

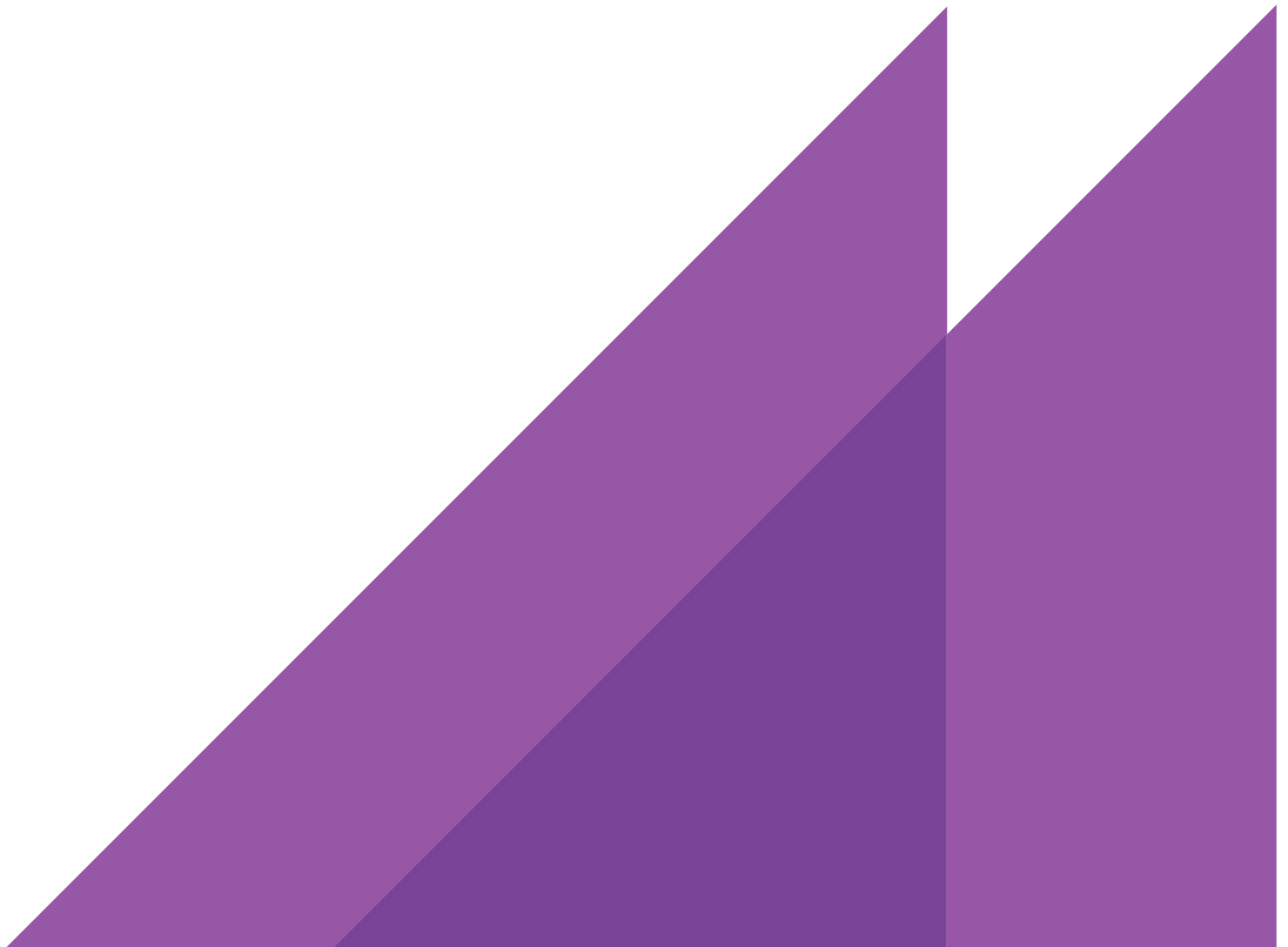
REPORT TO
DEPARTMENT OF PRIMARY INDUSTRIES AND REGIONAL
DEVELOPMENT

JULY 2018

JOINING THE DOTS



ON TEN KEY NORTHERN
BEEF FUTURES
INFORMING STUDIES



INTRODUCTION

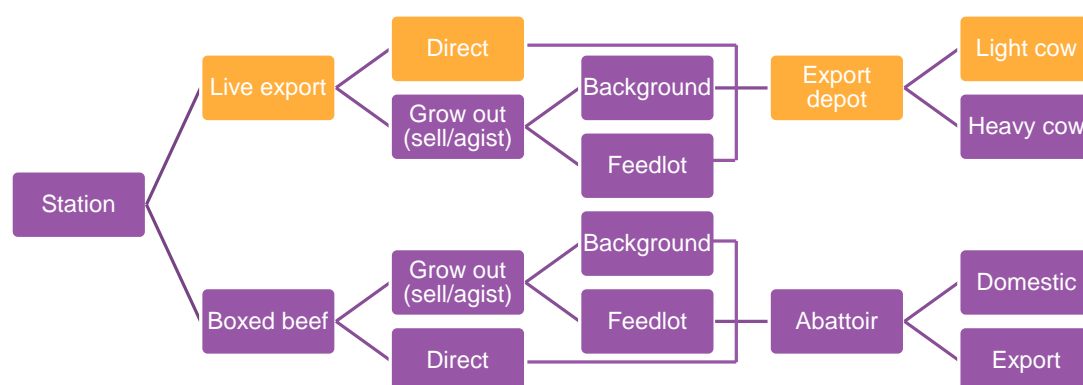
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1.1 The northern beef industry

The northern beef industry turns off 250,000-320,000 cattle per year from 150 pastoral stations in the Kimberley and Pilbara regions. Over half (180,000 cattle) enter the live export market. A further 44,000 are slaughtered domestically and the remainder travel to other properties outside the region for backgrounding.

The strong live export focus, particularly to Indonesia, means the northern beef industry does not realise the full potential available from boxed beef and other live export markets (**Figure 1.1**). The industry is also highly reliant on the Indonesian market which has both price and volume volatility risks.

FIGURE 1.1 NORTHERN BEEF SUPPLY CHAIN



SOURCE: ACIL ALLEN

1.2 The Northern Beef Futures Project

In 2014 the Western Australian Government established the \$15 million Northern Beef Futures (NBF) project to accelerate development of the industry by:

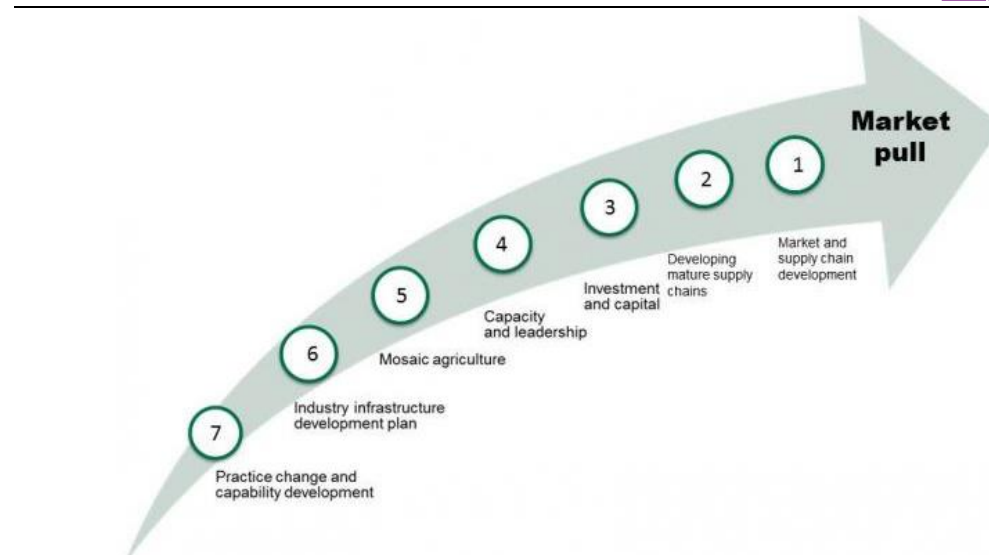
- increasing the value of Pilbara and Kimberley beef production
- establishing alternative economically viable export markets for beef and live cattle to reduce the risk of over reliance on current markets
- boosting employment in the northern cattle industry by increasing profitability.

The project was deliberately designed to be export supply chain-focused and market driven. The market driven approach was essential since unless alternatives are actively developed the tendency will be to sustain existing markets which do not realise the growth potential or risk mitigation available

from diversification. This export-supply chain focus was integral to the design given the whole of the industry will need to adapt over time to realise the benefits of the market driven approach.

The first phase of the NBF project implemented a suite of studies that systematically examined the whole of the industry to identify the constraints and opportunities to growth (**Figure 1.2**). The aim was to develop the knowledge base, relationships and shared understanding on which industry and government could individually and collaboratively develop northern beef in phase 2.

FIGURE 1.2 NORTHERN BEEF FUTURES PRIORITIES



SOURCE: NORTHERN BEEF FUTURES

1.3 What this report is about

This report summarises findings from 10 completed first phase studies which were selected to:

- outline constraints and opportunities at specific points in the supply chain identified by NBF
- “joining the dots” in terms of what the NBF findings mean across the whole northern beef industry.

TABLE 1.1 OVERVIEW OF SELECTED NORTHERN BEEF FUTURES INFORMING STUDIES

Study	Why it was chosen
Markets	New market development
Beef industry insights – capturing opportunities in Asian markets	Outline key Asian market opportunities/constraints
Australian Free Trade Agreements and opportunities for the WA beef industry	Outline specifications and potential market of FTAs
Profiling Chinese agribusiness (beef) investment in Australia	Investment mode and preferences of Chinese
New and innovative beef supply chain models in Thailand	Case study of is involved and potential benefits
Supply chain	Creating efficiency in the supply chain
Innovative business models for value creation in the WA beef sector	Alternative supply chain business models
Northern Beef Infrastructure Audit	Identify constraints and priority investments
Valuing security of supply	Potential of alternative value chains
Northern Beef Value Chain Trust and Collaboration	How the markets drives and impedes collaboration
Production	Examine ways to increase value of production
Beef Northern Rangelands Aggregated Feeding Facilities in WA	Potential for backgrounding and intensive feedbase
Business Improvement Grants	Pastoralists identify their own development priorities



MARKET FINDINGS

2

The Department has completed two NBF informing studies to profile the Asian market (DPIRD 2018a) and Free Trade Agreement (FTA) (DPIRD 2018b) opportunities for the northern beef industry. The studies found that Indonesia is the largest market for the northern beef industry and will continue to drive live export trade from Western Australia due to traceable supply chains, strong biosecurity, established relationships, growing demand and minimal tariffs.

Other live export markets, such as Vietnam and Malaysia, have similar requirements to Indonesia and also implement the Exporter Supply Chain Quality Assurance System (ESCAS). They complement and provide a buffer to Indonesian market volatility making them attractive to Western Australia. There are no tariffs for live cattle exports to Singapore, Thailand, Malaysia, Vietnam and China tariffs will be removed in 2019.

The other opportunity for the northern beef industry is to expand boxed beef exports which assist in reducing market/product risk through diversification and increasing profitability through value adding. Tariff elimination or reduction through FTA's will assist the northern beef industry to grow these markets. The studies identify South Korea, Indonesia and Japan as the greatest potential markets for boxed beef with Malaysia and Vietnam becoming more attractive following years of growth.

China is and will become increasingly important to the northern beef industry – both as a market for cattle and as an investor in the (Western) Australian beef industry. The VC Group was commissioned by NBF to profile Chinese beef investment in 2015 through case studies. A key conclusion, confirmed by other NBF and industry studies, is that the sheer scale of demand in China and elsewhere exceeds current supply. As a result Chinese investors are investing in the industry to both secure supply and increase current capacity which has increased asset prices. At the same time Chinese investors and the northern beef industry need to build the supply chains, including the various commercial and trade arrangements to meet demand at scale.

NBF examined the complexities and potential returns through a case study on establishing a new supply chain model in Thailand (AEC Group, 2016). The model involved exporting 96,000 live cattle annually to be backgrounded and processed in Thailand for their domestic and other Asian markets. This alone would represent 30 to 40 per cent of the northern beef industry's annual turn-off. The study found the model is potentially financially viable, but would involve considerable set-up beyond the direct costs to establish the various trade and phytosanitary arrangements. The presence of FMD in Thailand could also delay or prevent re-export to other markets.

Ultimately these informing studies highlight that:

- demand for live cattle and boxed beef is growing and is likely to remain strong in the future
- realising new opportunities will be at the expense of existing markets unless the northern beef industry dramatically increases supply and/or is coordinated with other sources
- these opportunities will involve considerable set-up costs to organise the new supply arrangements required.

To that end NBF commissioned a series of studies to understand what such changes might involve.

There are on-going export opportunities for northern beef live cattle and boxed beef in both existing and new markets

These opportunities will not be realised through a business as usual approach by the northern beef industry



SUPPLY CHAIN FINDINGS

3

Northern Beef Futures investigated what the opportunities and constraints were to supply chain integration in the northern beef industry through four informing studies;

- an infrastructure audit to identify physical supply chain constraints (ACIL Allen, 2016)
- an estimate of potential industry returns from pursuing higher value markets (PWC, 2016)
- potential models for industry collaboration to increase value creation (EY, 2016)
- analysis of the social and economic drivers of supply chain collaboration (ACIL Allen, 2017).

Infrastructure audit

The audit (ACIL Allen, 2016) generated two key insights which greatly assisted in prioritising future infrastructure investment between the farm gate and port/processor. The first was documenting the actual flow of cattle and the second that underutilisation was just as important as absent or poor condition assets.

Mapping of cattle flows in 2016 showed that the northern beef industry is a source rather than an accumulator of cattle with very few entering the Kimberley or Pilbara from the Northern Territory and the South West. In the Kimberley, cattle primarily move towards Broome for live export or to the Northern Territory for live export and slaughter. In the Pilbara cattle move both north (for live export through Broome) and south (to take advantage of backgrounding and domestic slaughter opportunities, or to use live export ports outside the region). This is consistent with the agro-ecological constraints of the region and the absence of an abattoir since 1985, until 2016/17 when the Colourstone abattoir near Broome opened. However, data suggests that this is changing with the closure of the AACo abattoir in Darwin with a potential increase in cattle flows from the Northern Territory back into WA.

Existing northern beef industry infrastructure can be better utilised through improved coordination

The northern beef industry has a surplus of port capacity as the industry has progressively concentrated live exports through Broome. Port Hedland and Wyndham operate below capacity even though they offer freight cost advantages. Port Hedland also offers some biosecurity advantages being outside the Bluetongue zone. Northern cattle are also exported through Darwin, Geraldton and Fremantle where they can take advantage of backgrounding opportunities close to those ports. Many of the infrastructure constraints around the ports are driven by poor coordination. The audit was pivotal in improving coordination and live exports from Port Hedland and Wyndham have now increased. The audit also identified holding yards and wash-down facilities in the region will need to be improved over time to meet market requirements. Studies have been commissioned to identify site, technical specifications and what commercial conditions are required. Added cattle loading infrastructure in Port Hedland will support any increase in live cattle shipments.

Priority projects for new infrastructure have been identified and will be developed over time as funds become available and demand increases

The audit also highlighted priority road improvement projects which have assisted in Western Australia securing \$43 million of additional road funding from the Commonwealth.

The slaughter market remains an important part of the supply chain for cattle from the regions. While many of these cattle enter the market through the saleyard system, a number of processors have entered into direct supply relationships with pastoralists, feedlotters and backgrounders. There are eleven licenced abattoirs in Western Australia that process beef with most of the capacity located in the South West region. Together, they have the capacity to slaughter around 432,000 cattle per annum. The majority of cattle from the Pilbara and Kimberley regions tend to be slaughtered in two of these abattoirs. The Colourstone Abattoir has a capacity of 70,000 cattle per year that it will source from the regions. The Livingstone Abattoir near Darwin has also processed cattle from the regions although has now been closed due to operating efficiencies and costs.

The Muchea Livestock Centre is the key saleyard for cattle from the Pilbara and Kimberley region. It has a capacity of 120,000 cattle per annum and a current throughput of just under 95,000 cattle per annum including around 30,000 cattle from the regions.

Valuing the security of supply

In 2016 NBF commissioned PWC to develop a value chain model for the WA beef industry. The model computes volumes, costs and activities at each stage of the supply chain to allow the industry impact of different scenarios to be tested, particularly in reducing price volatility.

The model showed that under three scenarios (improved coordination, forward boxed beef contracts to Japan and forward live cattle contracts to China) the industry can reduce price volatility, increase cattle turn-off, and increase revenue and profit by up to \$1.2 billion and \$0.5 billion respectively over ten to twelve years.

The study concluded there would need to be much higher levels of coordination by industry participants to establish these new market and forward contracting arrangements. Investment is required to expand cattle production and further develop backgrounding, feedlotting and processing facilities. There would also be transitional issues in maintaining and then potentially reducing existing markets.

Potential supply chain collaboration models

To further develop what collaborative arrangements could be established to realise the potential of the industry, NBF commissioned EY to identify alternative global agri-food industry growth models and value chain initiatives based on evaluating six case studies.

The study identified four critical success factors that must be present, irrespective of how any collaborative arrangement is structured. First, client facing (i.e. those who sell cattle in the destination market) players must take a lead role. Next, key stakeholders need to be aligned to the industry growth objectives and the strategy pursued must be determined by the supply chain structure and operations. Or to put it another way the industry must work together with what they have to create what they want to successfully collaborate across the supply chain. Finally this requires a fact based understanding of the current state of industry performance.

Four models were identified and are discussed in order of potential, based on ease of implementation and expected benefits.

Investment by end-customer supports productivity improvements from alignment of all members of the supply chain to meet mutual supply and commercial objectives. This will support productivity improvements and output performance.

Digital supply chain increases transparency and traceability, enhances communication, increases effectiveness and drives out inefficiencies. Technology will drive more direct supply chain models with real time performance improvement information to support productivity.

Producer collaboration stimulates the industry with greater negotiating power within the value chain and easier access to new markets which in turn leads to greater returns and risk management. Producers would work together to add and capture a greater proportion of the value in the beef supply chain by increasing their scale and market power.

Co-opetition information sharing creates growth potential by generating a fact base to monitor performance and by helping identify global competitive advantages. It will create greater information transparency amongst domestic processors / live cattle traders to support enhanced decision making in relation to cost efficiencies, capex investment and improved international competitiveness.

The northern beef industry can reduce price volatility and increase revenue and profit significantly through improved supply chain coordination to service higher value markets

Four alternatives drawn from other industries provide the foundations for improved fit for purpose collaboration in the northern beef industry.

Individual businesses are already implementing some of these models

Economic and social drivers of supply chain collaboration

The final informing study was an examination of what the economic and social drivers of supply chain collaboration are, completed by ACIL Allen in 2017.

The study notes the northern beef industry primarily operates as a spot market - where most cattle are sold on a seasonal and/or opportunistic basis – although some producers have direct off take arrangements, or are vertically integrated to some degree,. It is also important the northern beef industry is not a single discrete supply chain. Rather it is part of the broader beef industry where competing live export, backgrounding and processing supply chains compete to assimilate northern cattle into the northern Australian and the South West beef systems.

So while the northern beef industry spot market operates below its theoretical production and value, as illustrated by the Valuing Security of Supply Report (PWC, 2016), there are sound economic and social reasons as to why this is so and endures such as:

- *The spot market and strong live export markets in recent years inhibit development of new collaboration models across the whole of the northern beef industry*
- ability to **aggregate** sufficient cattle to meet specific markets (e.g. supplying 10,000 cattle per month would exceed the annual Pilbara turn-off and require coordinated supply between producers and the ability to hold cattle to deliver the required volumes on time each time)
- individual business **preference** based on their motivations, risk appetite, skills and capitalisation
- lack of **demonstrable/achievable alternatives** and previous individual/industry experience
- **strength of live export markets** where strong trading conditions limit commercial incentive to pursue higher value markets and reinforce business as usual
- to realise the benefits of collaboration, businesses involved need to **repeatedly transact and improve** based on addressing feedback to capture the potential value in the longer term.

The study also found that while the industry is justifiably proud of the intrinsic qualities of the cattle produced (e.g. rangeland beef from an iconic region) the value chain must first and foremost meet more fundamental market requirements to be successful. These requirements include consistency (limited variability in quality), reliability (delivering on time to specification) and volume.

Collaboration can create greater revenue and profitability – but it takes time and effort over many years to build the required trust and arrangements needed to realise these benefits and does not remove all the risks

The study analysed the potential of supply collaboration by modelling backgrounding of Pilbara cattle. The modelling showed collaboration can generate greater value and profitability for those involved. But this takes sustained effort over many years and if there is a shock such as sustained drought or poor market conditions collaboration won't necessarily outperform the status quo.

The study concluded that while there are significant potential benefits from improved supply chain collaboration there is no single optimal model that can readily or immediately be implemented across the northern beef industry. Rather it will be driven by the economic case for change for each potential collaboration and the individual commercial benefit for businesses involved (who may even then be constrained by personal circumstances).

This requires a situational approach of working with where businesses are at rather than moulding them to a pre-determined outcomes and needs to include:

- *Supply chain collaboration needs to evolve through real time trial and error to develop the optimal models that are fit for purpose in the northern beef industry*
- supporting establishment of industry led trials to capture greater value where collaboration is needed and progressively build the trust to support on-going and evolving cooperation
- developing national whole of industry approaches to address information asymmetries (e.g. objective measurement systems on animal performance and market conditions)
- using stage gate approaches (e.g. feasibility study, business case, investment attraction, implementation) to manage risk and obligation for both industry and government
- evaluating the commercial and sociological outcomes of each stage and disseminate findings
- promoting/providing capacity development for individuals.



PRODUCTION FINDINGS

4

48 producers have accessed business planning grants – creating the platform for individual action and improved development programs

Aggregation and backgrounding/feedlotting of cattle is essential to improving northern beef supply quality and volume to meet market demand and underpin growth

Commercial fundamentals determine whether this is best achieved through existing or new facilities in the north or south on a case by case basis

The final informing studies reviewed are business improvement grants to pastoralists and investigation of an aggregated feeding facility.

The aim of the grants is to enable commercial cattle producers in the Kimberley and Pilbara to take stock of their business and develop plans to enhance their competitiveness and growth prospects through professional advice and mentoring support. To date 48 producers have completed a business plan and more than two thirds have completed the first annual review of the plan. The plans also provide valuable information for NBF, MLA, KPCA and others to target extension services on the priorities in the plan.

A key constraint in the northern beef industry is the ability to provide fodder in the dry season so cattle can be finished in the north and the industry can buffer supply to meet demand/manage quarantine without needing to background in the south. There is considerable interest in developing irrigated fodder on pastoral leases using water from mines and other local sources.

The Department undertook a breakeven analysis of backgrounding facilities in the north based on different feed sources and costs. The study found:

- a live export prices of \$3.50 is required to make the modelled facility viable under current conditions
- producing lightweight weaners to 340kg between June and December from the facility would have taken advantage of the late season price differential in three of the past four years
- introducing higher energy and protein crops grown in the region are essential to reducing the feed breakeven point for the modelled facility
- backgrounding and/or feedlotting cattle in the Northern Agricultural region would achieve a substantial cost saving per head over the modelled facility due to the high cost of transporting feed.

In summary the study shows that while establishing an aggregated feeding facility is technically feasible the viability needs to be determined on a case by case basis.

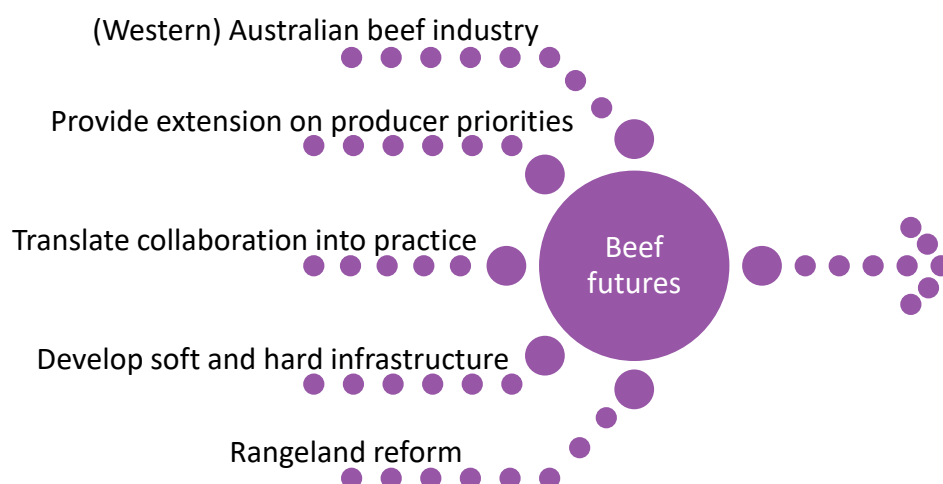
JOINING THE DOTS

5

Since 2014 the northern beef industry has continued to develop in response to market conditions and in line with the key concepts underpinning the original Northern Beef Futures project business case. The question of attribution and whether the project has made sufficient progress is moot. The opportunity lies in how industry and government can collaborate to further accelerate development of the industry.

To achieve this project, industry and government need to join the dots on five major themes arising from the informing studies (**Figure 5.1**) to align and redouble their efforts

FIGURE 5.1 JOINING THE DOTS



SOURCE: ACIL ALLEN

(Western) Australian rather than northern beef futures

The northern beef industry is an important but comparatively small industry that is part of the wider Western Australian and national beef system. Demand is greater than supply and is expected to remain so for the foreseeable future. This makes collaboration with the northern Australian and South West beef systems that assimilate northern cattle essential to developing the full potential of both the live export and boxed beef industries. Reconstituting beef industry development to a whole of WA focus will drive the integration and collaboration required and should be a significant focus for the new Department to realise greater innovation, investment and job creation. With the changes to the NBF project, there is now also a greater focus on broader northern integration of projects and collaboration with the northern beef industry.

Extension on northern producer priorities

Irrespective of the potential of greater supply chain collaboration there is much to be gained from providing extension to assist the 150 pastoral stations address their current development priorities. A third of the industry have identified their priorities and many of the larger and indigenous producers have established priorities through other means. These priorities along with the importance placed on northern beef development and extension by MLA and industry creates an ideal platform for an

industry-government partnership to provide targeted integrated extension services. Industry and government have now provided resources to address innovation and adoption across the industry.

Translate collaboration concepts into practice

The informing studies are very clear that unless new models of supply chain collaboration are developed the industry will not realise its potential.

Within this opportunity lies various challenges. The models identified are conceptual, not universally applicable, involve considerable effort and are not without risk – so they need to be translated into practice. At the same time industry is establishing new collaborations, with and without NBF involvement. The principle of many trials is a sound way to address a complex opportunity – but raises questions around participation and coordination.

In reality both government and industry need to be involved, and most importantly those who face the market, since that is what drives growth and alignment through the supply chain. To achieve this industry and government must work together to develop an agreed approach to:

- linking new investors to supply chain opportunities in Western Australia
- piloting more supply chain collaboration findings through a joint stage gate process and disseminating findings
- targeting specific supply chain constraints.

Develop soft and hard infrastructure

The infrastructure audit identified a suite of priority infrastructure projects in the resulting plan. These should be pursued and the plan updated every five years. On top of that the audit identified strengthening coordination (i.e. soft infrastructure) which are just as important in utilising existing and developing new assets (i.e. hard infrastructure). This must remain a focus for both industry and government underpinned by factual based evidence on industry trends and asset utilisation.

Pursue rangeland reform

Finally policy reform on developing the sustainable economic potential of the natural resource base and the important role indigenous pastoral stations is a key priority. This must extend beyond improving the efficiency of existing permitting processes to provide a platform for existing producers and new entrants to make the considerable investments required to develop the industry.



B I B L I O G R A P H Y

6

For this report, ACIL Allen relied on a number of studies and other information provided by NBF.

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