of implementation. The area of land identified for potential use of this nature to date is relatively small. A zone to the south of Broome adjacent to the Great Northern Highway has been provisionally identified for potential development of irrigation, and some similar zones exist elsewhere. It will, however, be some time before this type of development will be fast-tracked.

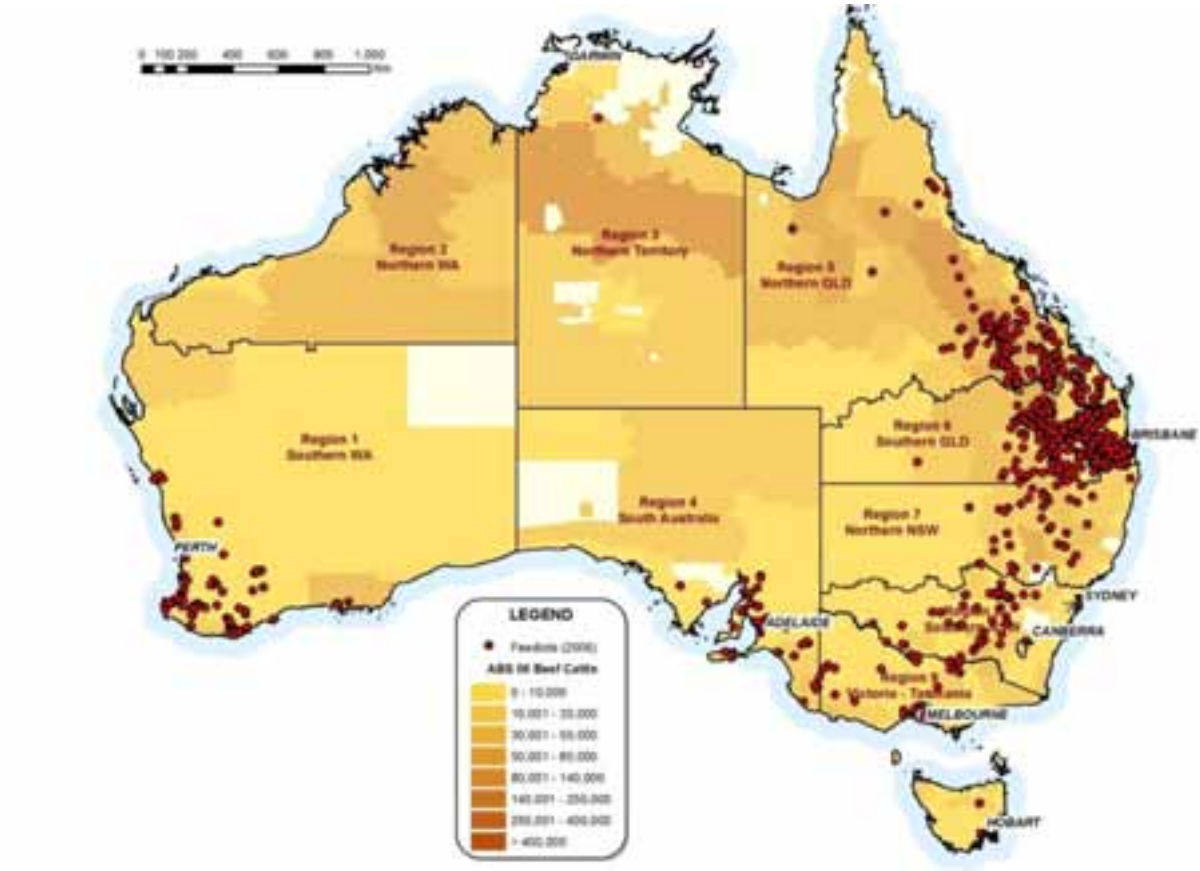
There is also considerable doubt as to the viability of this type of activity (irrigation for cattle feeding, or backgrounding in general), as there is little commercial experience with the processing sector in the northern areas. Other commercial crops will compete with fodder for use of any artesian water approved, particularly as water-intensive cropping (e.g. rice) disappears from the Murray Darling Basin.

An abattoir development would increase the speed of implementation of an agistment/backgrounding sector in the area. An abattoir capable of handling 100,000 head per year would need the support of an agistment sector capable of holding up to 25,000 head to maintain supply through the December-March period.

There is no reason this sector needs to be concentrated into a single property or zone. It could equally be made up of a large number of properties with water licences and centre pivots. Investment by producers in this type of capability would be stimulated by a staged public planning process for a processing stream. The most effective way of developing this sector would be for the government to provide incentives for producers and land-owners to invest in this type of activity as part of a regional strategy.

The development of an agistment sector could be identified as a key pre-requisite for an abattoir development initiative. Even if an abattoir is not subsequently constructed, the agistment sector would prove an asset for the local industry in finishing animals efficiently for any market type.

Figure 11 - Feedlot locations in Australia (2006)



Source - MLA (2009)

Development of an agistment/backgrounding industry in the northern region would be beneficial to the cattle producers, providing a basis for future supply chain development, including processing options. Grain feedlots are not viable in the Rangelands, but greater irrigation and mine dewatering offer potential platform for this development. Agistment services could be provided in a range of coastal zones and properties throughout the region.

6. MARKET CONSIDERATIONS

6.1 Impact on export prices

The successful introduction of a processing stream would have an impact on the international meat market and Australian exporter performance.

Australia exports around 900,000 tonnes (shipped weight) of beef each year, a figure which has remained fairly steady, although sales to the US have been in decline, balanced by increased sales into SE Asia.

Australia also exports around 900,000 head of live cattle, a figure which has recovered from a serious dip in the middle of the decade (down to below 600,000 head).

World beef consumption has been rising with demographic increases, initially driven by population increases in the developed world, but now more by increased affluence in the developing world. Beef consumption in the developed world fell during the early part of the decade, but has recovered somewhat in recent years. Table 9 illustrates some projections of changing global beef demand, which suggest an ongoing steady role for Australian producers, servicing Asia in particular.

Table 9 - Long term global beef demand projections

Region	*Annual growth in total meat consumption (%)*		*Total meat consumption (million metric tons)*		
	1982—94	1993—2020	1983	1993	2020
China	8.6	3.0	16	38	85
Other East Asia	5.8	2.4	1	3	8
India	3.6	2.9	3	4	8
Other South Asia	4.8	3.2	1	2	5
Southeast Asia	5.6	3.0	4	7	16
Latin America	3.3	2.3	15	21	39
West Asia/North Africa	2.4	2.8	5	6	15
Sub-Saharan Africa	2.2	3.5	4	5	12
Developing world	5.4	2.8	50	88	188
Developed world	1.0	0.6	88	97	115
World	2.9	1.8	139	184	303

Source — FAO annual data. Total meat consumption for 1983 and 1993 are three-year moving averages. .

The addition of new processed meat volumes (average 17,500 tonnes – see Section 8) from a new northern abattoir, would increase Australian meat output by around 2%. This would be insufficient to have more than a superficial impact on Australian export prices, but would certainly be a factor in the mix of influences, which include customer perception, global affluence, foreign exchange developments and local and international climatic impacts.

The Australian industry is recovering from a poor year in 2009, with major price reductions, largely relating to the global financial crisis and over-supply in key markets. Australia's strong currency has been a price inhibitor also.

In the long run, the increase in overall global meat production would be minimal, since the processed product would replace some of the live animals currently being exported to Asia. Export prices, however,

can be expected to remain volatile into the future, and this will have an obvious influence on processor returns and risk profiles.

6.2 Prices paid to abattoirs

High level cost-modelling for this project is described in Section 8. An abattoir can gain revenue from sales of meat, offal and rendered bi-products. For the purposes of the model, an average price of $1.50/kg meat at the abattoir gate is assumed. Prices of offal and rendered bi-products are as set out in Table 10.

Table 10 - Recent offal and rendered bi-product prices

Beef Offal	*Avg. Wt per animal*	*Price/kg (May10)*	*Price per animal*
Tongue	1.69	$10.11	$17.09
Skirt	0.72	$4.05	$2.92
Tail	0.77	$5.05	$3.89
Cheek Meat	1.00	$3.49	$3.49
Hearts	1.58	$1.40	$2.21
Liver	5.49	$1.29	$7.08
Tripe Pieces	9.16	$2.07	$18.96
Render Co-products		Price/tonne (May'10)	
Meat and bone meal		$543.22	
Tallow (<4%FFA)		$697.50	

Source – MLA periodical update

6.3 Market access

To gain access to Asian and Middle Eastern market, the cost of delivering product from the abattoir must be equal to or better than competitors offering similar products. North western West Australian processors do face some freight cost penalties against other West Australian processors (see Section 7), but Western Australia has sea freight advantages into SE Asia over competing supplier states and nations. Western Australia is freight advantaged into SE Asia and the Middle East, while eastern Australia has good access to Korea and Japan.

The optimum destination for the product will be determined largely by the regions for which a competitive transport chain can be found. The use of extended existing export corridors (i.e. road transport to Fremantle) would lock in higher costs than SW competitors, particular for Kimberley and Pilbara producers. To compete via these chains would lead to reduced returns to producers unless premium consumer prices can be generated through quality and branding strategies.

6.4 A Rangelands processing market

It could be important to producers that any new processing stream available to them did not exclude the benefits of a competitive market operating for the purchase of their slaughter cattle. If a single operator was given control over any new facility ina remote location, there would be a risk that the processor would secure for itself any price differential margins over competing live export prices, rather than pass these on to local producers. While it is not always possible for vibrant markets for services to operate in remote locations, there are models under which competition between processors could be locked in, to ensure that producers could maximise their returns through the free exercise of choice.

Global demand for meat is being sustained by growth in affluence in the developing world. Western Australia is well positioned to capitalise on new Asian demand. A new abattoir would not add substantially to Australia's meat exports, but could add to current price volatility for Australian processors.

7. TRANSPORT AND SUPPLY CHAIN ISSUES

7.1 General

7.1.1 Reliability of price and service

Access to reliable transport is vital to the location of any abattoir. Reliability in this context pertains to both price and service quality. Freight transport cost is a critical component of the meat supply chain, involved at every stage from the movement of the live animal from the breeding property, through various stages to the processing plant, culminating in the haulage of the meat products to the various domestic and global market destinations. Differences in overall freight costs are significant factors influencing the competitiveness of cattle producers and abattoirs in different locations in Australia and elsewhere.

The remoteness of the potential locations under consideration here makes transport cost and service quality less predictable than in areas where competition between transport suppliers and modes is stronger. In Western Australia, Harvey Beef is located only 150km from the port of Fremantle, on a major highway. It is close to a large area of intensive cattle production and benefits from the availability of multiple road transport suppliers for the delivery of cattle to the facility, and the transport of finished product to the port. Road transport prices are very predictable for a steady freight operation of this nature, and transporter margins are low. The scale of the task is quite significant, and the company can therefore lock in road transport arrangements via long term contracts. The company and its buyer partners are therefore able to factor in transport costs into the overall pricing of product into its markets.

By contrast, an abattoir in a remote district may not be able to command strongly competitive prices, or service reliability, due to the lesser levels of competition between suppliers. Transport charges, on a unit cost basis, will increase with distance of the haulage task, and with demographic sparseness. Road transport in the subject area is the most predictable transport mode, but there is a limited number of suppliers, which means that freight rates will typically be slightly higher than elsewhere, and there are more likely to be instances of shortfalls in capability and operator performance.

An abattoir is a permanent fixture and once established, must rely on whatever transport options are available in that location for the duration of its economic life. Transport options can change over time, particularly where there are few suppliers of road, rail, sea and air transport, and where reliance on backload rates is critical. Road transport is generally available at all potential locations and population centres on the state road network. Sea and air options, however, may change from time to time in response to government shipping policy, ports policy, market forces and commercial decisions by dominant operators. In the subject area of this study, there is currently only one shipping option (from the Kimberley only) and no substantial air freight operations suitable for the purpose.

The choice of location of an abattoir to serve a particular region must take into account these transport risk issues.

7.1.2 Cost of transporting live animals vs. processed product

In general, the transport of processed product will be considerably cheaper than transport of live animals. The closer the abattoir can be located to the areas where cattle are being finished, the cheaper the overall transport cost from pasture to market. Live transport of cattle requires the carriage of the entire animal, in contrast to the haulage of processed meat which is obviously more efficient in terms of space and mass. Live transport also involves logistical and welfare costs related to handling and spelling of the animals, which have significant impacts on overall transport costs. Live animal road transport costs also increase with distance, as truck driver fatigue regulations combine with animal welfare regulations to increase the effective cycle time for the vehicle and driver. Shipping of live animals is also made expensive by the raft of regulations covering the handling of animals prior to and during shipment from Australian ports.

Processed product can be carried on all modes of transport much more efficiently (on a c/kg basis), with the main proviso being the availability of power and equipment for retaining low temperatures in transit and storage, and meeting food safety requirements.

7.2 Road transport – live animals

Road transport is the most common mode for the transport of live cattle on the Australian mainland. There is a rail service linking some Central Queensland saleyards with the major coastal abattoirs, but this service is provided by a subsidised state government enterprise and is expected to shrink in scope in the coming years. All other movements from property to saleyard and abattoir are handled by road transporters.

Road transport utilises purpose-built multi-deck road train configurations to carry large numbers of animals in the standing position. The cost of these services is a function of capital, vehicle utilisation, maintenance cost, fuel and driver time. Distances are often great, and these vehicles travel over roads of varying standards, particularly when affected by seasonal wet weather. Many important routes are unsealed and road maintenance budgets are stretched.

Asset utilisation is affected by the distances travelled and the general lack of backloading opportunities. Cattle originating in northern Australian properties are typically moved in a progressively southerly direction, and towards the coastal centres, for backgrounding, feeding, sale and slaughter or export. There are limited opportunities to capture revenue on return journeys, so the forward journey must cover all costs. These costs are also exacerbated by regulations governing animal welfare considerations. They differ from state to state, and various concessions are available to meet special circumstances, but the need to spell cattle for significant periods over long journeys is an important component of driver time and vehicle cycle time.

Recent efforts by regulators to increase animal welfare provisions have been compounded by similar national efforts to enforce stronger driver fatigue limitations. There has been considerable concern expressed by transporters that the two sets of regulations conflict when applied to livestock transport in some circumstances. Truck drivers and their cargo must rest or be spelled at different points in the long distance journeys, with consequent impacts on overall productivity and efficiency.

National Chain of Responsibility regulations, which serve to increase the spread of risk and responsibility for truck driver behaviour throughout the supply chain, are also driving increased attention to regulatory requirements in driver practice. Volumetric loading concessions apply in Queensland and Western Australia, though not New South Wales. These concessions allow additional mass, and loading based on filling trailers safely and comfortably rather than simple mass measurement. In some states there is pressure to remove some of these concessions on the basis of climbing road and bridge maintenance costs.

The net impact of these recent developments, along with rising fuel prices, is gradual upwards pressure on road freight rates.

7.2.1 Freight rates – live

Actual prices charged for journeys of this nature in Western Australia vary according to the region of origin, the time of year, animal mass, road conditions, permitted vehicle combinations and distance. For the purposes of analysis here, standard rates of $1.50/deck/km (ex Kimberley) and $1.25/deck/km (ex Pilbara and Gascoyne) are used to estimate freight costs. These values equate to around 6 cents and 5 cents/km/head respectively, which are also in line with estimate freight rates for similar journeys in Queensland (ALTA, 2008).

7.3 Road transport – processed meat

The transport of meat can be handled efficiently via two methods:

- Refrigerated vans – meat is packed in cartons and/or palletised and hauled to cold stores or container packing facilities
- Shipping containers – packed at the abattoir for transport direct to port for international customers

Processed meat can be carried more cheaply than live animals in the West Australian beef supply chain for several reasons.

Carriage of live animals involves the haulage of over half of the animal's mass which will not be part of the finished product. Typically the amount of saleable meat will constitute around 40% of the animal's live weight, which means that around half of the freight vehicle's capacity is wasted. The complications arising from welfare implications of hauling live animals are also avoided with meat haulage. The cost of refrigerated transport and storage, as well as fulfilment of obligations under food safety regulations, is the only area of cost disadvantage for processed products.

The major benefit of haulage of processed meat is the ability to capitalise on backload rates available for van transport on the north-south corridor. The dominant direction of refrigerated freight is to the north, carrying food and provisions for the regional centres and mining camps from distribution centres in Perth. There is considerable freight space available for abattoir products to be transported into Perth for the domestic market or export via Fremantle.

Backload freight rates will be consistently available for meat product heading towards Fremantle from northern areas, though they will be more subject to rise and fall than forward freight rates, since they depend to some extent on the existence of other back freight opportunities that might arise from time to time. This is particularly so since there are only very small number of freight companies offering this type of service in the region, and there is a single dominant supplier.

The use of refrigerated vans for export tasks necessitates a transfer of the consignment to container via a packing service, typically located close to the port. This adds a cost and time component which can be alleviated by the use of containers for the whole journey from the abattoir. Under this system an empty container is delivered from a container park near the port to the abattoir, either left on site for packing, or packed in situ on the truck, for return full. The disadvantage of this mode, however, is that backload rates are not applicable, as the movement of the empty container takes up the space on the north-bound leg. This additional freight charge would outweigh the savings made though avoiding the trans-shipment costs.

There is also a difficulty in reliably sourcing empty containers from the port for long distance freight hauls. Food grade container shortages occur from time to time and shipping lines and freight forwarders often allocate them to more local tasks to improve container utilisation.

In summary, van freight most likely offers the most attractive form of road transport available for processed product from a northern abattoir.

Table 11 - Road distance matrix (km)

Potential site	*Perth*	*Darwin*
Wyndham	3,172	929
Derby	2,339	1,735
Broome	2,186	1,872
Port Hedland	1,650	
Karratha	1,563	
Newman	1,197	
Carnarvon	930	

7.4 Sea freight

7.4.1 Coastal services

For processed product, sea freight options for connection to Perth and Darwin exist for the Kimberley Region. A shipping service is currently provided by Jebsens Shipping under contract to the state Government. The multi-purpose ship is required to service Broome and Wyndham, but also currently calls at Darwin, delivering cement product ex Perth. This service operates on a maximum 17 day schedule.

The purpose of the service is to provide competition for road freight transport and provide price options for deliveries into the Kimberley and export products out. The service is operated under short term (2 year) contracts, although the current operator will have options to extend for two three year periods post 2012.

The operator has the responsibility to attract customers for the service, and must juggle competing customer needs with available space, as well as seasonality of certain agricultural export tasks.

There are no such options serving ports in the Pilbara and Carnarvon regions at present. As the regional economy grows in response to energy and mining developments, some shipping lines are investigating opportunities to introduce new services, particularly linking Western Australia with Asian ports, but these remain speculative at present.

Sailing frequency for any new Asia services, however, may be a problem, with weekly or fortnightly schedules likely. Reliance on a single operator (and ship) would also reduce confidence in the ability to meet market needs. These small scale services are likely to be more expensive than the established liner services from Fremantle, but may prove most cost-effective when road or sea freight transfers to Fremantle are taken into account

The output of an abattoir would be an attractive business for the shipping line, and it would offer road-competitive rates to Fremantle for transhipment to export markets. The low frequency of the existing service, however, would require the ability to hold up to 17 days production at the abattoir or port area, either through cold stores or refrigerated container storage. This would have implications for cash flow and payment terms, instituting an average eight days delay in getting product to the international customers, with consequent financial costs to the business.

The other downside of committing, through an abattoir location decision, to a coastal shipping service as provider of the core transport service, is that the service is subject to ongoing short term subsidy contracts with the WA State government, and cannot therefore offer long term security of service or price.

7.4.2 Coastal sea freight rates

Indicative rates have been sought from the current operator of the service for the purposes of this report. The dominant direction of freight is south-north as per road freight, but backload discounts are minimal, as the same deck space is taken up by the container whether it is full or empty.

Table 12 - Indicative coastal sea freight rates

$/TEU	*Fremantle*	*Darwin*
Broome	$2,500	$4,800
Wyndham	$4,000	$4,400

Source – Jebsens Shipping (conversation)

These rates compare favourably with the road freight rates nominally available for the journey to Fremantle, and are lower than road rates to Darwin. Overall, the cost of freighting a container to an international port is lower for Fremantle than Darwin, despite the greater distance. This is a function of the current and projected mix of traffic using the service, and the relationship with road freight rates – shipping is a 'price-taker' on this corridor.

These indicative prices are not stable, or reliable indicators of future sea freight service prices, since the mix of traffics available and the commercial approach of the ship service operators is subject to considerable change over time.

7.4.3 International sea freight

Sea freight is the most common mode used for Australian meat exports. Around 0.9 million tonnes of beef is exported annually via Australian ports, of which Fremantle accounts for only 3% (MLA, 2009, DAFWA,

2008). As a major Australian hub, Fremantle also boasts frequent sailings to SE Asia and the Middle East (close to daily) by a variety of shipping lines and there is a good level of competition for freight as a result.

Darwin has advantages as a hub for northern Australian trade into Asia, but is yet to gain critical mass regarding volumes that attract shipping lines. It is unlikely to be able to attract southern Australian export container freight from the southern ports, despite its modern rail link, due to the great distances and high cost of land transport in comparison with sea freight rates

Table 13 - Indicative international sea freight rates

Fremantle-Singapore	$2,000
Darwin-Singapore	$4,000

Source – Shipping Company conversation

It should be noted that international container freight rates can vary considerably over time, according to global trade conditions and the state of shipping capacity. There are indications that box rates for the Asian-Australian trade are on the rise again after a depressed period during the Global Financial Crisis.

7.5 Air freight

Considerable volumes of chilled meat are exported from Australia by air, on commercial passenger flights from the major airports. Chilled meat attracts higher prices than frozen meat, particularly in the more affluent markets, and air freight allows delivery timelines that support chilling. Such products can be landed in key Asian centres for well under $1/kg.

Opportunities to use air freight from remote locations, however, are limited and likely to be transitory (or opportunistic). There are plans for commercial flights into Asia from some north-western West Australian airports and these may increase with new regional energy developments in the pipeline.

Use of airfreight, however, is only justified by the better quality cuts of meat, rather than the entire carcass.

Full time lease of a cargo jet to access nearby Asian destinations offers some attraction. It would eliminate all landside and sea freight connections, and move chilled products directly and quickly into Asian destinations not well served by sea. Unfortunately, however, it is difficult to see how this could be achieved for less than $3/kg, and would have several attendant risks. The existence of a steady market to accept this volume of high priced meat would also be problematic.

There would be occasional opportunities to capitalise on spare air freight space on passenger services linking Perth with Kimberley and Pilbara centres. South-north is the dominant freight movement direction on this corridor as per other freight modes, and backload rates would apply to the use of return freight space on the southern movement to Perth, for trans-shipment to international services.

Indications are that this method could be a realistic means of getting small volumes of high value meat to market, with the bulk of production using orthodox road and sea transport.

As with other modes, air freight rates into Asia from Perth are likely to be cheaper than Darwin options.

7.6 Transport summary and analysis

North West Western Australia boasts proximity to South East Asia, which should, prima facie, give its cattle industry a significant competitive advantage over other production regions. Jakarta is 2100km from Broome, and Singapore is 2900km distant, compared with the 2200km road distance to Perth. The concentration of Australian transport efficiencies into capital centres, however, means that this advantage cannot be capitalised on at present. Even Darwin, which boasts a new port and rail corridor, cannot compete with Perth or Brisbane on sea or air freight charges. The isolation of the Northern Australian centres from the main southern population centres and the high costs of land transport relative to sea freight ensures that they will never fill the role of northern gateways for southern Australian freight.

The only traffic type for which these northern areas have a clear advantage is specialist live animal shipping. These vessels are chartered for specific point to point movements from general break bulk wharves which do not require expensive wharf loading gear. Freight rates for live shipping from the northern ports into Asia reflect its strong advantages over the southern ports. This combined with the lack of access to international container freight shipping, accounts for the dominance of the live trade, which grows with northward distance.

The northern production areas will need to hub their processed meat products via Fremantle in order to access international markets via sea or air freight. This places them at an immediate disadvantage in relation to SW zone producers, which have easy access to Fremantle via the Harvey meatworks, only 150km to the south east of the port. On the positive side, the existence of consistent backload freight pricing for road and coastal sea freight, from the Kimberley in particular, means that the freight disadvantage between the zones is not great.

The cost of transporting processed meat is far lower than that of transporting live animal equivalents (in c/kg of meat). This is reflected in the analysis below which seeks to compare (on an indicative basis) the freight costs associated with potential abattoir developments at different locations in the subject region.

The costs of hauling cattle into hypothetical abattoirs in each location, and then carrying processed meat to export locations are modelled in the simple analysis outlined below.

To calculate these costs, distances and freight rates are used to complete matrices of freight costs of different types applying to the producers in each region, with respect to different abattoir locations. These costs are then compared to the freight costs that would be involved in the transport of live cattle for processing at Harvey Beef, for transfer to Fremantle for export. They are also compared to the freight costs faced by producers in south western West Australia, delivering their cattle to Harvey Beef for processing and export.

The modelled freight costs associated with abattoirs in different locations are then compared with freight costs associated with live export from each region.

Assumptions:

Some basic freight rate assumptions are made regarding the costs per km of live haulage in different regions:

- *Kimberley region rates are usually quoted at around $1.50/deck/km, while rates in more southerly districts are currently quoted at $1.25/deck/km, reflecting road quality, terrain, and market factors.*
- *Freight rates for frozen or chilled products are based on indicative quotes received from current freight operators*
- *Where road freight rates for refrigerated vans are used, with an additional charge for packing into containers and movement to the dock*
- *Where coastal shipping freight rates are used, containers are transhipped directly to international shipping with no significant cost*
- *Haulage distances from each production region to abattoir sites or live export ports are indicative, as the production regions are very large and properties within a region can range from 50-500km from the nearest such centre*
- *Common elements such as loading costs and storage costs associated with transport have not been modelled.*

7.6.1 Freight cost modelling – comparison of new abattoir with existing facilities

The following tables show the road distances and freight rate estimates that underpin the freight cost analysis:

	Distance (km)					
	Live transport to potential abattoir sites					
Originating area	Wyndham	Broome	Newman	Carnarvon	Geraldton	Harvey
Kimberley E	250	800	1800	2250	2700	3100
Kimberley W	800	250	1250	1700	2200	2600
Pilbara central	2000	1200	300	950	1000	1550
Gascoyne	3000	2200	400	300	600	1100
South west						150

	Freight rate ($/deck/km)					
	Live transport to potential abattoir sites					
Originating area	Wyndham	Broome	Newman	Carnarvon	Geraldton	Harvey
Kimberley E	1.5	1.5	1.5	1.3	1.25	1.25
Kimberley W	1.5	1.5	1.5	1.3	1.25	1.25
Pilbara central	1.5	1.5	1.25	1.25	1.25	1.25
Gascoyne	1.25	1.25	1.25	1.25	1.25	1.25
South west	1.25	1.25	1.25	1.25	1.25	1.25

These tables calculate the road freight costs for each production area-abattoir option, and the additional costs of transporting processed product to export port location by road or coastal sea freight (where available). Freight costs in all cases are reduced to c/kg meat for comparison:

	Road freight ($/head-lwt)					
	Live transport to potential abattoir sites					
Originating area	Wyndham	Broome	Newman	Carnarvon	Geraldton	Harvey
Kimberley E	15	48	108	117	135	155
Kimberley W	48	15	75	88.4	110	130
Pilbara central	120	72	15	47.5	50	77.5
Gascoyne	150	110	20	15	30	55
South west						7.5

	Road freight (c/kg)					
	Live transport to potential abattoir sites					
Originating area	Wyndham	Broome	Newman	Carnarvon	Geraldton	Harvey
Kimberley E	9.38	30.00	67.50	73.13	84.38	96.88
Kimberley W	30.00	9.38	46.88	55.25	68.75	81.25
Pilbara central	75.00	45.00	9.38	29.69	31.25	48.44
Gascoyne	93.75	68.75	12.50	9.38	18.75	34.38
South west						4.69

	Freight to port ($/20 tonne consignment)					
	Processed meat abattoir to port					
Mode	Wyndham	Broome	Newman	Carnarvon	Geraldton	Harvey
coastal - Fremantle	4400	2750				
coastal - Darwin	2200	4400				
road - Perth	4700	3300	2400	2060	1300	500
road - Darwin	2700	5900				
live sea transport						

	Freight to port (c/kg)					
	Processed meat abattoir to port					
Mode	Wyndham	Broome	Newman	Carnarvon	Geraldton	Harvey
coastal - Fremantle	22	13.75				
coastal - Darwin	11	22				
road - Perth	23.5	16.5	12	10.3	6.5	2.5
road - Darwin	13.5	29.5				
Mode	Processed meat sea freight to Asia					
Singapore ex Fremantle	10	10	10	10	10	10
Singapore ex Darwin	20	20	20	20	20	20

These tables calculate a through cost for containerised meat product from each production area to Singapore via the competing abattoir location options. The lowest cost option for each production region is highlighted in yellow. These costs are then compared with notional (estimated) costs incurred by the South West beef producers in getting processed products to market via southern beef abattoirs, to illustrate the competitive freight disadvantage that a northern abattoir would face in relation to existing West Australian processed meat exporters:

	Freight to Asia via Fremantle (c/kg)					
	Overall freight cost to Singapore via abattoir at:					
Originating area	Wyndham	Broome	Newman	Carnarvon	Geraldton	Harvey
Kimberley E	41.38	53.75	89.50	93.43	100.88	109.38
Kimberley W	62.00	33.13	68.88	75.55	85.25	93.75
Pilbara central	108.50	71.50	31.38	49.99	47.75	60.94
Gascoyne	127.25	118.25	34.50	29.68	35.25	46.88
South west						17.19

Advantage of new abattoir over transport from Rangelands to Harvey for processing (c/kg)						
	Freight differential					
Originating area	Wyndham	Broome	Newman	Carnarvon	Geraldton	Harvey
Kimberley E	68.00	55.63	19.88	15.95	8.50	
Kimberley W	31.75	60.63	24.88	18.20	8.50	
Pilbara central	-47.56	-10.56	29.56	10.95	13.19	
Gascoyne	-80.38	-71.38	12.38	17.20	11.63	
South west						

	Disadvantage against SW producers using Harvey processing (c/kg)					
	Freight differential (abattoir locations vs Harvey area producers					
Originating area	Wyndham	Broome	Newman	Carnarvon	Geraldton	Harvey
Kimberley E	-24.19	-36.56	-72.31	-76.24	-83.69	
Kimberley W	-44.81	-15.94	-51.69	-58.36	-68.06	
Pilbara central	-91.31	-54.31	-14.19	-32.80	-30.56	
Gascoyne	-110.06	-101.06	-17.31	-12.49	-18.06	
South west						

The key outcomes of the analysis are that:

- Northern producers with access to a local abattoir could gain significant freight cost advantages over the current cost of long distance transport of live cattle to southern processors; and
- The competitive (freight) advantage of the south-western processed meat chain over potential northern processed meat supply is quite low, for production areas with a nearby abattoir.

7.6.2 Freight cost modelling – comparison with live trade

A new abattoir will offer freight cost advantages over the live trade, due to the greater costs involved in transporting live animals by road and sea (particularly since the live transport includes at least 60% of lower value product (offal, bone etc). These tables seek to estimate the freight advantages in relation to the trip from production area to Singapore.

The first set of tables show costs calculation of estimated live export freight from current live trade ports to Indonesia and Singapore:

	Road freight ($/head-lwt)				
	Live transport to live port				
Originating area	Wyndham	Broome	Port Hedland	Geraldton	Fremantle
Kimberley E	15	48			
Kimberley W	48	15			
Pilbara central	120	72	12.5	50	60
Gascoyne			45	30	50
South west					12.5

	Road freight (c/kg meat)				
	Live transport to live port				
Originating area	Wyndham	Broome	Port Hedland	Geraldton	Fremantle
Kimberley E	9.38	30.00			
Kimberley W	30.00	9.38			
Pilbara central	75.00	45.00	7.81	31.25	37.50
Gascoyne			28.13	18.75	31.25
South west					7.81

	Live sea freight ($/head)				
	Live shipping from				
	Wyndham	Broome	Port Hedland	Geraldton	Fremantle
Indonesia	80	80	100	120	130
Singapore	120	120	130	140	150
	Equivalent (c/kg meat)				
Indonesia	66.67	66.67	83.33	100.00	108.33
Singapore	100.00	100.00	108.33	116.67	125.00

The following tables calculate a comparison between the live export costs and processing costs via an optimally sited abattoir for each production region:

	Freight to Asia live (c/kg)				
	Overall freight to Indonesia (live) via:				
Originating area	Wyndham	Broome	Port Hedland	Geraldton	Fremantle
Kimberley E	76.04	96.67			
Kimberley W	96.67	76.04			
Pilbara central	141.67	111.67	91.15		
Gascoyne				118.75	139.58
South west					116.15

	Broome abattoir - freight cost differential (c/kg meat)				
	Processed cost to Asia minus live export cost via live ports:				
Originating area	Wyndham	Broome	Port Hedland	Geraldton	Fremantle
Kimberley E	-22.29				
Kimberley W		-42.92			
Pilbara central			-19.65		
Gascoyne				-0.50	

	Wyndham abattoir - freight cost differential (c/kg meat)				
	Processed cost to Asia minus live export cost via live ports:				
Originating area	Wyndham	Broome	Port Hedland	Geraldton	Fremantle
Kimberley E	-34.67				
Kimberley W		-14.04			
Pilbara central			17.35		
Gascoyne				8.50	

	Carnarvon abattoir - freight cost differential (c/kg meat)				
	Processed cost to Asia minus live export cost via live ports:				
Originating area	Wyndham	Broome	Port Hedland	Geraldton	Fremantle
Kimberley E	17.38				
Kimberley W		-0.49			
Pilbara central			-41.16		
Gascoyne				-89.08	

These results show that regions with their own abattoirs would enjoy lower freight costs (as expressed by negative differentials above) than currently experienced with the live trade from their home ports. For instance, a Broome abattoir would offer a $0.43/kg meat freight saving over the direct live freight to customer port, despite having to utilise a much longer journey to market. A Gascoyne area producer with a Carnarvon abattoir would make a $0.89/kg meat saving over live export via Geraldton.

7.7 Transport issues - commentary

The analysis reflects the key point that transport of processed product is much cheaper than live animals. The abattoir locations that deliver the best freight cost outcomes in comparison with the existing alternatives are those which minimise the distance travelled by live animals, and capitalise on favourable road and sea freight rates for processed goods in a southerly direction.

These differentials are fairly significant indicators to the question of how a new processor might capture a slice of the market for meat products.

While the producer selling an animal to an exporter or processor does not pay the freight costs for the carriage of the processed product or the sea freight, these freight costs are netted off the price received by the producer. The freight cost advantages of the processed chain over the live chain are important to the overall marketability of the processed product, and to the location decision.

While road freight costs are fairly predictable, sea freight charges for export products vary over time as a result of terms of trade, global trading health, shipping availability and commercial decisions of shipping lines and ports. One of the challenges for this project is that the differentials between sea freight rates for live cattle and processed meat could swing dramatically due to global factors. Live carriers are special purpose vessels, belonging to a relatively small global fleet, which responds to a narrow range of variables more or less specific to the live trade. Container vessels suffer from the vagaries of the general freight trade and the volatile imbalance between overall capacity and demand. The costs of container freight on the Asian-Australian trade are likely to increase once more as the global economy improves, until new capacity depresses prices once more. Live trade vessel costs are less susceptible to these types of trends, but more likely to be affected by regulatory changes e.g. animal welfare concerns, or by decisions by importing countries to 'turn off' the live trade, thus increasing available capacity.

An abattoir competing with the live trade for supply of cattle will face this changeable differential with limited ability to respond to any changes in favour of the live trade.

Notwithstanding this uncertainty, an abattoir should be able to compete on freight terms with the live trade in its production region if sited appropriately with respect to transport nodes. Any freight benefits, however, diminish with distance from the abattoir.

Freight cost is a vital and substantial component of price of getting processed meat to market. A processor in the Kimberley region, however, would benefit from access to low road and sea freight rates in competing with other Australian processing streams.

The cost of transporting processed meat is far lower than live animal freight cost. This provides an advantage to processors over live export trade, which balances some of the current disadvantages.

Broome as a location takes advantage of backload road freight rates into Perth, and a regular state-supported shipping service. Freight costs into Asia via Darwin are non-competitive with those ex-Fremantle at present.

8. ABATTOIR DESIGN AND ECONOMICS

In the modern Australian meat industry, conventional wisdom is that any new abattoir should be built to handle a minimum 400 head per day. Construction of anything smaller will not cost much less to build, but the smaller throughput would result in higher unit costs of production. Some small operations are surviving, particularly in the domestic market, but the trend towards large facilities located close to coastal centres and export locations has been very strong.

The reasons for this pertain to the high fixed costs associated with the different processes involved in slaughtering animals, preparing meat, packaging, despatch and handling of offal. The costs of meeting elevated occupational health, export accreditation and food safety standards are also fairly fixed i.e. not much different for different sized operations.

The other reason for building as large a facility as possible is that a modern abattoir is most likely to be profitable if it can provide the full range high and low value cuts from each animal slaughtered, and effectively market this capability. This differentiates the model from a simpler wholesale slaughterhouse, which on-sells quartered carcasses to other chain participants and retains little value-add potential.

The downside of building a large comprehensive abattoir in an area dominated by the live trade is that the reliable supply of a minimum 100,000 head per year is problematic. The risks of any consistent failure to compete for the dominant share of annual turnoff in the Rangelands would be great, given the high capital cost and fixed operating costs associated with a facility of this nature.

The alternatives, however, are not compelling. They can be summarised as follows:

Abattoir model	*Strengths*	*Weaknesses*
Slaughter only	Lower construction cost and labour costs Less exposure to capital risk	Higher freight costs (carcasses vs packaged meat) Lower value product, inability to generate strong returns on premium cuts
Smaller comprehensive abattoir	Marginally lower capital costs and labour costs Minor reduction in capital risk	Lower output Higher unit costs Overall lower profitability potential
Hot-boning plant	Lower capital cost (chillers) Significant labour reductions (25-30%)	Lower value product, inability to generate strong returns on premium cuts Potential to limit export markets
Mobile slaughter vehicles, servicing a central regional storage and boning operation	Flexible, can manage supply problems	Equally susceptible to hot, wet weather issues Low daily output Requires local permanent cold storage and boning operation due to limited chilling capacity
Mobile slaughter staff using different slaughter premises and a port-based boning plant	Flexible, can manage supply problems Greater capacity boning function possible	High capital cost in multiple slaughter floors High labour accommodation and management costs

This cost estimate is based on the conventional 400 head per day abattoir on the basis that it will provide a benchmark cost against which the less substantial abattoir models could be tested.

8.1 Capital cost estimate

The plant would commence operations at up to 50,000 cattle per year and would be designed to handle increasing throughput on a daily 8 hour (7.6 working hours) shift, 5 days per week, 50 weeks per year, equivalent to 250 working days per year.

Initial Plant Throughput	200 cattle per day
Viable Plant Throughput	400 cattle per day

The design is based on the requirements for an export licence from AQIS to comply with USDA and EU requirements. The plant layout is designed to also meet Halal requirements.

The details of the costing are at the Appendix, along with notional plans for a facility of this scale.

Table 14 - Abattoir capital cost estimate

Description		Costs
Infrastructure	Mains electrical supply	Excluded
	Mains water supply	
	Water storage and treatment facility	
	Natural gas supply line	
	Sewerage from amenities	
Site works and Building Preliminaries	Earthworks and effluent ponds	$2,800,000
	Fencing	
	Temporary facilities	
	Soil testing and surveys	
	Roadworks and carpark	
Building works	Yards, holdings and lairage	$9,650,000
	Main process plant, chillers, freezers, loadout	
	Boiler house, engine room	
	Render building	
	Sadministration and amenities	
	Workshop	
Process equipment	Main process equipment	$12,700,000
	rendering equipment	
	Hot water boiler, heat exchangers	
	Plate freezers	
Services	Refrigeration system	$6,300,000
	Ventilation equipment	
	Effluent treatment and manure handling	
	Piped services	
	Fire services	
	Electrical distribution and control	
This estimate does not include land acquisition and connection to utility services	Sub Total	$31,415,000
	Design and project management	$2,400,000
	Total cost of abattoir	$33,850,000

8.2 8.2 Operating cost

The main costs associated with processing are capital and labour. The calculated costs associated with these items have been incorporated into a simple operating cost model (see Table 15) to estimate the overall processing cost associated with this type of development.

In the model, a small share of the capital cost is assumed spent in later years to reflect the ability to partially stage the development. A ramp-up period is also assumed, generating high costs per kg/meat, and therefore commercial losses in the early stages.

Table 15 - Abattoir cost model outcomes (over four pages)

Inputs and cost items	Unit	YR0	YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	YR10
Range of seasonal assumptions			start up years			poor seasons		optimal	range of seasonal conditions			
TASK DEFINITION												
Operating parameters												
Operating months	No.		12	12	12	11	11	12	12	11	12	12
days/week nominal		5	5	5	5	5	5	5	5	5	5	5
days/week actual			5	3	4	3	4	5	3	5	4	5
Operating days pa	No.		250	150	200	137	183	250	150	229	200	250
Shifts per day	No.		1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Volume of cattle												
- nominal per day	No.		200	300	400	400	400	400	400	400	400	400
- annualised	No.		49,999	44,999	79,999	54,999	73,332	99,998	59,999	91,665	79,999	99,998
- average carcass weight	Kgs/head	250	250	250	250	250	250	250	250	250	250	250
- yield	% carcass weight	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Annual Production												
- meat	tonnes		8,700	7,900	14,000	9,600	12,800	17,500	10,500	16,000	14,000	17,500
- offal	tonnes	0.02	1,000	900	1,600	1,100	1,467	2,000	1,200	1,833	1,600	2,000
- rendered product	tonnes	0.082	4,100	3,690	6,560	4,510	6,013	8,200	4,920	7,517	6,560	8,200
Total product mass	Tonnes		13,800	12,490	22,160	15,210	20,280	27,700	16,620	25,350	22,160	27,700

...continued

Inputs and cost items	Unit	YR0	YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	YR10
Range of seasonal assumptions			start up years			poor seasons		optimal	range of seasonal conditions			
ABATTOIR INVESTMENT												
Land + headworks	$'000	$2,500										
Siteworks	$'000	$2,800										
Buildings	$'000	$7,650			$2,000							
Equipment		$10,700			$2,000		$2,500					
Services	$'000	$6,300										
design and project management	$'000	$2,400										
Major periodic maintenance items	$'000						$1,000					$1,000
Contingency	$'000	$1,000					$500					
Sub-total; land + headworks	$'000	$2,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sub-total; buildings and site works	$'000	$10,450	$0	$0	$2,000	$0	$0	$0	$0	$0	$0	$0
Sub-total; Plant and equipment	$'000	$11,700	$0	$0	$2,000	$0	$4,000	$0	$0	$0	$0	$1,000
Totals	$'000	$33,350	$0	$0	$4,000	$0	$4,000	$0	$0	$0	$0	$1,000
Cumulative investment	$'000	$33,350	$33,350	$33,350	$37,350	$37,350	$41,350	$41,350	$41,350	$41,350	$41,350	$42,350
DEPRECIATION SCHEDULE												
Write-off												
Land	Years	50										
Buildings and headworks	Years	25										
Plant and equipment	Years	15										
Annual depreciation costs												
Land	$'000	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Buildings and headworks	$'000	$420	$0	$0	$80	$0	$0	$0	$0	$0	$0	$0
Plant and equipment	$'000	$780	$0	$0	$130	$0	$270	$0	$0	$0	$0	$70
Annual depreciation	$'000	$1,250	$1,250	$1,250	$1,460	$1,460	$1,730	$1,730	$1,730	$1,730	$1,730	$1,800
Book value	$'000	$33,350	$32,100	$30,850	$33,390	$31,930	$34,200	$32,470	$30,740	$29,010	$27,280	$26,480

...continued

Inputs and cost items	Unit	YR0	YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	YR10
range of seasonal assumptions			start up years			poor seasons		optimal	range of seasonal conditions			
OPERATING COSTS												
LABOUR												
Slaughter staff	No.	30	30	45	56	56	56	56	56	56	56	56
Boning room	No.	60	46	67	78	78	78	78	78	78	78	78
Maintenance	No.	10	5	8	10	10	10	10	10	10	10	10
Administration	No.	16	14	17	28	28	28	28	28	28	28	28
Inspectors	No.	3	3	3	3	3	3	3	3	3	3	3
Total	No.	119	98	140	175	175	175	175	175	175	175	175
LABOUR UNIT COSTS												
Slaughter staff	$	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
Boning room	$	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
Maintenance	$	$55,000	$55,000	$55,000	$55,000	$55,000	$55,000	$55,000	$55,000	$55,000	$55,000	$55,000
Administration	$	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000
Inspectors	$	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000
on-costs	%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%
LABOUR COSTS												
Slaughter staff	$'000	$2,085	$2,085	$3,128	$3,892	$3,892	$3,892	$3,892	$3,892	$3,892	$3,892	$3,892
Boning room	$'000	$4,170	$3,197	$4,657	$5,421	$5,421	$5,421	$5,421	$5,421	$5,421	$5,421	$5,421
Maintenance	$'000	$765	$382	$612	$765	$765	$765	$765	$765	$765	$765	$765
Administration	$'000	$1,557	$1,362	$1,654	$2,724	$2,724	$2,724	$2,724	$2,724	$2,724	$2,724	$2,724
Inspectors	$'000	$292	$292	$292	$292	$292	$292	$292	$292	$292	$292	$292
Total	$'000	$8,868	$7,318	$10,342	$13,094	$13,094	$13,094	$13,094	$13,094	$13,094	$13,094	$13,094
OTHER OPERATING COSTS	$'000											
Consumables	$'000	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500
Power and water	$'000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Insurances, statutory	$'000		$500	$500	$500	$500	$500	$500	$500	$500	$500	$500
Other	$'000		$500	$750	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Total	$'000		$2,500	$2,750	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000

...continued

Inputs and cost items	Unit	YR0	YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	YR10
range of seasonal assumptions			start up years			poor seasons		optimal	range of seasonal conditions			
TOTAL COSTS												
Labour	$'000	$8,868	$7,318	$10,342	$13,094	$13,094	$13,094	$13,094	$13,094	$13,094	$13,094	$13,094
Other	$'000	$0	$2,500	$2,750	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Depreciation	$'000	$1,250	$1,250	$1,250	$1,460	$1,460	$1,730	$1,730	$1,730	$1,730	$1,730	$1,800
Interest	10%	$3,335	$3,210	$3,085	$3,339	$3,193	$3,420	$3,247	$3,074	$2,901	$2,728	$2,648
Total	$'000	$13,453	$14,278	$17,427	$20,893	$20,747	$21,244	$21,071	$20,898	$20,725	$20,552	$20,542
Annual cattle slaughtered	No.		49,999	44,999	79,999	54,999	73,332	99,998	59,999	91,665	79,999	99,998
Cost per kg	$		$1.64	$2.21	$1.49	$2.16	$1.66	$1.20	$1.99	$1.30	$1.47	$1.17
Margin	15%		$0.25	$0.33	$0.22	$0.32	$0.25	$0.18	$0.30	$0.19	$0.22	$0.18
Imputed price	$		$1.89	$2.54	$1.72	$2.49	$1.91	$1.38	$2.29	$1.49	$1.69	$1.35
annual processing cost (less margin)			$14,278,350	$17,426,600	$20,892,800	$20,746,800	$21,243,800	$21,070,800	$20,897,800	$20,724,800	$20,551,800	$20,541,800
Revenue (abattoir gate)												
Meat	$/kg	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50
Offal	avge kg/head	20	20	20	20	20	20	20	20	20	20	20
	$/kg	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00
Rendered bi-product	$/head	$33.00	$1,649,974	$1,484,976	$2,639,958	$1,814,971	$2,419,961	$3,299,947	$1,979,968	$3,024,952	$2,639,958	$3,299,947
Total revenue (abattoir gate)	$/year		$17,699,926	$16,034,933	$28,439,881	$19,514,918	$26,019,891	$35,549,851	$21,329,911	$32,524,864	$28,439,881	$35,549,851
Less freight penalty	$/kg	$0.17	$2,276,987	$2,060,838	$3,656,378	$2,509,635	$3,346,180	$4,570,473	$2,742,284	$4,182,725	$3,656,378	$4,570,473
Cash surplus/loss	$		$1,144,589	-$3,452,505	$3,890,703	-$3,741,517	$1,429,911	$9,908,578	-$2,310,173	$7,617,338	$4,231,703	$10,437,578
	%		8%	-20%	19%	-18%	7%	47%	-11%	37%	21%	51%

Table 16 below offers high and low staffing estimates for the proposed plant. For the purposes of cost modelling, a mid-range figure has been used.

Table 16 - Labour cost breakdown

Activity	*Staff No*	
Single shift, 5 days/week	Minimum	Maximum
SLAUGHTER		
Slaughtermen	17	23
Follow-On Labour	17	23
Associated Slaughter		
Offal & Tripe	7	7
Yards	2	2
Carcass / Hides / Hooks	5	5
Render	5	5
SLAUGHTER FLOOR TOTAL	53	65
BONING		
Boners	17	23
Slicers	22	29
Packers / Scales	16	22
Chiller / Freezer / Packing / Loadout	4	4
Container & Truck Loadout	10	10
BONING TOTAL	69	88
ENGINEERING		
Engineering / Refrigeration / Services	10	10
SITE ADMINISTRATION (5 day)		
Livestock buying	4	4
Manager	1	1
Foreman	5	5
QA Inspection	5	5
Sales / Transport	4	4
Other	6	6
Security / Medical	3	3
Admin. Sub-Total	28	28
ENG, ADMIN TOTAL	38	38
TOTAL STAFF	160	191
KILL / MAN / DAY	2.5	2.1
AQIS		
Inspectors / Vet	3	3

8.3 Comments and conclusions on the cost modelling exercise

This model is based on several assumptions regarding throughput and animal characteristics, as well as estimates of capital and operating cost elements. By nature it is more simplistic than the commercial experience of an operational business. However, it does serve to illustrate the kind of financial outcomes that might await the operator of a new processing business.

The figures show how strong annual profits could be generated where the steady supply of cattle and the sale of product match exactly the design and staffing capacity of the plant. This is reflected in Year 6, where 100,000 head are processed through a single shift operation in a year, for a substantial 'cash surplus' of 47%. The other years reflect different operating conditions, essentially via reduced days/week worked, and in some cases, a monthly closedown, resulting in lower annual throughput and sales revenue.

A freight penalty is attached to the sales revenues, reflecting the additional cost faced by a Kimberley-based operator, of transporting product to Fremantle for export (over the costs faced by a competing southern processor).

Results vary greatly from year to year, essentially as a function of throughput. Most cost items, including labour, are essentially fixed, or unavoidable in the face of seasonal downturns. Operators typically prefer to scale down production in terms of days/week, rather than shut down and lose valuable labour in the face of difficult conditions.

The theoretical costs calculated here are considered to be competitive with similar commercial results achieved elsewhere in Australia on anecdotal evidence, although this remains to be tested. A 1994 paper calculated best practice Australian processing cost at around $1.15/kg (Industry Commission, 1994).

Australian Meat processing is a difficult industry in which to generate reliable returns. The Western Australian industry suffers well documented disadvantages in relation to east coast industry, and some of these would be amplified in the Rangelands. Long term viability is likely to be achievable only if some 'safety net' provisions were in place to protect the operation against potential poor season brought about by drought or other climatic events, lack of producer loyalty in the face of improved live trade conditions, and fluctuations in foreign exchange.

This raises an array of structural and policy issues for government to consider in taking this assessment to the next stage.

Despite disparate stakeholder views, all available evidence suggests that a new abattoir should be built to slaughter a minimum 400 head per day, for greatest chance of commercial success.

Such a facility could be built in the Northern Rangelands for an estimated $33.85m excluding land acquisition and provision of services. A minimum of 160 staff would be needed to operate a facility processing 100,000 head per year.

Steady supply of cattle to utilise this capacity is the single most important factor in commercial feasibility of such a facility.

9. FINDINGS

Demonstrated need for a processing sector

- The high level of dependence on the Indonesian live export trade is a major business risk to beef producers in the Northern Rangelands.
- Current indications are that 350kg weight restrictions re-imposed by Indonesian live importers will remain in place for the foreseeable future. There will be an absence of sales options for cattle types excluded – cracker cows, pregnant females, heavy steers, shorthorn stock.
- A long term view of the Rangelands industry would incorporate the need to start planning for a processing option in preparation for future trends of this nature.
- Access to abattoir facilities and to a processing stream would be of significant benefit to the Rangelands beef industry, particularly producers in the most northerly areas. Producers in these areas suffer a significant financial disadvantage in using southern processors, due largely to live cattle freight costs.
- The relatively small size of the herd, and annual turnoff volumes, means that any new abattoir would need to command a large percentage of the live trade's current sales volume. An abattoir would not be able to survive on the live trade's 'discards' alone.

Separate regional approaches required

- The distance between the Kimberley and the Gascoyne regions is great. For the producers in different areas to gain access to a processing stream alternative, different regional strategies will be required. The greatest value in any abattoir option accrues to producers in the immediate region, and diminishes with the distance that needs to be covered by live animal transport.
- A West Kimberley abattoir would be of significant value to the Kimberley and Northern Pilbara regions, essentially adding a processing option not available at present. The likelihood that the Northern Territory will gain some processing capacity in the short to medium term, combined with other advantages means that the West Kimberley would be a better location than the East Kimberley.
- This means that a new facility would need to be developed for the region. Broome is the preferred location due to urban scale, access to road and sea freight advantages. Derby may be preferred as an industrial host, but would face disadvantages in attracting and retaining a supply of labour.
- A Gascoyne or Midwest regional abattoir would improve current returns over those from processing options currently available to Southern Rangelands, and Southern Pilbara producers. The need for this is less pressing than in the north. If an existing processing operation in the area can be extended to handle beef, this would be a better outcome than a new comprehensive abattoir.
- Existing abattoirs in the northern agricultural zone could be engaged in discussion regarding any interest in developing increased cattle slaughter capability. Government, however, should be mindful that this option could reduce the numbers of Rangelands cattle currently being processed in the south, which may affect profitability of some of these operators, and possibly hasten rationalisation of the domestic processing sector.
- Any new regionally significant facility should be built to best-practice standard, providing a comprehensive slaughter and boning service, and capable of processing a minimum 400 head per day. Investment in smaller facilities, or reducing the scope of services provided would reduce capital risk but increase unit costs and reduce the ability to generate genuine commercial returns on capital for the owners.

Agistment sector planning

- As a pre-requisite for any abattoir development, a Rangelands regional plan for the beef industry is required to stimulate the development of a backgrounding or agistment sector, particularly in the north.
- This will involve the development of a feed-on capability in coastal areas, probably based on irrigated pastures, hay production and/or other roughage sources. This would ameliorate the 12 month supply problem previously faced by processors in the dry tropics. This development would provide focus for producers, including indigenous managed properties.
- There is no need for this sector to be developed in a single zone or property adjacent to an abattoir. Individual lease holders should be encouraged to make investments of this nature in strategically suitable areas. Mining leases capitalizing on dewatering options would be a good source of this capability.
- Development of such a sector would be of great benefit to the industry whether or not a processing stream emerges, and should be pursued in any case.
- Preliminary efforts should be in this direction, focusing on identification of suitable areas under artesian water resources planning, easier irrigation and development approvals on pastoral leases, and development of commercial structures for the provision of agistment etc as part of a processing stream.
- This planning process would also incorporate an investigation into the ability of producers to engage in an ownership structure with the abattoir operators to ameliorate seasonal supply risk and compete effectively with live trade prices from time to time.
- DAFWA would be well placed to lead a multi-agency approach to the co-ordinated development of such a plan, in collaboration with the Western Australian Beef Industry Council.

Economic viability

- Despite current levels of commercial interest in small scale investments, a significant abattoir development would require some active assistance from state and regional levels of government, in order to guarantee achievement of high quality product for the longer term.
- In strictly commercial terms, it is unlikely that a new facility will be viable at any location in the subject area, as the returns on capital are unlikely to be high enough to warrant the risks involved (seasonality, competition with live trade, foreign exchange fluctuations etc).
- Under ideal climatic and trade conditions, modelling suggests a new operation could be competitive with existing processors and would be strongly profitable. In most realistic seasons, however, when throughput is variable, profitability is lower, and losses would be incurred in the weaker seasons. This annual variability poses the greatest risk to the consistent positive returns sought by investors.
- For this facility to operate cost-effectively, throughput equating to around 75% of the average Kimberley live trade would be needed. This obviously implies that the live trade would need to become a back-up option for the Kimberley for the processor to be viable. This may only become a practical reality if Indonesian import restrictions were to be combined with domestic policy and regulation seriously restricting the live trade.
- A new comprehensive facility would certainly require some assistance from government sources, particularly to ensure that it is built and managed to optimum standard. Any capital assistance might be sourced from any compensation packages potentially resulting from negotiations over local Kimberley energy developments. Other forms of assistance could be through increasing ease of permits and licences, subsidized indigenous labour schemes, and industry structural adjustment funding (i.e. addressing the ‘store trap’ issue).

- Most importantly, it would require some form of producer commitment to be integrated into its ownership and management structure.
- To generate real ongoing value for producers from a processing stream, a genuine competitive local market for slaughter cattle would be necessary. This could be achieved, for example, through a system whereby more than one processor operated separate boning rooms in a common facility, under a 'service kill' model. Existing facilities operated by the processor closer to end markets would then finish the products for sale.
- Any new facility should be operated and managed by an operator or operators with strong international market presence, and a proven ability to target growth markets.
- Freight cost differentials between potential new abattoirs and established competitors are encouragingly low, given the availability of road and sea backload freight capacity. Processed meat product can be freighted much more cheaply than live cattle.
- Labour is the greatest cost component, and the seasonal cost risk problems might be ameliorated under the terms of any indigenous labour assistance schemes.
- Unpredictable supply problems would be further ameliorated if the agistment sector can be developed, and producer buy-in to the processing stream can be harnessed under a management model.
- Government assistance would be less significant and necessary for an existing operator seeking to offer a cattle slaughter service. It would be inappropriate for overt assistance to such a processor, where this might have a detrimental effect on the viability of other existing processors. Any assistance granted could be negotiated through normal state and regional development channels.
- The concept of seasonal processing of camels and goats has some merit, but should not distract from the fundamental need to establish fodder and agistment industries to support year round availability of stock for a beef processing facility.
- Mobile abattoirs would not appear to offer significant benefits to the industry in the long term and it is difficult to see how government could sponsor this form of processing in any substantial way. Entrepreneurial activity of this nature, however, could be a useful interim step towards the development of a processing alternative for the region.

10. RECOMMENDATIONS

In view of the growing risks to the viability of the live trade for many producers, the state Government should continue to investigate options for stimulating commercial development of a processing stream for the Rangelands.

As part of a risk-mitigation approach to this issue, the following steps should be taken:

- the future of the live export trade in WA should be formally reviewed in view of emerging market issues and the regulatory environment;
- a location for a possible abattoir in the area between Broome and Roebuck Junction should be researched in detail;
- identify the steps necessary to reduce impediments to the development of irrigation capability in key districts so that an agistment sector can be allowed to develop and flourish;
- existing major regional and national processor companies should be formally approached to consider commercial options for developing and operating such a facility, including the multi-operator 'service kill' and other models;
- estimate the 'commercial gap' between likely development and operating costs, and model financial viability in greater detail;
- determine the nature of any in-principle support that could be offered by the state to provide incentive to invest in processing (eg provision of land and headworks, low-interest loans, risk-sharing mechanisms etc)
- engage with producer organisations to determine the commercial structures necessary to give processing a dominant marketing position in the region

The state government should open discussions with existing WA abattoir operators seeking to expand their capability to offer services to the Rangelands beef industry. Types of assistance to be considered could include various forms of risk underwriting and a 'one-stop shop' approach to permits and approvals.

The Department (DAFWA) should initiate a multi-agency approach to the structural reform of the Rangelands beef industry and seek to incorporate a Northern Territory government response to the issues affecting the entire northern cattle production region.

A joint government industry Rangelands Cattle Industry Working Group (potentially established through the WA Beef Council) should address structural reform issues including the active development of agistment and fodder production industries to underpin improved productivity of the industry and any processing capability.

Working Group participants could include:

- State Government (DAFWA, Regional Development, Pastoral Lands Board)
- Commonwealth Government (RIRDC, DAFF, DFAT)
- Northern Territory Government
- Pastoral producers representation
- Indigenous development representation
- Mining industry representation

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Feasibility of Establishing a Northern Western Australian Beef Abattoir

by Robert Rouda

Publication No. 10/214

This study has been commissioned by the Department of Food and Agriculture (WA) and the Rural Industries Research and Development Corporation (RIRDC) to undertake a preliminary investigation of the need for a beef processing capability to service the WA Rangelands cattle production industry.

Since the closure of many smaller regional abattoirs since 1990 and the rise of the live export trade, there are few options for northern region producers to access a processing option for their product. The rise of Indonesia as the dominant market for northern Australian live exports (90%), exposure to the import policies of that country is of increasing concern to the industry.

This study examines, at pre-feasibility level, the potential viability of an abattoir (or abattoirs), particularly from a physical supply chain perspective. It includes a capital cost estimate for a new facility, and recommendations as to the best location for an abattoir to provide maximum benefit to the greatest number of producers.

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