Conceptual supply chains for four scenarios

Project code: DAFWA 269 Innovative business models for value creation in the WA beef sector

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Date published: May 2016

Published by: EY
Department of Agriculture and Food, Western Australia

Innovative Business Models for Value Creation in the WA Beef Sector (Northern Beef Futures)

Conceptual Supply Chains for four scenarios
(Final Draft for Discussion)

13 May 2016

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Our draft report has been provided to the Department of Agriculture and Food WA pursuant to the terms of our Purchase Order number 404670, dated 27 November 2015. Our draft report has been provided for the sole purpose of confirming the factual accuracy of its contents and should not be used or relied on for any other purpose or distributed to any other party outside of the Department of Agriculture and Food WA without Ernst & Young's prior written consent. No representation, warranty or undertaking is accepted by Ernst & Young as to the adequacy, completeness or factual accuracy of the contents of our draft report. In addition, we disclaim all responsibility to any party for any loss or liability that any party may suffer or incur arising from or relating to or in any way connected with the contents of our draft report, the provision of our draft report to any party or the reliance upon our draft report by any party.

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Consultancy Services – DAFWA 269 Innovative Business Models for Value Creation in the WA Beef Sector (DRAFT)

In accordance with our Purchase Order number 404670, dated 27 November 2015, we have prepared this document in relation to four supply chain scenarios as part of the Innovative Business Models for Value Creation in the WA Beef Sector Project (the “Project”) being prepared for the Department of Agriculture and Food WA ("DAFWA", “you”, or “the Client”).

The purpose of this report is to share with the DAFWA’s Northern Beef Futures (NBF) team, a summary of four supply chain scenarios and associated funding models which were jointly identified with DAFWA.

This report was prepared on your instructions solely for the purpose of providing input into the Project and should not be relied upon for any other purpose. Because others may seek to use it for different purposes, this report should not be quoted, referred to or shown to any other parties unless so required by court order or a regulatory authority, without our prior consent in writing. In carrying out our work and preparing our report, we have worked solely on the instructions of DAFWA and for DAFWA’s purposes.

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Our work in connection with this assignment is of a different nature to that of an audit or a due diligence assignment. Our report to you is prepared on the basis of information from EY Agriculture SMEs, DAFWA and publicly available resources. We have not sought to verify the accuracy of the information or opinions provided by the SMEs.

Our work has been limited in scope and time and we stress that an extended consultation process may reveal views and opinions that this process has not.

It was agreed with DAFWA to consult with EY Agricultural SMEs as part of this process. As such, the consultation does not capture the views and opinions of all industry stakeholders.

The consultation process was conducted with the objective to obtain relevant information and opinions from SMEs. Information obtained during this process represents the comments and opinions of the respective participants at the date the consultation was undertaken. No warranty is provided on the validity of these comments or opinions in the future.

The information obtained does not represent the opinion of EY.

Yours sincerely

Greg Dobson
Partner
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Executive Summary

Northern Beef Futures (NBF) is a 4-year, $15M program to act as a catalyst to stimulate transformational change for the WA northern beef industry to capture growing export market opportunities, with a view to doubling the WA Beef industry value by 2025.

NBF funded this project to identify and share with the WA beef industry some alternative global agrifood industry growth models and value chain initiatives to improve international competitiveness.

As a result of six global case studies and interviews with agri-SMEs, the following critical success factors have been identified in achieving growth:

- Key client / market facing industry players took a lead role
- Key stakeholders were aligned to support industry growth objectives
- Strategy determined industry supply chain structure and operations
- A fact based understanding of current state industry performance was critical to future strategic direction
- A number of key emerging trends around technology, sustainability and producer-level innovations are increasingly growing in importance

As a result of these insights, the NBF team in consultation with EY has outlined the following four potential future WA beef sector supply chain scenarios to stimulate industry discussion and innovation towards capturing increased value from export market demand:

1. **Producer Collaboration**: A producer collaborative model will support greater negotiating power within the value chain and identify new markets, which will in turn lead 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. There could be a range of potential funding models - e.g. a procurement and sales model, models which do not involve upfront cash equity participation as well as individual and collective financing.

2. **Digital Supply Chain**: A digital supply chain for the WA beef cattle sector will increase transparency and traceability, enhancing communication, increasing effectiveness and driving out inefficiency. The enabling technology would drive more direct supply chain models with real time performance improvement information to support productivity. The initial component could be funded via a form of PPP to illustrate benefit, with the subsequent stages funded via the revenue realised by the initial stage and over time, a transaction and / or value fee could apply.

3. **Investment by End - Customer**: It will align end-customer / investor, abattoir and producer incentives to meet mutual supply and commercial objectives. The key design principle would be alignment of incentives and objectives between end-customer / investor, processor and producer group to support productivity improvements and output performance. There could be a range of potential funding models - e.g. a customer prepayment finance and / or a project finance model.

4. **Co-operation**: WA beef industry participants, closest to the end customer, would work collaboratively by sharing current industry information to generate a fact base of performance and identify areas of global competitive advantage. 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. A potential funding model would be the industry leaders providing funding via the industry association in line with their relative market size.

Supply chain leadership will be required to assess these global insights and to take a proactive role in owning and delivering on any prioritised initiatives for the sustainable benefit of the WA beef industry. It is recommended that supply chain participants and investors participate in co-ordinated industry workshops to agree prioritised initiatives to implement.
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As export demand for Australian beef grows, WA beef faces opportunities and challenges related to scale, supply chain and competitiveness

**NATIONAL CONTEXT AND OUTLOOK**

- ABARES and other independent industry sources are forecasting **strong export demand growth** for Australian beef over the longer term (out to 2050). A number of recent Free Trade and import protocol agreements are supporting greater trade market access and investment opportunities amongst key Asian trading partners.

- **Domestic beef production is forecast to decline** by 9% to 2.4 million tonnes (carcase weight) in 2015-16 following record production of 2.7 million tonnes in 2014-15.

- **Rebuilding the national cattle herd** is forecast to be a gradual process between 2015-16 and 2019-20. By the end of 2020-21, the national beef cattle herd is projected to reach 26.4 million head (in comparison to an average of 25.7 million head in the 5 years ending 2014-15).

- **Rebuilding the herd will impact domestic production**, which is forecast to decline in the short term. Average slaughter weights are expected to continue to increase (driven by relatively high feedlot turn-off) and lower female cattle slaughter. In 2020-21, beef production is forecast to reach 2.5 million tonnes, 8% above the average production of 2.3 million tonnes in the 5 years ending 2014-15.

- **Demand for Australian live cattle continues to be strong** and is forecast to increase annually by an average of 2% to reach close to 1.33 million by 2020-21.

**WA CONTEXT AND OBSERVATIONS**

- Although the WA beef industry has shown strong export value growth (driven largely by price increases) in recent years (2012-2015), the total herd and production volumes (with the exception of the live cattle trade) has remained relatively stable.

- The latest data available suggests the WA beef herd remains at approx. 2 million head, with approx. 1 million focused on the northern Rangelands region and 1 million focused on the southern Agricultural region.

- In 2014, WA produced approx. 305,000 cattle for live export and 106,000 tonnes carcase equivalent of processed beef (of which approx. 40% was exported and 60% consumed domestically).

- The industry has a strong provenance reputation for high quality, clean, green and safe produce. It also has significant export and investment growth opportunities given its close proximity to and relationships with key Asian trading partners.

- However, the WA beef industry also faces significant international competitiveness challenges - it remains scale challenged with limited vertical integration or transparency around industry performance from a whole of supply chain perspective (which makes identifying performance improvements and targeted investments more difficult to assess).
In this project, we studied six global case studies relevant to WA, gathered SME insights and outlined four high-level WA beef supply chain scenarios

CONTEXT AND BACKGROUND

- Northern Beef Futures (NBF) is a 4-year, $15M program to act as a catalyst to stimulate transformational change for the WA northern beef industry to capture growing export market opportunities, with a view to doubling the WA Beef industry value by 2025
- A key objective of this project is to identify lessons learnt from other national and international agrifood growth sectors to provide confidence and encourage the northern WA beef industry to grow, increase productivity and target new markets
- The purpose of this project is to identify and outline high-level WA beef supply chain scenarios for supply chain and investor consideration
- In line with our collaborative approach outlined in the project blueprint, we have submitted the following deliverables so far:
  - Summary current state assessment (as outlined in the Project Blue Print)\(^1\)
  - 6 Case Studies on the basis of an agreed selection criteria (as outlined in Appendices)
    - New Zealand Wine
    - Brazil Beef
    - Tasmanian Dairy Products
    - WA Grains
    - Queensland Beef
    - Ireland Dairy
- EY SME Panel insights on investments, finance and technology (as outlined in Appendices)
- The following 4 scenarios are outlined and detailed in the following slides
  - Producer Collaboration
  - Digital Supply Chain
  - Investment by End - Customer
  - Co-opetition
- It is envisaged that supply chain participants and investors may wish to develop some of these scenarios further and test their pre-feasibility, based on their potential to deliver value. Please note that these scenarios are not exhaustive and should not limit or preclude other models, not mentioned here, from consideration. EY does not have a preference for any specific scenario.

\(^1\) The project blueprint defines the project at a detailed level to form the basis for the project’s effective management
We evaluated six case studies across five dimensions to identify the critical success factors for growth

From case studies...

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Market Led growth</th>
<th>Innovative models</th>
<th>Risk management</th>
<th>Relevance</th>
<th>Future orientation</th>
<th>Critical Success Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand Wine</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Overseas investment promotion; factual baseline; global brand power &amp; industry - Government partnership</td>
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<tr>
<td>Brazil Beef</td>
<td>●</td>
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<td>●</td>
<td>Low-cost production base; Government support for domestic consolidation and growth of global Brazilian companies</td>
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<tr>
<td>Tasmanian Dairy Products</td>
<td>●</td>
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<td>●</td>
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<td>●</td>
<td>Co-operative structure; forward integration; strategic market facing partner</td>
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<td>WA Grains</td>
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<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Deregulation; Grain marketing, industry and government supported strategy; Increased information transparency</td>
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<tr>
<td>Queensland Beef</td>
<td>●</td>
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<td>●</td>
<td>●</td>
<td>●</td>
<td>Export - led growth; consolidation; vertical integration and foreign investment</td>
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<td>Ireland Dairy</td>
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<td>Factual baseline; collaborative growth model based on value add product / market development</td>
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... to actionable insights

1. Key client / market facing industry players took a lead role
2. Key stakeholders were aligned to support industry growth objectives
3. Strategy determined industry supply chain structure and operations
4. A fact based understanding of current state industry performance was critical to future strategic direction
5. A number of key trends are emerging around technology, sustainability and producer-level innovations
We also consulted with EY agriculture SME panel to gather insights related to investor perspective, supply chain and potential learnings from mining.

**Investor Insight**

- Trade investors are seeking mature well run operations to invest in - identify likely investment parties will allow for targeted investment assistance.
- Most investors are seeking to invest with experienced local partners to manage the investment risks - understand the local talent capabilities and supporting ongoing industry training development is critical.
- A clear track record of business and production success is critical in establishing trust between investment partners - utilise data analytics to demonstrate ongoing production performance across a key metrics.
- Uncertainty around land tenure can be a significant drawback to some potential investors - work within government to streamline and simplify tenure options.
- Current partnerships / ventures will be viewed as bellwether for future WA investment - target assistance to benefit ongoing investment, promote successful case studies as a proven investment model.

**Supply Chain Insight**

- Maintaining quality, traceability and provenance throughout the supply chain (especially with live cattle exports) is critical to maintaining our premium product placement - opportunities to enhance in-market meat quality grading and food safety accreditation could be used to leverage further investment.
- e-Commerce / digital provides a significant opportunity for investment and improved information transparency across the supply chain - assisting participants through brand and market development could unlock new sources of trade and investment for the WA beef sector.
- Effective branding will be critical for successful market penetration and future investment - brand development supported by provenance would assist in market participants and raise the profile of the WA industry.
- There is increasing interest in direct supply chains between producers and customers however effective support channels need to be developed to facilitate digital supply chains - support for innovation in alternate supply chains can unlock new sources of investment.

**Mining Insight**

- Access to critical infrastructure was key to development success - identify critical common use infrastructure requirements that if established may leverage future investment.
- Experienced leadership talent with in-depth understanding of the industry is critical to ongoing development success - continue to strengthen relationships with key talent identified, provide targeted assistance where possible and actively support the promotion achievements of industry leaders and Ag careers.
- A clear understanding of current and potential customer requirements is crucial to developing vision for the industry and to realise potential opportunities - development of a clear vision for industry development would allow for investment/assistance to be targeted.
- Innovative production, market and supply chain solutions will be critical to realising the potential opportunities - deep customer insights is key to innovation in products and / or supply chains to unlock new sources of investment.
Based on these insights and discussions with DAFWA, we outlined four scenarios relating to Producer Collaboration, Digital Supply Chain...

**Producer Collaboration**

A producer collaborative model will support greater negotiating power within the value chain and identify new markets, which will in turn lead 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.
- Expected benefits would include enhanced negotiating power, greater information transparency / sharing, enhanced capability and leadership, adoption of new technologies to drive productivity, improved branding / value proposition, risk management and potentially higher price realisation.
- The likely challenges are getting sufficient participation and entrepreneurial leadership to reach critical mass, the “free rider” issue and an appropriate legal / funding model that drives value growth.
- There could be a range of potential funding models - e.g. a procurement and sales model, models which does not involve upfront cash equity participation as well as individual and collective financing.
- Key optionalities to add value include digital supply chain, forward integration, working collaboratively with backgrinders and offtake agreements with customers.

**Digital Supply Chain**

A digital supply chain for the WA beef cattle sector will increase transparency and traceability, enhancing communication, increasing effectiveness and driving out inefficiency.

- The enabling technology would drive more direct supply chain models with real time performance improvement information to support productivity.
- Supply and demand / ordering and settlement would be completed via an app or online portal accessible by all supply chain participants.
- Expected benefits include traceability and sustainability assurance, brand integrity, flexibility and information transparency to drive margin growth.
- The likely challenges are engaging a critical mass of supply chain participants, the upfront development cost, disruptive impact on existing supply chain players and cross-border regulatory and privacy issues.
- The initial component could be funded via a form of PPP to illustrate benefit, with the subsequent stages funded via the revenue realised by the initial stage and over time, a transaction and / or value fee could apply.
- Key optionalities to add value include producer aggregation (e.g. a co-operative structure) to reach adequate scale and more direct feedback between end customers and producers to drive value growth.


**3. Investment by End-Customer**

It will align end-customer / investor, abattoir and producer incentives to meet mutual supply and commercial objectives.

- The key design principle would be alignment of incentives and objectives between end-customer / investor, processor and producer group to support productivity improvements and output performance.
- Expected benefits would include committed offtake, increased business certainty / confidence and price realisation for producers, secure cattle supply for abattoirs and a value tailored product for end customers.
- The likely challenges are securing a large enough offtake volume at an acceptable price and over an attractive timeframe to build a longer term sustainable relationship versus parties' preference to maximise short term returns from spot market.
- There could be a range of potential funding models – e.g. a customer prepayment finance and / or a project finance model.
- Key optionalities include backward integration by end customer to have greater supply chain integration and innovative value incentive structures to link the farmer’s return with end market performance.

**4. Co-opetition**

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.

- WA beef industry participants, closest to the end customer, would work collaboratively by sharing current industry information in a confidential manner to generate a fact base of performance and identify areas of global competitive advantage.
- Expected benefits would include increased transparency leading to improved decision making, cost efficiencies, better investment confidence, collaborative use of spare capacity and alignment with customer demand.
- The likely challenges are getting the necessary industry leadership and government support and the potential approval issues from regulatory authorities such as the ACCC.
- A potential funding model would be the industry leaders providing funding via the industry association in line with their relative market size.
- Key optionalities include utilisation of digital supply chain technology to identify and allocate spare capacity (e.g. logistics / processing) amongst industry participants at agreed commercial terms.
A preliminary assessment of scenarios suggested Investment by End-Customer as the most attractive scenario (1/2)

Ease of implementation considers factors such as impact on industry, level of cultural change, regulation, risks, time to implement and other constraints.

Benefit is focussed on perceived quantitative and qualitative benefits such as improved outcomes, margin efficiencies, sustainability, process efficiency and greater coordination.

* The assessment of Ease of implementation and Benefit is based on discussions with DAFWA. Please see overleaf for details.
We recommend a detailed analysis of these scenarios for a rigorous, quantitative evaluation of benefits and challenges.
Given industry's key role in developing this further, we recommend a series of industry workshops to agree the priority initiatives to implement.

**Given the key role of industry in progressing the proposed scenarios...**

**Supply chain participants’ and investors’ role**
- Assess global insights and proposed supply chain scenarios for WA beef industry in the context of improving the industry's international competitiveness
- Consider priority initiative(s) to drive greater profitability and productivity within a segment (e.g. producers / processors / live trade) of / or on behalf of the entire WA beef industry value chain
- Identify and prioritise initiatives to take a lead role in progressing from initial scenario planning (as outlined in this report) to more detailed planning and execution

**DAFWA’s role**
- Continue to support and facilitate the sharing of resources and insights with industry, connectivity with international trade offices to support international trade and investment, linkages to markets and policy development

**... we propose a series of industry workshops to agree the priority initiatives / next steps**

**Proposed attendees**
- Key industry leaders or willing participants from various segments of the value chain (e.g. producers / processors / live trade)

**Proposed agenda**
- Discuss key global insights from other industry growth and funding models
- Discuss the four proposed WA beef industry supply chain scenarios
- Agree priority initiatives of interest to industry as a whole or to a specific value chain segment
- Identify industry capacity and capability to take a lead role in owning and delivering on the prioritised initiatives

**Proposed outputs**
- Supply chain participants and investors to agree implementation pathways
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**Description**

- The producers would work together to add and capture greater proportion of the value in the beef supply chain by establishing adequate scale and increasing their commercial power. The scale effect would increase the negotiating power of the producers in both their input (suppliers of irrigation, wire, water infrastructure, animal husbandry requirements etc. to producers) and output (processors, customers) market, and create greater market / client channel and value add (e.g. brand development) options.

- Besides increasing their negotiating strength, the producers can also act in a collaborative manner on other objectives. For example, New Zealand Wine Growers, regarded as one of the most cohesive and effective industry bodies in New Zealand has the twin purpose of (1) protecting the competitive position and (2) supporting the profitable growth of NZ wine, which it achieves through activities related to advocacy, research, marketing and sustainability.
Producer Collaboration (2/8)
A producer collaborative model will support greater negotiating power within the value chain and identify new markets, which will in turn lead to greater returns and risk management.

Description (contd.)

The producers can come together in a co-operative-inspired model (similar to the Tasmanian Dairy Products case study) with a strong, entrepreneurial leadership. In that instance, a large local dairy farmer (with committed supply from neighbouring farmers totalling 50 million litres of milk) set up a private company seeking a strategic investment partner to add value / process the milk into longer shelf life milk powder products and to share in the risk and returns. This created sufficient critical mass for the group to be taken seriously by investors and customers, and led to a successful agreement with Murray-Goulburn to build a milk processing facility that processed approx. 200 million litres of milk in 2015.

The producers can also come together in a looser form, similar to the NZ Wine group, where the producers collaboratively help informed, data-driven decision making by providing timely and relevant information based on internal benchmarking and analysis.

Expected Benefits

- Producers would get enhanced negotiating power with processors, shippers and customers
- Producers would have an enhanced ability to undertake performance improvement research and projects (such as genetics), which would have been less viable for a single producer
- There would be greater information sharing within producer groups, leading to improved knowledge and uptake of leading practice
- Producers could realise higher prices because of improved branding / product specification to and segmentation to end customer requirements

Likely Challenges

- It could be difficult to get sufficient participation from producers for a critical mass after which scale advantages can kick in (it is estimated that at least 10,000 heads would need to be aggregated to build sufficient scale\(^1\))
  - How would the “free rider issue” be addressed - will the efficient farmers be subsidising the more inefficient ones?
- Relationships with processors and customers who might be worse off, might be affected
- A legal / funding model that incentivises alignment with customer value and margin performance would need to be agreed

\(^1\) Based on discussions with DAFWA
A Participant Collaboration (procurement and sales) model requires funding for both the upfront and ongoing costs of the initiative. The diagram below outlines how these costs may be funded.

**Option 1: Procurement and Sales model**

- Initial funding to commence the initiative is raised through Participant equity and Government grants.
- A proportion (%) of the incremental revenues and cost savings achieved from the initiative/s to be paid by the Participants into a pool to assist funding ongoing costs.
Funding models (contd.)

Options which do not involve upfront cash equity participation by the Participants
- There are various mechanisms which may be utilised in lieu of upfront cash equity contribution by the Participants. This recognises that in many instances the Participants are asset rich but cashflow constrained when it comes to available equity for new initiatives.
- Below are two examples of an innovative inventory financing structure which may be applicable to the Producer(s).

Example 1: Raising indirect investment example - Cattle inventory financing (individual)

- Producer individually raises funding against the value of their livestock
- The bank lends to/buys from the Producer based on an agreed percentage of the market value of the livestock
- The Bank takes security over a pool of the Producer's livestock or their cattle is sold to the bank
- Producer receives funding which may be utilised for individual purposes and/or a collective initiative
- Benefits: simplified structure and implementation, time efficient
Producer Collaboration (5/8)
A producer collaborative model will support greater negotiating power within the value chain and identify new markets, which will in turn lead to greater returns and risk management.

Funding models (contd.)

Example 2: Raising indirect investment example - Cattle inventory financing (collective)

- A collective special purpose vehicle ("Cattle Co") is established by the Producers for the purpose of raising funding against the value of their livestock.
- The Producers provide a several guarantee to the Bank and the bank takes security over a pool of the Producers' livestock or their cattle is sold to the bank.
- The bank lends to/buys from Cattle Co based on an agreed percentage of the market value of the livestock.
- Cattle Co on-lends the funds to the Producers, who in turn utilise these funds as their cash equity contribution for the initiative (or invests directly in the Project / initiative).
- Benefits: economies of scale and reduction of execution costs, simplified process once established that can be offered to all Producers.

Other Participant non-cash equity contribution mechanisms can be structured based on feedback from the Participants and may include:

- Government/bank debt funding against a new livestock levy
- Pooled receivables financing
- Non-controlling minority Producer equity investments
- Others as identified
Producer Collaboration (6/8)
A producer collaborative model will support greater negotiating power within the value chain and identify new markets, which will in turn lead to greater returns and risk management.

Funding models (contd.)

Other options

► Stock & Co Example¹
  - The farmer finances an initial purchase of stock by buying in store stock and arranging for StockCo to pay the invoice in full. The farmer then farms the stock through to its maximum sale value and sells it. The farmer receives the sale value less the purchase price and finance cost.
  - The farmer receives additional cash flow by selling his unfinished stock to StockCo, receiving their current value now, in cash. The farmer then continues to farm the stock to its maximum sale value and then sells it. The farmer receives the sale value less the original cashflow payment and finance cost.

► Mort & Co Example²
  - Mort & Co offers to feedlot graziers’ store cattle under a retained ownership structure whereby Mort & Co finance the associated lot feeding costs for the entire feeding period, with the owner (grazier) receiving the net proceeds directly after the sale proceeds have been received.

² “Concepts for alternative investment & financing models to expand sheep production in WA” - DAFWA
Optionalities to add future value

► Producers could work in a collaborative manner with backgrounders, based on a share profit alliance\(^1\).

► Producers could agree internal quality performance parameters amongst themselves to potentially increase price. For instance, a producer group could choose to achieve organic certification, and seek a potential price premium. Three pastoral stations near Winning have now achieved certification and another is in the process of applying. And more than a quarter of enquiries to the National Association for Sustainable Agriculture Australia (NASAA) are estimated to be from WA cattle producers\(^2\). Australia’s organic industry is estimated to be worth $1.72 billion, up by 35% since 2012 and growing by over 15% each year\(^3\).

► Producers could work together to develop a brand for their product. For instance, the King Island Beef Producers Group has the vision to ensure that the King Island brand has the best brand image of all red meat products in Australia.

► Digital technology - A digital supply chain will increase transparency and traceability, enhancing communication, increasing effectiveness, driving out inefficiency and supporting better capex investment and performance improvement decision making

► Producers could enter into offtake agreements with customers to reduce risk

► Funding / incentive model could be developed over time more towards an output / client value and margin focus

► Government can play a role in providing co-funding on a PPP model. For instance, in Tasmania, the federal and Tasmanian governments are putting up some of the money for irrigation schemes, on the condition that farmers and other investors must first agree to meet at least two-thirds of the costs of each irrigation project before governments commit the rest.\(^4\)

Optionalities to add future value (contd...)

- To facilitate better North-South integration, investments in cross-breeding, pasture breeding and genetics could, over the longer term, lead to the development of more tailored cattle attributes for feedlots. Currently, the north to south movement is estimated to be approximately 100,000 heads per annum (2013 estimate)\(^1\)

- Over a longer term, producers could forward integrate into background / feed lotting /processing or direct supply to end customers to capture a greater portion of the value from the supply chain and exert greater control over the overall supply chain.

\(^1\) Based on discussions with DAFWA
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Beef Cattle Digital Supply Chain Enhancement (1/4)

A digital supply chain for the WA beef cattle sector will increase transparency and traceability, enhancing communication, increasing effectiveness and driving out inefficiency.

High - level map

Description

► Supply (stock nomination and herd assembly) and demand / ordering and settlement, and all other supply chain transactions would be completed via an app or online portal accessible by all supply chain participants.

► Leveraging existing RFID infrastructure, existing technology and correlated scales, farmers can track via an app the location and weight of their cattle throughout the supply chain using sensor technology, with participants being engaged on a performance basis, e.g. feedlots paid per kg of weight gained.
Beef Cattle Digital Supply Chain Enhancement (2/4)
A digital supply chain for the WA beef cattle sector will increase transparency and traceability, enhancing communication, increasing effectiveness and driving out inefficiency

Description (contd.)

► International and domestic consumers would use an app to access details about the product, farmer(s) and bio-quality standards and testing results, in real time

► A transport exchange could create live competitive tension within the trucking market driving cost efficiency (“Uber for trucking”)

► In two very early-stage digital supply chains in agriculture, (1) digitising a seafood supply chain has reduced the lag time in gaining certainty of catch volume by four weeks, increasing marketability and efficiency and (2) digitising a fresh produce supply chain has increased access to the market place driving both supply and demand.1

Expected Benefits

► Digital traceability would allow proof of provenance and subsequently enable the realisation of greater brand integrity and price premium for quality (Japan, Korea, China, Thailand etc.). This would also reduce the risk of counterfeits2

► A more direct end-to-end supply chain would be more simple and cost-efficient

► Transparency of the supply chain would allow inefficiencies and waste to be quickly identified and mitigated

Likely Challenges

► Primary Producers and other supply chain participants would need to be engaged

► There might be adverse response from disrupted stakeholders

► Cross border regulatory and privacy issues would need to be addressed

► A minimum scale would be required to be self-sustaining

1 Please see Appendix “Digital Supply Chains in Agriculture” for details; 2 Examples: Beston Global Foods has developed a food traceability map to combat counterfeits. Similarly, the Authenticiteit Smartphone application helps customers check the authenticity of products
**Beef Cattle Digital Supply Chain Enhancement (3/4)**

A digital supply chain for the WA beef cattle sector will increase transparency and traceability, enhancing communication, increasing effectiveness and driving out inefficiency.

<table>
<thead>
<tr>
<th>Expected Benefits (Contd.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>► Mutually beneficial long-term supply arrangements between all supply chain participants would provide confidence for capital investment and therefore improvements in efficiency</td>
</tr>
<tr>
<td>► Guaranteed off-take of livestock would provide long term stability for sustainable businesses and investment confidence</td>
</tr>
<tr>
<td>► Rationalisation of logistics would drive cost savings for the primary producers (trucking and shipping)</td>
</tr>
<tr>
<td>► Enhanced two-way communication along the supply chain would allow the Primary Producer to tailor the quality of their produce to meet the consumers’ exacting demands, this would increase demand for the product and potentially lead to a premium being paid</td>
</tr>
<tr>
<td>► Automation of transactions within the supply chain would drive cost savings and effectiveness</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Likely Challenges (Contd.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>► There would be up-front development costs, as there are no “off the shelf” solutions and a bespoke solution will be needed</td>
</tr>
</tbody>
</table>
Funding models

- Build of initial component of digital supply chain could be funded via a public private partnership (PPP) to illustrate benefit.

- The build of subsequent stages could be funded via the revenue realised by the initial stage.

- A fee charged per transaction, at either a per transaction rate or as a proportion of the transaction value.

Options to add future value

- The digital supply chain can be capitalised on as a platform for Primary Producers to form Cooperatives to reach adequate scale to fulfil large scale off take agreements both domestically and internationally. The digital supply chain would provide a high level of transparency to reduce risk, but also provide accessibility for small to medium Primary Producers.

- A digital supply chain could also be leveraged by importers of Australian beef to reduce costs and drive margin efficiencies within the supply chain. Increased communication via a digital supply chain would allow importers and consumers to provide feedback direct to the Primary Producer to refine the quality of their produce. This increased level of efficiency and communication would encourage the execution of long-term off take agreements and more customised outputs.

- A digital supply chain could be used synergistically with existing technology platforms such as AuctionsPlus.
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Investment by End-Customer (1/5)

It will align end-customer / investor, abattoir and producer incentives to meet mutual supply and commercial objectives.

Description

- The design principle would be alignment of incentives and objectives between end customer / investor, processor and producer group.

- A customer or customer-investor group can secure processed beef supply by entering into agreements with producers. It can also invest in the producers. This could be done as part of a longer term supply relationship agreement to provide longer term financial security to producers to expand their supply.

- As part of the investment, the customer may require the producer to make specific changes to their production methodology - such as genetics, pasture or feed management, carcass weight.
Description

- If the end customer / investor is primarily interested in Australian processed boxed beef, it can enter into a contract with abattoirs. Since security of cattle supply to achieve utilisation and yield efficiencies is critical for the abattoirs, the customer - as part of its agreements with producers - could also require the producers to deliver an agreed volume of cattle to the abattoir(s) at agreed specifications. This would reduce the supply risk for the abattoir(s) and act as a risk mitigation strategy.

- If one customer / processor or producer does not have sufficient scale, a group could form to aggregate their supply and / or demand capacity

Expected Benefits

- A long-term partnership would typically provide greater value for all the involved parties

Producers

- Producers would get committed offtake, thus improving business certainty and potentially getting higher prices because of better alignment with customer preferences
- Producers would get access to capital to improve their performance

Abattoirs

- WA abattoirs would get secure, longer-term supply of cattle at agreed price and time, leading to their continued viability, improved workforce planning and associated positive effects for the local economy

Customers

- Customers can get security of supply and products tailored to their preferences to maximise value

Likely Challenges

- If the parties are not able to supply to the forward contract, there may be serious penalties
- Parties’ upside during a price boom would be limited due to reduced exposure to the spot market
- Customers’ offtake volume / value and timing incentives need to be significant enough for the producer or the abattoir to customise

1 Please see Appendix “Forward Contracts”
Investment by End-Customer (3/5)
It will align end-customer / investor, abattoir and producer incentives to meet mutual supply and commercial objectives

Funding models

Option 1: Customer prepayment finance

- A customer prepayment finance model provides funding for the upfront costs of the initiative
- The below example outlines how the development of an expanded or a new abattoir and packaging facility to meet customer boxed beef requirements may be funded:
  - Participants and the customer enter into a single or multi-year contract for the purchase of a fixed volume of boxed beef
  - Customer makes an upfront prepayment in relation to future boxed beef delivery, thereby providing funds which can be utilised for the development (other bank debt or participant equity may be required)
  - Customer may secure long term boxed beef supply at an agreed discount to the market price which incorporates the cost of financing and a risk premium for accepting performance risk (improves access to bank funding)
  - Considerations:
    - Best suited to small to medium sized initiatives
    - Counterparty risk and appetite of customer to fund capital initiative
    - Smaller scale capital initiatives may minimise upfront participant equity requirement
    - Larger scale capital initiatives may increase participant equity contribution or require customers to take on longer term contracts (which may be beyond their risk appetite or result in higher risk premiums). Project finance structure is an alternative for larger scale projects
    - Off balance sheet financing.
Funding models (contd.)

Option 2: Project Finance model

- A project finance model provides funding for both the upfront and ongoing costs of the initiative.
- The below example outlines how the development of an expanded or a new abattoir and packaging facility to meet customer boxed beef requirements may be funded:

- Project finance incorporates the establishment of a special purpose vehicle (“ProjectCo”) by the Participants which will raise debt and equity to fund the development of the capital intensive facilities which support farm productivity improvements / higher margin returns.

- The debt and equity used to finance the project are paid back from the cashflows generated by the project.

- Comprehensive contractual arrangements are entered into with various parties (e.g. supply, offtake, construction and equipment procurement, operations, insurance, permits and licences) to allocate risks and responsibilities to third parties and support a defined, long term, stable cash flow profile.

- Considerations:
  - Best suited to large capital initiative projects noting comprehensive transaction structuring and due diligence (timing and cost) is required in order to secure funding.
  - The structure supports forming a consortium / joint venture.
  - Facilitate risk sharing - producers not always well suited to deal with all project risks.
  - Availability of development finance from banks and other sources.
  - Upfront capital expenditure repaid over time.
  - Off balance sheet financing.
  - Limited recourse structure insulates corporate assets of Participants.
  - Flexibility noting ability to divest given standalone legal and financial structure.
Optionalities to add future value

- The customer and/or investors can potentially backward integrate to exert greater control over the supply chain.

- To better satisfy customer requirements, the producers may consider setting up facilities outside Australia in the customer country. For instance, DAFWA has recently completed a pre-feasibility study\(^1\) into a range of potential new supply chain options exist through Thailand, including:
  - Live export of feeder cattle with fattening and processing occurring in Thailand.
  - Live export of slaughter cattle with processing occurring in Thailand.
  - Preliminary processing (e.g. carcass quarters/halves) in Australia with further processing in Thailand.
  - Export of deboned beef from Australia.
  - Processed food market (e.g. canned, dehydrated, etc.).

- To attract investments, products such as peril insurance could be considered. To reduce premiums, diversification by geography (north and south) and careful selection of the insured producers would assist in risk management.

- To align the value received by the farmer to the price paid by the end-customer, innovative pricing structures, as in the Irish dairy case study, could be developed, such as linkages to a market index or basket of key product prices, a fixed base and variable bonus.

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Co-opeitation model (1/4)
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

High-level map

Phase 1 - aggregated current WA Beef industry performance

- Key industry players...
  - ...agree to provide company data in agreed format
  - ...to generate a WA Beef industry fact base

Phase 2 - international competitiveness positioning

- Selected KPIs from the fact base...
  - ...are compared with global leading practice
  - ...to identify areas of global competitive advantage and improvements for WA Beef

Description

- Similar to other agri industries (e.g. NZ wine and Ireland dairy case studies) with a high export focus (60% plus) - WA beef industry participants closest to the end customer could work collaboratively to drive greater international scale and competitiveness efficiencies with their supply chains

- A methodology (used in the Irish dairy example) to improve information transparency on current industry performance (without breaching individual confidentiality) was for an independent third party to act in a “black box” capacity to aggregate current individual financial, operational and market performance and to only report back key industry benchmarks at an aggregate level (to maintain individual company performance confidentiality)

- This approach involved active engagement with a CFO group to identify and collect consistent data in an agreed template and to “sense check” the aggregated findings prior to discussing with the CEO’s of key industry participants to discuss overall industry performance & future strategic direction
The independent third party signed individual confidentiality agreements with the participating industry participants confirming they would only release aggregated findings to protect individual confidentiality.

Once the relevant aggregated industry performance metrics were agreed, the industry group asked the independent provider to undertake a second phase, which involved benchmarking a select number of relevant metrics against a number of international peers to understand the industry’s underlying international competitiveness positioning and to highlight key performance strengths and improvement areas.

In the Irish dairy example, the industry proactively engaged with the relevant Competition Authority from the outset to underline the international competitiveness nature and focus of the study and outlined its approach in a transparent manner for approval.

Expected Benefits

- There would be increased transparency allowing for improved benchmarking, performance improvement and investment decision making to achieve more profitable growth (e.g. investment in higher margin / value add product / market capacity).

- Increased transparency can also support broader investment confidence from traditional debt / equity providers.

- There would be maximum collaborative use of profitable spare capacity and associated cost efficiencies (e.g. transport / processing synergies).

Likely Challenges

- Industry participants would need to see individual commercial benefits from the process to remain actively engaged and supportive.

- Primary Producers and other supply chain participants would need to be engaged.

- Potential regulatory approval issues from the Competition authority and related confidentiality issues would need to be managed.
Co-opetition model (3/4)
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

### Expected Benefits (contd.)

- It would lead to the Identification of individual performance gaps versus industry best practice / averages and ranges (WA and international context)

- Increased collaboration and innovation amongst participants would result because of the benchmarking process (leading to long term cultural change and focus shift from domestic to international competitiveness)

- Various longer term supply chain agreements would be developed, with producers driving greater alignment of supply with consumer demand

### Likely Challenges (contd.)

- The resources and timeframe required would need to be considered and agreed

- Strong industry leadership and support from the government would be required to make it happen

### Funding models

- In the case of the Irish dairy study, industry leaders provided funding via the dairy processing industry association and in line with their relative market size in terms of domestic processing and supply. Industry study costs were also supported by the Irish Dairy Board.

- Approx. Euro 2 billion has been invested by a variety of industry participants (pre and post farmgate) along with traditional equity / debt finance providers and state support agencies in expanding industry capacity since the benchmarking study was completed in 2011.

- The industry has increased its international competitiveness and grown total export value (as a result of shifts in its product / market mix and business models) by 60% between 2009/10 and 2014/15. The industry is projected to grow by a further 50-60% in the next 5 years as a result of deregulation of the EC dairy quota system from 2015 on.
Co-opetition model (4/4)
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

Options to add future value

► Consider development and utilisation of digital supply chain technology to identify and allocate spare capacity (e.g. logistics / processing) amongst industry participants at agreed commercial terms ($ per transaction) to ensure maximum efficiencies and utilisation of existing industry capacity
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Key client / market facing industry players took the lead role in driving broader industry growth with government playing an active support role. Typically, this leadership role was taken on by a number of the key industry players closer to the end customer in the value chain (such as large processors with international sales and marketing channels) working with industry association, producer groups and government to drive change and growth.

Key stakeholders were aligned to support industry growth objectives

Key industry leaders managed to align key stakeholders in support of industry growth objectives, communicating both the collective and individual benefits of stronger international competitiveness and growth, (e.g. increased economic diversification, revenue income and employment growth in regional and metro areas from support services for Government, which in turn led to increasingly supportive policies and measures in our case studies to support industry, co-op and company growth).

Strategy determined industry supply chain structure and operations

Domestic supply chain developments have tended historically to progress off the back of international competitiveness and growth strategies.

The primary focus was on how the industry can improve its international competitiveness to grow market share and away from domestic competition. This led to policy support for increased domestic collaboration, inbound investment and trade development (as in Ireland / NZ) or consolidation, direct financial investment and international expansion (as in Brazil) to support the international growth strategy.

The three international case studies have or are currently in the process of undergoing transformational change and a step change in growth, whereas our two domestic industry case studies have shown more incremental performance improvements to date.
We developed six global case studies and interviewed agri SMEs and heard a number of consistent messages throughout (2/2)

- A fact based understanding of current state industry performance was critical to future strategic direction.

- Increased information transparency / developing a factual baseline of current state performance is key to prioritising profitable industry growth and capex expansion priorities.

- Increased supply chain transparency can drive significant industry benefits, such as support increased performance improvement initiatives throughout the supply chain, focus on growing sustainable and profitable comparative advantages, increased domestic and inbound investment, consolidation / collaboration / restructuring policy decisions to drive scale and margin efficiencies (e.g. if enterprises / value chain segments are found to be unprofitable and uncompetitive), risk management and increased investment appetite from financiers.

- A number of key emerging trends around technology, sustainability and producer-level innovations were also highlighted.

   - (a) technology is seen as a major disruptor and significant opportunity in driving increased productivity growth and supply chain innovation. A number of interviewees forecast an increased trend towards more direct business to consumer channels for branded products (primarily in export markets) using digital supply chain and e-commerce platforms.

   - (b) sustainability is increasingly becoming a commercial imperative from a brand / risk management and supply chain integrity perspective (“increasingly you will be asked to prove your Green and Clean credentials”, e.g. Origin Green initiative with the Irish beef and dairy sector for industry credibility (e.g. used as a tool to support / protect against new market entrants such as Brazil beef) and to meet compliance requirements set by leading global procurement food and beverage companies (e.g. McDonalds stating it will move to start procuring sustainably sourced beef from 2016 on)

   - (c) producer-level innovations: Given the current demand and supply profile, producers are increasingly seeking to improve profitability using technology-enabled information transparency, data analytics, aggregation models (e.g. Tasmanian Dairy Products), forward integration and brands.
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Six Case Studies

Summary: New Zealand Wine | Brazil Beef |
Tasmanian Dairy Products | WA Grains | Queensland Beef |
Ireland Dairy
Learnings from six case studies: Key considerations for WA (1/3)

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Context</th>
<th>Key Success Factors</th>
<th>WA Discussion Points</th>
</tr>
</thead>
</table>
| **New Zealand Wine**                            | ▶ Over the last 40 years, the New Zealand wine industry has achieved transformational growth. | ▶ Government industry partnership with the New Zealand winegrowers’ association acting as the most explicit link between the industry and the state  
▶ Break-through export growth driven by brand power (supported by strong provenance / sustainability credentials) and global distribution channels: the international success of Marlborough Sauvignon Blanc as a “must have” wine  
▶ Overseas investment promoted by government (e.g. NZTE commissioned a fact-based overview of the wine industry, suitable for preliminary market due diligence to encourage inbound investment) leading to marketing know-how and global distribution power  
▶ Industry consolidation and rationalisation lead by large scale global participants  
▶ Early and ongoing state-backed research fuelling higher quality and innovation initiatives (e.g. introduction of the screw cap) | ▶ Industry led initiative to undertake a fact-based study of the WA beef supply chain to assess current financial and operational performance and market opportunities  
▶ Leverage WA Beef’s comparative advantages to build WA Beef’s brand power (supported by provenance and independently accredited sustainability programme)  
▶ Foster greater industry participation / leadership in industry strategy-setting  
▶ Attract domestic and overseas investors who bring strong international distribution channels, marketing and branding expertise |
| **Overseas investment; global brand power & industry - Government partnership** | ▶ Grape tonnage crushed has increased from 70k in 1990 to 269k in 2012  
▶ Exports have gone up from NZ$51M in 1960 to NZ$1.28B in 2012 |                                                                                      |                                                                                      |
| **Brazil Beef**                                  | ▶ Over the last 15 years, Brazil has emerged as the world’s leading beef exporter  
▶ Exports have increased from 741,000 tonnes in 2001 to 2,005,000 tonnes in 2015 | ▶ Government policy of economic liberalisation and support for domestic consolidation, awakening the competitiveness of the Brazilian beef industry and stimulating (domestic and export) demand for beef  
▶ Significant export and international scale expansion / competitiveness focus (led by leading processors such as JBS) based on a low-cost economies of scale production base and export market diversification  
▶ Investment in research & technology, increasing arable land / production volumes, sustainability and reducing the average time needed to slaughter  
▶ Growth of large scale Brazilian agri-business companies - supported by Brazilian Development bank (supported by government) - who are globally active and have large foreign investments | ▶ Support greater domestic consolidation / scale economies and international expansion / investment and export growth  
▶ Continue to support outbound investment (acquisitions / partnerships) into key export markets for WA-based enterprises  
▶ Invest in genetics / pasture management, water irrigation and land management infrastructure and logistics to improve production margin efficiencies  
▶ Support direct end to end customer / market relationships with producer groups using digital platform supply chain technology |
<p>| <strong>Low-cost production base; Government support for growth of global Brazilian companies</strong> |                                                                                      |                                                                                      |                                                                                      |</p>
<table>
<thead>
<tr>
<th>Case Study</th>
<th>Context</th>
<th>Key Success Factors</th>
<th>WA Discussion Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasmanian Dairy Products (TDP)</td>
<td>▶ TDP was established to facilitate the forward integration of a milk processing facility in Tasmania and the sale of manufactured dairy powders.</td>
<td>▶ A large local dairy farmer (with committed supply from neighbouring farmers totalling approx. 50 million litres of milk) set up a private company seeking a strategic investment partner to add value / process the milk into longer shelf life milk powder products and to share in the risk and returns. ▶ Tasmanian government provided feasibility grant to undertake independent cost/benefit economic assessment. ▶ This collective producer model and committed supply volume increased the groups negotiating power and interested Murray Goulburn to discuss setting up a partnership arrangement with them under a co-operative structure (MG also introduced a Japanese investor to provide a long term offtake agreement and financial investment). This set up helped to manage the project risk and encouraged the banks to provide debt finance support.</td>
<td>▶ Leverage collective strength of WA beef farmers by forming a co-operative model that can potentially extend into other parts of supply chain such as in backgounding/ feedlotting / abattoir and seek strategic partner (domestic and / or in a key export market) to add complementarity (e.g. technical / operational know how, long term offtake agreement or funding support).</td>
</tr>
<tr>
<td>WA Grains</td>
<td>▶ WA Grains was part of a regulated national industry with a “single desk” until 2008. ▶ Over the past decade (post deregulation), there has been approx. 20% increase in average WA grain production volumes (noting variability year to year), with typically exports accounting for 80% plus of grain production.</td>
<td>▶ Relatively modest volume growth achieved over the last 10 years ▶ Deregulation has lead to increase in new market entrants and competition, particularly in the trading and marketing side of the industry ▶ Evolution of grain marketing and increased participation by global grain traders in the WA grains export market, with development of new products and markets, which has provided greater range of risk management / hedging options for growers ▶ Increased investment in storage and handling and technology to improve information transparency of the supply chain ▶ Industry strategy to double value by 2025 recently published by the Grain Industry Association of Western Australia (GIWA)</td>
<td>▶ Consider working with key industry players (“coalition of the willing”) in the WA Beef sector to set up a forward contract / risk management mechanism tailored to providing mutually beneficial outcomes (for processor / live cattle traders and producers) ▶ Review specific WA beef sector infrastructure and logistics in terms of international competitiveness ▶ Leverage innovative technology to improve transparency and performance improvements in the supply chain.</td>
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### Queensland Beef

**Export - led growth; consolidation; vertical integration and foreign investment**

- Queensland beef production increased by approx. 16% between 2010 and 2014
- Beef and veal exports volumes have increased by 26% between 2010 and 2014
- Live cattle exports volumes have increased by 72%; however, it has been an uneven growth with significant market demand volatility
- Export market development and diversification - led growth on the back of high demand in key Asian markets (particularly for live cattle trade)
- Consolidation and vertical integration in the industry to build scale and capture greater value (Australian Country Choice and Acton Land and Cattle Company; MDH and Super Butcher)
- Recent interest from foreign investors, esp. from China with the goal to build more vertically integrated businesses to supply meat back to China as partially processed or as live cattle (e.g. Shandong Delisi Food Company’s investment in Bindaree Beef)
- Support producers in grouping together in collaborative structures seeking forward integration opportunities and matching with potential strategic partners from a long term offtake / financing or other support perspective
- Consider development of digital supply chain platform with increased performance management transparency to end market customer and socialise lessons learnt with broader industry / utilise data for commercial benchmarking / performance improvement opportunities

### Ireland Dairy

**Factual baseline; collaborative growth model on value add product / market development**

- Dairy industry exports increased by over 60% (in value terms) between 2009 and 2015 (with limited increase in overall production volumes due to EC quota limit)
- Production volumes set to increase by further 30-50% (post EC quota abolition) between 2015 and 2020
- Collaborative industry growth model focused on moving into higher value add / margin products (such as infant formula) and new markets (e.g. China is now the industry’s second largest export market after UK)
- Realisation of the need to improve the industry’s international competitiveness (85% of product is exported) - change of mindset from domestic to international competitiveness and growth and from a revenue to a margin focus
- Industry benchmarking allowed each individual enterprise to benchmark its own financial / operational performance against industry best practice (national and international) and formed the factual baseline for future capex investments and strategic growth
- New product / market development growth and margin synergy opportunities from increased collaborative initiatives and capacity investment expansion amongst processors / strategic partners and across the supply chain with producers
- Develop a factual baseline of current industry performance and key product / export market growth opportunities to support informed international growth strategy
- Use factual baseline to assess key investment / funding, margin and supply chain performance improvement initiatives
- Align key industry leaders around strategic growth objectives to increase industry collaboration / cohesion
- Introduction of tailored supply chain agreements with producers to help manage market price volatility
Six Case Studies

Summary | New Zealand Wine | Brazil Beef |
Tasmanian Dairy Products | WA Grains | Queensland Beef |
Ireland Dairy
New Zealand (NZ) Wine Industry - Macro picture
The New Zealand wine industry has achieved transformational growth over the last 40 years, driven by industry – government partnership, overseas investment and brand power.

Industry Performance: Key Drivers that led to growth

- **Government - Industry partnership**
  - Creation of the Wine Institute of New Zealand in 1975, with levy powers granted in 1976, represented a fusion of state-industry interests to grow the industry.
  - This led to the development of a concerted growth strategy for the sector (such as the 1981 - 86 Wine Industry Development plan).
  - There was public - sector led development and guidance around innovation and research (for instance, Plant Food Research).

- **Break-through export growth driven by brand power**
  - Exports have gone up from NZ$51M in 1960 to NZ$1.2bn in 2012.
  - International success to date has been built almost exclusively on Marlborough Sauvignon Blanc which has become a “must have” wine for major wine players.
  - 2014 New Zealand Winegrowers’ annual report reports that the Sauvignon Blanc varietal accounted for 72% of total harvest.

- **Overseas investment**
  - There was early investment from foreign companies such as Seagram’s investment in Montana, in the 60s and 70s and a later surge in the 90s.
  - Such investment brought with it new techniques, equipment and marketing knowledge as well as pressure to restructure the organisation of the industry.
  - The dominant wine companies in the development of the New Zealand industry, including Montana, Corbans, Nobilo and Selaks are now owned by large foreign multinationals.

- **Grape tonnage crushed 269k**
  - Growth Drivers

- **Grape tonnage crushed 70k**
  - Industry - Government partnership

Key Driver of Change

- **State** has played an important role; however, **industry** is the dominant partner and taken a lead role.
- **New Zealand Winegrowers** - the national association that represents large majority of wineries and grape growers - acts as the most explicit link between the industry and the state. It deals with an array of industry issues, from research, policy advocacy, collaboration initiatives, legal to marketing, including export promotion.

Government Support

- **State- backed research led the quality revolution in wine in the 1980s**

- **Research for the NZ industry is directed in close coordination with the public research institution, Plant & Food Research, run as an independent company and institute, which co-ordinates research contracts with universities. e.g. in 2010, NZ Winegrowers announced the renewal of a $12 mn, 6-year govt - funded research grant focused on Sauvignon Blanc.**

- **The Primary Growth Partnership (PGP) is a joint venture between government and industry, that invests in long-term innovation programmes to increase the market success of the primary industries. e.g. - investments in the growth of low-alcohol, lifestyle wines.**
New Zealand is increasing wine production long term primarily through increasing land usage.

There has been strong growth in winery numbers, however a process of industry rationalisation is ongoing.

5 out of the top 8 wine companies are under foreign ownership and foreign ownership controls ~40% of NZ wine production.

Potential investors have a number of pathways for market entry. Following are the common pathways with examples:

- **Investment Pathways**
- **Examples**
  - Organic Growth
    - Yalumba (Nautilius)
  - Take cornerstone holding in existing winery
    - E&J Gallo (Whitehaven)
  - Acquire one or more medium sized wineries and recapitalise
    - Foster’s Group (various)
  - Acquire existing large wineries
    - Constellation (BRL Hardy)
    - Pernod Richard (Allied Domecq / Montana)

---

### New Zealand Wine Industry - Micro picture

The NZ wine industry is characterised by an increase in the grape-growing land area, consolidation, foreign investment, global distribution and marketing.

- **Total Hectares in Grapes**
  - Hectares: 1981-2013
  - CAGR: 2% CAGR

- **Average Yield Tonnes per Hectare**
  - Tonnes/hectare: 1981-2013
  - CAGR: -0.3% CAGR

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<table>
<thead>
<tr>
<th>Grape Wine Sales of Company</th>
<th>Number</th>
<th>% total production</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 4 million litres</td>
<td>10</td>
<td>47%</td>
</tr>
<tr>
<td>Between 200k and 4 million litres</td>
<td>73</td>
<td>41.1%</td>
</tr>
<tr>
<td>Less than 200k litres</td>
<td>619</td>
<td>12.7%</td>
</tr>
</tbody>
</table>

However, a large group of successful medium sized NZ owned wineries are seen as the key force driving industry quality and innovation (e.g. light wine development).

The period has been marked by industry consolidation and rationalisation.

- Delegat, a major company, has acquired 5 farms and 2 companies over the last 6 years.
Since 2006, Delegat has invested significantly in expanding production, developing markets and its brand.

The Company has grown inorganically over the last six years as it acquired five farms and two companies over the period (2009-15).

In last decade the Group has build a strong distribution platform in New Zealand, Australia, Singapore, the UK, the US and Canada which has driven the long term sales growth over the period.

The Group's sales are well diversified by market with 38% in North America, 33% in the Australia, New Zealand and Asia Pacific region, and 29% in Europe including the United Kingdom.

Oyster Bay was named one of the world's most admired wine brands by Drinks International Magazine.
Sustainable winegrowing NZ (SWNZ)

- In 2007, NZ Winegrowers developed a new strategy, Sustainable Winegrowing New Zealand (SWNZ), to promote sustainable practices including independent environmental audits, throughout the industry.
- SWNZ programme is a proactive management system that enables winegrowers to produce high quality wine using environmentally responsible and economically viable methods.
- It includes an estimated 94% of New Zealand's producing vineyard area and responsible for about 90% of the wine produced. In addition, another 3-5% of vineyard area operates under other certified organic programmes.

Temperature Controlled Wine Maturing

- A Kiwi company, Wine Technology Marlborough has come up with a central remote control system, “VinWizard”, that allows temperature in wine tanks to be controlled automatically. Temperature control is a key part of the fermentation process, as it determines the quality of the wine.
- VinWizard reduces the labour and energy costs by up to 50%.

Use of Technology and Innovative Practices

- The Yealands Estate is New Zealand’s largest carbon zero winery. The winery claims to be two times more efficient in energy utilisation than the New Zealand wine industry standard.
- Technology used includes a vineyard and winery first, burning vine prunings to produce renewable energy. About 10% of prunings goes into energy production, the remainder are mulched back into the soil. The prunings annually eliminate over 100 tonnes of greenhouse emissions in the form of carbon dioxide. The ashes are returned to the vineyard as fertiliser.

Use of screw cap as wine seals

- Instead of using traditional corks, the winemakers in the country resorted to the use of screw cap as wine seals. The screw cap has various advantages including elimination of cork taint, convenient & user friendly packaging, elimination of random, premature wine oxidation and minimal bottle variations.
Six Case Studies

Summary | New Zealand Wine | Brazil Beef | Tasmanian Dairy Products | WA Grains | Queensland Beef | Ireland Dairy
Brazil Beef Industry - Macro picture
Brazil beef industry has transformed over the last 20 years on the back of high domestic demand and the international growth of Brazilian processors.

Company Performance: Key Drivers that led to growth

- **Growth-oriented government policies**
- **Export-focus based on competitive price**
- **Investment in Research & Technology**

**Growth Drivers**

- **Production 6.9 mn metric tonnes**
- **Exports 0.74 mn metric tonnes**
- **Production 9.9 mn metric tonnes**
- **Exports 1.9 mn metric tonnes**

**Conceptual & Not to Scale**

- **2001**
- **2014**

**Key Driver of Change**

- **While, initially, government policies played a key role, of late, industry has been playing the major role.**
- **The period after 2000 up to recently was characterised by a stable macro-economic environment and a reliance on market instruments to promote economic and agricultural growth.**

**Government Support**

- **In the 2000s, the Government adopted several programs which stimulated investment in the expansion of planted pasture. These programs involved the provision of credit at relatively low interest rate**
- **Recently, the government implemented the Low-Carbon Agriculture program which promotes the adoption of integrated crop-livestock systems, recovery of degraded pastures and support to expanding beef cattle feedlots**
- **BNDES helps Brazilian companies identify growth opportunities and offers financial support by lending directly to firms, guaranteeing loans that are processed through commercial banks or taking direct equity shares.**

- **Deregulation of agriculture market in late 90’s awakened the competitiveness of the Brazilian beef industry, diversifying and increasing its presence in the international market**
- **Domestic demand for beef was encouraged by economic growth and increased income of the local population in the 2000s**
- **Brazilian Development Bank (BNDES) has played a major role in promoting the internationalisation of Brazilian agribusiness through foreign direct investment**
- **Exports have increased significantly from 0.74 mn metric tonnes in 2001 to 1.9 mn metric tonnes in 2014**
- **The production costs of beef in Brazil are estimated to be 60% lower than in Australia and 50% lower than in the USA, which makes it highly competitive in the international market**
- **Production remains primarily based on pastures which represent the lowest cost food resource for ruminant feeding; however, feedlotting is increasing rapidly**
- **Producers have incorporated crossbreeding of Bos indicus and Bos Taurus cattle; progress in genetic and animal improvements has been observed through the use of evaluation programs and targeted mating systems**
- **Adoption of technologies that increase the number of calves produced per year and their bodyweight at weaning are mandatory in the cow – calf sector.**
- **There has been an increase in arable land and a reduction in the average time needed to raise an animal for slaughter**
Brazil Beef Industry - Micro picture
The industry is dominated by large, home-grown multi-nationals who have built global scale and reach with outward investments

### Key Players in the Industry

**JBS S.A.**

<table>
<thead>
<tr>
<th>Revenue (In R$M)</th>
<th>2004</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,158</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>EBITDA (In R$M)</th>
<th>2004</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>287</td>
<td></td>
<td></td>
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</tbody>
</table>

**Minerva S.A.**

<table>
<thead>
<tr>
<th>Revenue (In R$M)</th>
<th>2009</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,602</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Operating Profit (In R$M)</th>
<th>2009</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>144</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Brazilian beef landscape is characterised by a few very large agribusiness companies (such as JBS and Minerva) and a domestic producer base that remains largely fragmented.
- Several of Brazil’s largest companies, particularly JBS, Marfig and BRF, are globally active across the beef, poultry and pork segments and have become notable outward investors globally with substantial global sales.
- Operating outside of Brazil gives agribusiness firms significant locational advantages, including access to local markets for fresh meat products, presence in the U.S, the world’s largest meat market, and avoiding export restraints related to Foot and Mouth disease.
- The largest Brazilian companies have benefitted substantially from BNDES’s policies. As of October 2011, BNDES controlled 35.1%, 30.4% and 14.0% of shareholder equity in BRF, JBS and Marfig respectively.
- All of the top three companies combine beef, poultry and other protein businesses.
- The meat and poultry agribusiness sector has experienced extensive consolidation in recent years, allowing them to reap ownership benefits from growing economies of scale.
  - JBS, now the largest meat processing company in the world, has been on an inorganic mode of expansion and has acquired more than 50 companies in the last 10 years, which has driven revenues to increase significantly.
  - Minerva, another large company, has acquired more than 10 companies in the last 8 years.
- All of the top three companies combine beef, poultry and other protein businesses.
- In contrast, foreign players play a very small role in Brazil’s domestic beef sector.
Turning the Cerrado into an arable land:

- Brazil's Cerrado covers an area of 2 million square kilometers in the central region of the country, equivalent to approximately 22 percent of the country’s total area. It is the second largest biome in Brazil, surpassed only by the Amazon. Until the early 1970s, the area was used mainly for low productivity activities, such as extensive cattle ranching.

- By the 1970s, expanding agriculture toward the Cerrado became a natural option for southern farmers, given the viability, land prices, and its overall climate. The problem, however, was the soil, which was extremely poor in nutrients and high in acidity, both of which made it unfit for commercial agriculture. To reduce the soil's toxicity, Embrapa (an agricultural research organisation created in 1973 under Brazil’s Ministry of Agriculture) employed a technique called agricultural liming, a process in which industrial quantities of lime are poured onto the soil to reduce acidity levels. In 1990, between 14 million and 16 million metric tons of lime were spread on Brazilian fields.

- Embrapa also developed varieties of rhizobium, a bacterium that helps fix nitrogen in legumes (such as soy), specifically adapted to the Cerrado soil, thereby reducing the need for fertilizers. Embrapa cross-bred an African grass called brachiaria with a native Cerrado grass to engineer a variety that produced 20-25 tons of grass feed per hectare, many times the native grass yield and three times the yield in Africa.

- This allowed parts of the Cerrado to be transformed into high-yielding pasture, helping reduce the average time needed to raise an animal for slaughter from four years to 18-20 months, expanding Brazil’s beef herd and the international competitiveness of Brazilian beef exports.

**Agricultural Modernization and Natural Resource Conservation Program (MODERAGRO):** Involves the provision of credit at relatively low interest rates (compared to what was charged for other economic activities).

**MODERINFRA:** Allows producers to build or rebuild silos and warehouses on their farms and can also be used to modernize irrigation

**MODERFROTA:** Program aimed at the modernization of farm machinery

**Brazilian Roundtable on Sustainable Livestock (GTPS):** This group was founded in 2009 to promote good livestock production practices and comprises representatives from various sectors within Brazil’s cattle farming value chain

**Green Municipalities Program:** The program supports cities in Pará, a state in the Amazon region, to achieve common goals, such as reducing deforestation and registering rural properties in the Environmental Rural Register
Six Case Studies

Summary | New Zealand Wine | Brazil Beef |
---------|------------------|------------
Tasmanian Dairy Products | WA Grains | Queensland Beef |
Ireland Dairy
Tasmanian Dairy Products (TDP) - Macro picture

TDP was established to facilitate the forward integration of a milk processing facility in Tasmania and the sale of manufactured dairy powders.

Company Performance: Key Drivers that led to growth

- Farmer led conceptualisation and innovation
- Early support by a major co-op player
- Equity stake by a major foreign customer

Growth Drivers

- Farmer led conceptualisation and innovation
- Early support by a major co-op player
- Equity stake by a major foreign customer

TDP was formed by Little Lion Holdings (LLH), the principals and management of which had extensive background in dairy farming, commercial real estate development, project management, dairy processing, green field development and enterprise building. It had accumulated a portfolio of dairy farms in Circular Head and were pursuing additional opportunities to enhance the value of these farms.

- In FY 2012, Murray Goulburn Co-Operative (MG), one of Australia’s largest dairy co-operatives, took a majority share in TDP, as this aligned with its overall strategy to focus on improved returns for dairy farmer shareholders. MG agreed to market all the products from the new factory on behalf of TDP.
- Once MG came in, banks were more willing to fund TDP.
- Mitsubishi Corporation (MC) had built up a longstanding relationship of mutual trust with TDP’s major shareholder, MG, through many years of trading in dairy products and manufacturing joint ventures.
- In 2012, MC took a 24% share in TDP to build a strong dairy product supply chain from the perspective of securing food resources.

Key Driver of Change

- The change was primarily led by farmers and co-operatives, with some initial support from the government.

Government Support

- Government provided TDP with an initial grant to do an economic feasibility study.
### Setting up the plant and the corporate structure

<table>
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<tr>
<th>FY 2009 - 2012</th>
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- Little Lion Holdings (LLH) decided to set up a dairy processing plant to reduce the volatility in the price of milk and to improve returns by producing powder milk.
- It enabled supply and community buy in - via the issue of ordinary and preference shares. It looked at value add services post farm gate rather than continuing to exist in pre-farmgate land. The objective was to stimulate the industry as well as improve margins / protecting cash flows.
- MG was quick to show interest because of the alignment with the co-operative structure, offtake and easy integration into their operations, and its desire to grow supply in North West Tasmania.
- MG bought 80.1% of shares while 19.9% shares were held by large, individual dairy farmers located in Tasmania.
- Preference shares provided to farmers on the basis of performance.
- Subsequently, MC acquired a 24% stake in TDP.

### Operating the plant and refining the corporate structure

<table>
<thead>
<tr>
<th>FY 2013</th>
<th>FY 2014</th>
<th>FY 2015</th>
<th>FY 2016</th>
</tr>
</thead>
</table>

- Facility commissioned in September 2012.
- MG acquired a further 19.9% interest in TDP for $7.8M in cash consideration.
- Historically, TDP has been supplied milk directly by its own suppliers. From 1 July 2015, MG & MC have agreed that MG will supply milk to TDP. In light of the new arrangement, TDP suppliers were invited to join MG and enter into new milk supply agreements. 99% of TDP suppliers took up this option and are now MG supplier / shareholders.
- Murray Goulburn Co-operative paid $4.8 million to assume full ownership.

---

**TDP Share Capital (%)**

- **FY 2009 - 2012**
  - 80.1% MG
  - 19.9% MC
  - 56.1% Farmers

- **FY 2013**
  - 24% MG
  - 76% MC

- **FY 2014**
  - 24% MG
  - 76% MC

- **FY 2015**
  - 24% MG
  - 76% MC

- **FY 2016**
  - 100% MG

---

**Note:**

- **TDP Share Capital (%)**
  - MG
  - MC
  - Farmers

---

**Tasmanian Dairy Products (TDP) - Micro picture**

TDP had a co-operative flavour from its inception which was further strengthened with the Murray-Goulburn relationship.
Six Case Studies

Summary | New Zealand Wine | Brazil Beef |
Tasmanian Dairy Products | WA Grains | Queensland Beef |
Ireland Dairy
WA Grain Industry - Macro picture
WA Grain industry has seen ~20% growth over the last 10 years with deregulation having led to increased grain marketing offerings and more investment in infrastructure.

Key Driver of Change
- Reform was led by the Commonwealth government when it deregulated wheat exports in 2008, eliminating the AWB single desk’s monopoly and facilitating access to new exporters and markets.
- The WA Government deregulated exports of grains other than wheat (barley, lupins, canola and oats) in 2009.
- The Commonwealth government and ACCC\(^1\) led the changes to rail and port access.
- Local & international grain marketers led the development of the accumulation market and new export markets.

Government Support
- Following deregulation, the Commonwealth government's agencies have stepped back to more of a governance and accreditation role.
- The Commonwealth government and the ACCC enforce regulations to ensure access to rail and port infrastructure for all parties.
- The Commonwealth and WA governments also provide support through industry associations such as GIWA\(^2\), and AEGIC\(^3\), and research and development funding through GRDC\(^4\) and DAFWA.

\(^1\) Australian Competition & Consumer Commission; \(^2\) Grain Industry Association of Western Australia; \(^3\) Australian Export Grains Innovation Centre; \(^4\) Grains Research and Development Corporation
While CBH continues to dominate the industry, deregulation has created opportunities for new entrants who are investing in new capacity and producer offerings.

In WA, 90-95 percent of grain is handled by Cooperative Bulk Handling (CBH), an integrated grain storage, handling and marketing co-operative controlled by 4,200 grain grower entities. It operates a network of 195 receival locations across four harvest management zones - Albany, Esperance, Geraldton and Kwinana.

Despite de-regulation of the market, which ended CBH’s handling monopoly, CBH handled 15.9 million tonnes of grain in 2014 and was the single largest exporter of grains in Australia, handling 48 percent of WA bulk exports to over 30 markets worldwide.

Over the past eight years, CBH has gradually increased the volume of grain it has handled, helped in part by steadily growing harvest volumes. It has operated profitably in all but one year (due to drought), and has steadily driven down debt levels while improving equity for its owners. This has been done partly through judicial use of existing infrastructure, and capital investment, particularly in storage, rail transport where required.

Deregulation has created opportunities for more established global traders such as Glencore, Mitsui and Cargill to access the WA market along as well as facilitating the continued growth of local accumulators such as Plum Grove.

The increased competition in the market has helped facilitate the industry’s expansion. Growers now actively manage the marketing of their grain by utilising more sophisticated marketing and risk management options such as forward contracts, hedging and trading. These options have helped many in the industry reduce the risk associated with price variability and improve capital availability.

With the increased presence of global Agri firms new investment opportunities in WA are being identified. Bunge have established a new 43,800 tonne grain terminal in Bunbury capable of receiving up to 1000 tonnes of grain per hour and have established receival and storage facilities at Kukerin and Arthur River.

Geelong based Vicstock have plans to set up a similar facility in Albany, provide an outlet to grain grown in conjunction with Chinese investor HLA. This facility will also provide an alternative to CBH’s infrastructure for other growers.

Although at initial stages and scale, the investment in new storage, handling and shipping facilities provides some competitive pressure on the established supply chains whilst also possibly providing new opportunities for exports into smaller scale niche or specialised markets.
In a deregulated market, CBH have undertaken several measures to make better use of their infrastructure, and to retain the patronage of WA farmers.

- CBH Grain Express is a co-ordinated service provided to farmers delivering grain that allows delivery to any receival point without committing to a buyer. It then uses CBH’s rail fleet to deliver grain to one of CBH’s four grain terminals at Kwinana, Albany, Geraldton or Esperance. Farmers have the option of selling their grain virtually to a range of buyers at destination sites, allowing for flexibility and improving market access.

- Forward Integration - The CBH Group owns a 50% stake in Interflour which operates 7 flour mills in Indonesia, Vietnam, Malaysia and Turkey, including a grain port terminal in Vietnam and a mill under construction in the Philippines. This provides the CBH Group, and WA farmers with financial benefits through profit share and feedback from international customers directly to growers.

- Quality Optimisation (QO) is a system developed by CBH to allow growers to virtually blend their individual wheat loads, via CBH’s LoadNet® facility, allowing growers to maximize the value of their grain without having to blend on-farm. The benefit to growers from grade uplifts equated to at least $4 per tonne across the 2011-12 wheat crop.

- Grower Support is provided by CBH through a range of online and personalised programs including DailyGrain (a price discover and online grain marketing tool), LoadNet® (an online service to track deliveries and payments, write forward contracts and nominate grain) and CBH Mobile (a tool to provide growers access to load information)

- Grower Patronage Rebate Program includes a rebate from Operations, Marketing and Trading as well as an Investment Rebate, through returns from investment in Asian flour milling. The Operations Rebate provides growers a credit of $0.85 per tonne, the Investment Rebate $0.75 per tonne and the Marketing and Trading Rebate (formerly the Grower Loyalty Payment) $1.00 per tonne. These sums are used to offset receival fees on future deliveries to CBH.

- Pre-Pay Advantage is a CBH product that offers growers a pre-payment for any grain (from a minimum of 300 tonnes) that is committed to be delivered at harvest

- EyeFoss is a new image analysis grain assessment tool pilot-tested by CBH at selected sites during the 2013-14 harvest period. It has been designed specifically to remove subjectivity from wheat and barley visual quality assessments, inherent to existing visual checks performed manually. It reduces sampling speed down from 4.5 minutes to 3.5 minutes and thus, also improves throughput.
Six Case Studies

Summary | New Zealand Wine | Brazil Beef |
Tasmanian Dairy Products | WA Grains | Queensland Beef |
Ireland Dairy
Queensland Beef Industry - Macro picture

Industry has seen modest growth over the last 5 years, driven primarily by live cattle export and characterised by a trend towards domestic consolidation and vertical integration.

Industry Performance: Key Drivers that led to growth

- Beef and veal exports volumes have increased by 26% between 2010 and 2014
- Live cattle export volumes have increased by 72%; however, it has been an uneven growth with great variations due to market disruption
- Increase in live cattle exports are linked to recent increase in Asian demand. Cattle producers often compare the price live cattle exporters will offer for their animals to the prices domestic abattoir operators will pay to kill their cattle and send them overseas as boxed beef.

- To build scale and capture greater value in the supply chain, there is a trend towards consolidation and vertical integration
- Foreign investment is increasing, esp. from China to build vertically integrated businesses to supply meat back to China as partially processed or as live cattle.

Key Driver of Change

- There has been no significant technical improvement in industry over this period and there are concerns that the industry may not be able to meet demand because of capital constraints.

Government Support

- The Government has had a limited role to play in the industry of late.
- However, in the 1990s, the government supported the red meat processing industry. The Queensland Government provided funding to the commercial post farm gate processing sector to consolidate and rationalise operations and further develop value added activities. Also included was access to funds to ensure that ongoing operations were environmentally sustainable.
Increasing focus on vertical integration

- For AACO, the sale of live cattle to third-party producers and processors has been substantially reduced (down 54% compared to FY14) and, to the extent possible, diverted to support the growth in beef sales. While in the short term this has put pressure on the margins in the Grainfed business, it is in line with its long term vertical integration strategy.

More acquisitions to build scale

- In 2015, two of Queensland’s biggest names in beef joined forces in a bid to become more competitive and secure future cattle supply. Australian Country Choice (ACC) has bought a controlling share in the Acton Land and Cattle Company.
- In 2014, McDonald’s took 100pc ownership of Super Butcher retail business. McDonald’s MDH Pty. Ltd. is one of Australia’s largest privately held pastoral operations, running a herd of about 160,000 cattle across northern Queensland, supported by the Wallumba feedlot near Condamine on the western Darling Downs. Super Butcher is one of Australia’s largest privately owned meat retailers.
- One of China’s largest meat processors, Shandong Delisi Food Co took a significant strategic stake in leading Australian beef supplier, Bindaree Beef.

Interesting innovations being conceptualised and developed at the producer level

- Mort & Co offers to feedlot graziers’ store cattle under a retained ownership structure whereby Mort & Co finance the associated lot feeding costs for the entire feeding period, with the owner (grazier) receiving the net proceeds directly after the sale proceeds have been received.
- Allied Beef, an independent company, has an established procurement network across all cattle regions in Queensland (QLD) and New South Wales (NSW) ensuring timely purchases of cattle carefully selected to customer needs. Allied Beef does not have processing, lot feeding or saleyard interests, which ensures advice is not influenced by other company agendas.
Queensland Department of Agriculture and Fisheries (DAF) sent a trial shipment of frozen beef and lamb valued at approximately $3.5 million to Xiamen Seashine Group supermarkets, a major supermarket chain in China.

Grazing Best Management Practices program: An industry led, voluntary program to improve the long-term profitability of beef enterprises and reduce chemical and sediment load to the Great Barrier Reef. In the Burdekin catchment over the four years 2011-14, 272 unique beef businesses (42% of commercial beef properties) participated in program activities—representing over 6.2 million hectares of land (44% of the catchment) and over 850,000 head of cattle (54% of beef cattle within the catchment).
Six Case Studies

Summary | New Zealand Wine | Brazil Beef |
Tasmanian Dairy Products | WA Grains | Queensland Beef |
Ireland Dairy
Ireland Dairy Industry - Macro picture

Ireland Dairy underwent a significant transformation over the last 6 years, driven by a value add export strategy and investment in the supply chain.

Industry Performance: Key Drivers that led to growth

- Export 85% of dairy production - dairy products reported a CAGR of 8.1% over the last five years
- Targeted product / market development - specialised nutritional dairy powders grew 25% to reach Euro 1.15 bn in 2015, Ireland supplies 10% of global infant milk formula and serves 140 markets worldwide (UK is 1st and China is 2nd largest market for dairy products)
- Over Euro 2 bn in capex has been invested by producers and processors between 2011 and 2015 in Ireland and key overseas markets to build capacity and competitiveness to achieve industry expansion plans
- This investment follows a strategic review and international benchmarking of industry performance
- Ireland has attracted significant foreign direct investment from global players (Abbott, Danone, Pfizer), who are increasingly forming partnerships with Irish dairy companies / co-operatives
- Collaborative partnerships with local processors has lead to technology transfer and new capex / product development opportunities (e.g. Glanbia’s new Belview dairy ingredient processing facility)

Key Driver of Change

- There has been a move from a volume to a value added strategy supported by accredited sustainability and assurance branding schemes (Origin Green) / R&D focus on product / market development given lifting of EU volume restrictions
- Total production volumes have increased 10% since March 2015 with Food Harvest 2020 strategy projecting 30-50% production increase between 2015 and 2020
- Government has focussed on supporting domestic sectors with high growth potential and international comparative advantages (e.g. grass based dairy and beef production systems)

Government Support

- Government and industry agreed an ambitious cross sectoral national growth strategy from 2010 to 2020 (Food Harvest 2020) and recently agreed a successor strategy from 2015 to 2025 (Food Wise 2025)
- There has been significantly increased collaboration between the state, industry (domestic and international enterprises), and academic institutes on R&D projects and on public-private commercial initiatives
- Government has played an active role in provided a range of policy, trade access (e.g. recent beef access granted to US / China markets), financial and technical assistance from various agencies focused on industry growth and improving international competitiveness
Glanbia PLC and Co-op agreed to establish a JV in 2012 (60% owned by Co-op / 40% by PLC) to support achievement of varying strategic / funding objectives

The PLC has primarily focused on expanding via organic / inorganic growth its international higher margin value added dairy ingredients business / the JV is focused on expanding its domestic processing and supply chain capacity

Since 2012, Glanbia PLC has agreed a number of international acquisitions in dairy nutritional ingredients linked to health and wellness

The JV has focused on building its processing capacity in Ireland in milk powders and agreeing supplier / customer arrangements to manage expansion

Kerry PLC grew from a local Irish Dairy Co-op to become a leading global provider of food and beverage ingredients and technologies

It has expanded through a combination of organic / inorganic growth in domestic and international markets. In 2011 / 2013 Kerry Co-op reduced its shareholdings in Kerry PLC from 22.8% to 13.7%

It continues to invest in new product / market development and innovation (e.g. commissioned new infant formula plant in 2014 and launched a “Green Love” infant formula brand in China in a distribution agreement with Beingmate) and has exited its lower margin liquid milk business

For Glanbia, 2014 numbers are not directly comparable (are understated) to 2009 because of a demerger in 2011
## Ireland Dairy Industry - Micro picture
### Emerging innovation trends - examples of companies and organisations

<table>
<thead>
<tr>
<th>Key supports provided by Department of Agriculture Food and Marine (DFAM) and State Agencies</th>
<th>Other industry participant developments</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFAM</td>
<td>► Arising from the termination of Milk Quotas on 31/3/2015, all dairy co-ops / companies have introduced a variety of MSA's and Fixed Milk contract prices.</td>
</tr>
<tr>
<td>► Farmers Charter agreed with various farmer representative organisations, where all the key state and EU support services and schemes for the period (2014 - 2020) are summarised and maintained online at DAFM’s website: (<a href="http://agriculture.gov.ie/media/migration/publications/2015/SchemesServices20142020231215.pdf">http://agriculture.gov.ie/media/migration/publications/2015/SchemesServices20142020231215.pdf</a>)</td>
<td>► MSA terms and conditions vary significantly in relation to duration, break clause penalties, exclusivity, notice periods, financial / share investment requirements for additional processing capacity, volume supply limits (post quota) and seasonality schemes / bonuses.</td>
</tr>
<tr>
<td>► Significant range of farmer support schemes and tax reliefs have been introduced to incentivise land mobility (e.g. long term leasing), optimum land usage from a margin perspective, manage income volatility (income averaging), attract human capital, farm restructuring and collaborative farming structures (e.g. share / contract farming and partnerships), DFAM is also managing a new dairy equipment scheme and the roll out of a national genomic / herd improvement programme to improve sustainability and profitability</td>
<td>► Fixed milk contracts typically fix a portion of a suppliers annual forecast supply (approx. 5-20% range, based on minimum specifications around protein and fat content) and cover a shorter timeframe (18 - 36 months).</td>
</tr>
<tr>
<td>Teagasc</td>
<td>► Various pricing structures have been developed, such as linkages to a market index or basket of key product prices, a fixed base and variable bonus, volume caps and links to fixed feed input costs - all contracts and agreements have been tailored to the specific circumstances of the local dairy enterprise and its supplier base.</td>
</tr>
<tr>
<td>► Ireland’s farm advisory service (Teagasc) has introduced a range of educational / training programmes and on farm productivity apps,</td>
<td>► Dairy co-ops / companies and their farmer advisory representatives have worked closely with various farmer representative organisations and state support agencies in the design of these agreements and in communicating the risk management benefits, which has assisted with the widespread adoption of these agreements over the last 12-24 months</td>
</tr>
<tr>
<td>Enterprise Ireland (EI)</td>
<td></td>
</tr>
<tr>
<td>► EI is assisting industry to adopt Lean Manufacturing and increase international scale via collaboration and other sustainable manufacturing practices</td>
<td></td>
</tr>
<tr>
<td>► EI manages various Irish state / EU funding and has provided approx. Euro 250 mn over the last 5 years to support NPD / processor capacity expansion and public-private R&amp;D partnerships, such as Food Health Ireland (<a href="http://www.fhi.ie/home/">www.fhi.ie/home/</a>)</td>
<td></td>
</tr>
<tr>
<td>► EI works closely with the Industrial Development Agency (IDA) to attract a range of global food and beverage and pharmaceutical companies to locate in Ireland</td>
<td></td>
</tr>
<tr>
<td>Bord Bia</td>
<td></td>
</tr>
<tr>
<td>► Quality Assurance Schemes: Bord Bia has developed Quality Assurance Schemes for beef, dairy, lamb, pork, poultry, eggs and horticulture. These provide independent international certification throughout supply chain</td>
<td></td>
</tr>
<tr>
<td>► Origin Green (sustainability initiative) - to support a premium brand, Ireland is targeting to become a world leader in sustainable agriculture with an internationally accredited framework (being rolled out to Dairy and Beef sectors)</td>
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<td>Dairy industry strategic review</td>
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**Lead by ICOS (dairy processing industry association), key industry co-ops / plcs (such as Glanbia, Kerry) and the Irish Dairy Board undertook a detailed dairy industry review in 2011 / 2012 to build a factual baseline of industry performance / competitiveness in an international context to support future capex / funding / collaboration and product / market expansion plans (pre and post EU milk quota abolition)**
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**Queensland Beef**

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<td>Live export trade assessment - ABARES</td>
<td>Heilbron 2010 - QLD beef industry &amp; impact of live cattle exports.pdf</td>
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**Ireland Dairy**

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EY is committed to building a better working world for our people, for our clients and our wider community. We can only achieve this if we consistently provide exceptional client service delivered through our highest-performing teams. Our commitment to working together with you is to underpin everything we do with quality and exceptional client service that is connected, responsive and insightful.
Background
► It is widely agreed that significant ongoing investment will be required to fully realise the potential growth opportunity from the Northern WA Beef Industry.
► In order to understand how this investment may be attracted it is important to first understand the key drivers of the current investment landscape, how this may change and if there are any lessons that can be taken from other industries around successfully attracting investment and funding growth opportunities.

Approach
► EY consulted with a number of in-house Subject Matter Experts (SME), each selected for their significant in-depth industry experience.
► We considered three elements:
  ► the current investment landscape to capture investor perspectives,
  ► digital supply chain developments to capture how this may impact future state,
  ► the WA mining industry to capture learnings from recent funding and investment / growth models of development.
► A series of in-depth interviews were conducted and market soundings / insights captured.
► This document provides a summary of the key findings and insights relevant to the Northern WA Beef Industry, innovative supply chains and potential learnings from the WA resources sector.

Value
► This document provides meaningful insights to assist the further attraction of investment into the Northern WA Beef Industry.
► Key insights from each element are highlighted and considerations are suggested for broad actions the WA State Government could consider undertaking to support development (a number of which are being addressed under current or planned Royalty for Region funded programmes).

SME Panel

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<tr>
<th align="left">Agri-Investment &amp; Supply Chain</th>
<th align="left">WA Mining</th>
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<td align="left">James Mahoney</td>
<td align="left">Robin Parsons</td>
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<td align="left">EY Agri-investment expert</td>
<td align="left">Basil Mistilis</td>
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<td align="left">Significant cattle M&amp;A experience</td>
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<td align="left">John Li</td>
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<td align="left">EY’s Oceania China Business Group Leader</td>
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<td align="left">Richard Katter</td>
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<td align="left">Alternative agricultural supply chain development</td>
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Key findings - Investor Perspectives
From a market sounding perspective

Understanding the potential investor
- There is significant interest in investing in the Australian agricultural sector from both domestic and overseas investors
  - Domestic investors include trade participants (agri and general), high net worth individuals and family funds
    - Australian financial institutions (Private Equity and Superannuation) have shown limited interest due to shorter-term investment horizons
  - Overseas investor interest includes pension funds, sovereign wealth funds and corporations
    - Significant interest from SE Asia and the Middle East, North America with limited interest from European parties
    - North American pension funds rather than corporate investors, but are seeking large scale investments
    - Significant Chinese interest in securing supply for growing domestic / regional market demand
- With a longer-term investment horizon the focus for investors varies; some are seeking synergistic opportunities across the value chain, some are seeking ongoing supply, whilst others are interested in production returns and / or land value appreciation

Key issues / considerations for investors
- FIRB - the application (including the fee cost) and approvals process is considered a challenge for potential overseas investors
- Land tenure - length of pastoral leases relating to the land being sold is an important value consideration
- Management experience - demonstrated performance with deep operational understanding to add value
- Herd and property value - key value is assigned although investors are willing to pay a premium over and above asset value for well run businesses with track record of strong performance
- Opportunities for improvement - genetic / herd / pasture management improvements to increase carrying capacity, improvements in water and fencing infrastructure, data analytics from increased individual traceability etc.
- Australia’s competitive advantages - include FTAs, relatively low cost of production, disease free (no BSE), quality of produce, proximity to Asia
- Market distribution channels - proximity and access to various domestic and export market distribution channels e.g. live trade / Darwin abattoir
- Key risks include climate / drought, disease, traceability, infrastructure / logistics (including cold storage) and political / regulatory changes

Information & analysis required
- Financial data - P&L / BS / Cash Flow, opex breakdown, recent capex spend or requirements
- Property valuation - current independent market valuation including information on water access / infrastructure / soil types
- Key management / employee details
- Production information - historical production figures, herd breakdown and performance, genetics, market channels / logistics and long term market performance (it was noted that many of the larger producers have a considered spot / market price strategy)
- Data analytics - clear production metrics and benchmarks in relation to quality and consistency of product etc. NLIS traceability offers an opportunity to demonstrate how this information can support improved decision making / margin performance
- Equity based - funding has traditionally been equity based with some banking support however, the inherent long term seasonal risk profile makes debt funding more challenging, crowd funding has also been attempted recently (DomaComm)
- Non complex structures - JV structures with multiple bidders joining a consortium, partnerships between overseas investors and local partners
- Valuation of stock - SGARA (self generating and regenerating assets) method, has significant balance sheet impact, depending on market conditions. Stock is also often used as security for working capital financing arrangements
- Local management - overseas parties tend to utilise local representatives or seek local partners to manage investments
### Key findings - Investor Perspectives

From a China perspective

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<th>Understanding the potential investor</th>
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<tr>
<td>▶ Potential investors have a relatively low risk appetite and are seeking investments in mature businesses with sound management, there tends to be a perceived uncertainty / heightened risk profile around new ventures</td>
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<td>▶ Focus for potential investors varies, with smaller parties / individuals there can be more focus on land appreciation, whilst larger parties tend to be more focussed on production and securing supply - WA Govt. has already established communications with many of them</td>
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<tr>
<td>▶ Seeking operations that have an established track record and produce a consistent high quality traceable product that will allow them to leverage existing and emerging distribution channels in a competitive manner</td>
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<td>▶ Establishing trust amongst partners though demonstrated business and production performance is critical</td>
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<thead>
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<th>Key issues / considerations for investors</th>
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<td>▶ Beef is viewed as a good investment option with high returns expected over the long term – significant investment interest</td>
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<td>▶ The regional brand for WA beef is not as strong as other producing areas with a general perception that climate and grazing land not as productive as other states. There is a strong competitive international / national market for mobile capital investment</td>
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<td>▶ Existing high profile partnerships (Wellard, V&amp;V Walsh etc.) will be followed closely by all parties and will likely act as a bellwether for future investment</td>
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<td>▶ Currently in the mature stages of an initial investment phase, further phases of investment will follow but this will take time and require sounds relationships and deep level of trust</td>
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<tr>
<td>▶ Finding suitable investment ready operations that are mature and scalable is difficult in WA</td>
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<td>▶ Investment interest appears to have shifted with the market from predominantly processing, to sourcing live cattle and in market processing tailored to local specifications</td>
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<td>▶ Maintaining provenance and quality throughout the supply chain is a key focus - particularly the live exports and in-market processing</td>
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<tr>
<td>▶ Financial and production information to demonstrate a history of strong market and production performance</td>
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<td>▶ Systems and processes to maintain quality and provenance</td>
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<td>▶ Demonstrated management expertise</td>
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<th>Information &amp; analysis required</th>
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<td>▶ Prefer to join a local partner that is established in the market to facilitate expansion with reliance on local management</td>
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<td>▶ Historically, don’t seek to take an active role in the day to day management, as business models further develop this may change</td>
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<tr>
<td>▶ As relationships develop, likely to see increased trend towards more direct supply of fresh products in market supported by digital supply chains / e-commerce (use of B2C websites such as Tmall.com) and established brand, provenance, quality and traceability characteristics</td>
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<th>Current funding / business models</th>
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<tr>
<td>▶ Continue efforts to build and maintain relationships and trust amongst key client and market representatives - key for future phases of investment</td>
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<tr>
<td>▶ Explore opportunities to enhance in-market meat quality grading and food safety accreditation to maintain premium product position across supply chain</td>
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<td>▶ Develop programs to increase attractiveness of careers within the industry to attract and retain talent, explore linkages with universities and market participants to provide practical international experience to build future industry leadership</td>
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<td>▶ Develop data analytics offering to support the industry to further develop production metrics and benchmarks for quality and consistency of product</td>
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<td>▶ Explore adoption / pilot projects using suitable technology to support broader application and communication of productivity benefits</td>
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<tr>
<td>▶ Government (via ABARES / ABS) can play an important role in supporting greater information transparency on industry performance</td>
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Key findings - Supply Chain
From a current perspective

Current ventures

► The recently established high profile joint ventures / acquisitions with well known processors and exporters are key to further develop ongoing supply chains into China (e.g. Bindaree beef)
► Domestic processing ventures can be used as case studies as an investment model to follow if successful
► The further development of live cattle trade and in-market processing in China is seeing strong investor demand in these types of ventures
► The development of supporting infrastructure and land close to dedicated ports is assisting to facilitate this increased demand
► Maintaining provenance and a quality premium product processed in-market will be challenging and this will ultimately be key to maintaining premium product status
► Chinese export licencing remains a challenge to further development of new export supply chains - this could limit access to alternate supply chains such as e-Commerce

Key Considerations

► Develop WA provenance brand to assist all market participants, particularly e-Commerce participants and to raise the profile of the WA industry and to maintain premium product position
► Develop e-Commerce market offering and experience by identifying willing in-market and producer participants and facilitating transactions. Lessons and findings to be shared with the broader industry
Key findings - Supply Chain
From a future perspective

**Direct offtake agreements**
- Supply chains are evolving to support the increased demand for direct supply between producers and customers.
- There is a growing trend in establishing offtake agreements where large customers implement large product offtake agreements to control their supply for either live or boxed beef.
- This direct supply model can provide greater certainty for both producer and customer thus allowing business improvements to be implemented with an increased level of certainty.
- Agreements can allow for various pricing structures from long term contracted prices through to variable market spot prices, depending on the requirements of the counterparties.

**Digital supply Chain (DSC)**
- Digital Supply Chains (DCS) are one way of facilitating more direct supply between producers and customers.
- The DSC model could facilitate an offtake agreement between producers and customers in an open and transparent format online.
- In the DSC model, producers don’t provide revenue to supply chain, instead they pay an exchange fee for direct access.
- In contrast to current stock agent commission based market; the DSC access fee provides transparent access to the entire supply chain thus removing the need for some intermediaries.
- DSC is a disruptive model in which complete segments of the traditional supply chain may no longer be required.
- By achieving greater access to the supply chain producers will be able derive more value for their product.
- The model can be customised to suit desired structures and risk appetites of various parties e.g., if producers retain ownership of stock this will reduce the risk to the shipper / feedlot operator etc.
- The transparency and traceability pillars that underpin the model are easily achieved through the current use of NLIS RFID tags.
- Investment in DSC is suitable for sophisticated investors that want to get exposure to the industry with a medium to high risk appetite.
- It is well suited to larger producers who have capacity to participate to a significant level.
- Given the model’s maturity and initial risk profile, key challenges exist in establishing and implementing DSC.
- Producers consulted remain apprehensive about the model given it is yet to be proven and it is thought that initial adoption will require significant impetus from key producers and / or other significant supply chain participants.
- Parties are looking to apply DSC to cattle and live export, seafood and dairy industries, with prototypes to be established within the year.

**Key Considerations**
- Develop alternative supply chain capabilities and knowledge, identify interested parties (producer and customer), and facilitate prototype development, the findings of which could be shared with the wider industry.
- Explore opportunities to document adoption of alternative supply chains in other industries.
- Identify the possible business and transaction structures that could support local participants to utilise offtake agreements.
Key findings – WA Mining
From an investment and growth perspective

- The importance of infrastructure in the development of recent WA resources projects can’t be understated
- Access and proximity to key infrastructure especially rail and port access determined the viability of projects
- Various business models were developed to ensure ongoing access to critical infrastructure such as joint ventures and offtake agreements

- Engaging with all key stakeholders early allowed for alignment of purpose and expectations
- By understanding the key interest of stakeholders (government, investors, financiers etc.) critical support was gained that allowed for development to occur efficiently
- Central to this were key advocates that communicated the opportunity effectively

- Understanding specific customer requirements and tailoring a supply chain around this allowed for effective entry into highly competitive mature markets
- Understanding customer requirements allowed a clear vision to be formed on where to best service existing or new markets

- Innovative products and methods allowed new ventures to be competitive in mature markets
- By understanding customer requirements, innovative products were able to be created from production areas previously thought unviable that met market demand

- Central to the success of many development projects was a highly experienced and competent management team that communicated a vision of growth for the industry
- An in-depth understanding of the industry from production through to marketing allowed opportunities to be fully realised in an innovative and efficient fashion

Key Considerations

- Identify critical common use infrastructure requirements that if established may leverage future investment
- Government supported infrastructure development could reduce the risk for commercial investment

- Ongoing proactive engagement with relevant parties is key to understanding stakeholder requirements
- Develop and maintain ongoing relationships with interested parties with other government agencies to facilitate development

- Development of a clear vision for industry development would allow for investment/assistance to be targeted
- Develop program to identify and support the development of innovative production, market and supply chain solutions
- Is there sufficient local talent to lead the industry into the next phase of development? If not how can this be developed.
- Strong industry leadership will be required to maximise the opportunities presented
| 1 | Continue efforts to build and maintain relationships and continue to build trust with key client and market representatives – this will be vital for future phases of investment |
| 2 | Explore opportunities to enhance in-market meat quality grading and food safety accreditation to help maintain our premium product position |
| 3 | Develop programs to increase attractiveness of careers within the industry to attract and retain talent; explore linkages with universities and market participants to provide practical international experience to build future industry leadership |
| 4 | Develop data analytics offering to support the industry to further develop production metrics and benchmarks for quality and consistency of product. Explore adoption of suitable technology to support this initiative |
| 5 | Government (via ABARES / ABS) can play an important role in supporting greater information transparency on industry performance |
| 6 | Develop WA provenance brand to assist all market participants, particularly e-Commerce participants and to raise the profile of the WA industry and to maintain premium product position |
| 7 | Develop e-Commerce market offering and experience by identifying willing in-market and producer participants and facilitating transactions. Lessons and findings to be shared with the broader industry |
| 8 | Develop alternative supply chain capabilities and knowledge, identify interested parties (producer and customer), and facilitate prototype development the findings of which could be shared with the wider industry |
| 9 | Explore opportunities to document adoption of alternative supply chains in other industries |
| 10 | Identify the possible business and transaction structures that could support local participants to utilise offtake agreements |
| 11 | Identify critical common use infrastructure requirements that if established may leverage future investment. Government supported infrastructure development could reduce the risk for commercial investment |
| 12 | Develop and maintain ongoing relationships with interested parties with other government agencies to facilitate development and ensure stakeholder alignment and support |
| 13 | Development of a clear vision for industry development would allow for investment/assistance to be targeted |
| 14 | Develop program to identify and support the development of innovative production, market and supply chain solutions |
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Digital Supply Chains in Agriculture (1/2)

- Primary producer grows produce and sells to market operator
- Primary Producer provides order of produce available for sale to operator to allow forward selling
- Operator receives produce before selling to retailer
- Sale is made to retailers using a digital ordering platform
- Sale history and daily prices are available on a digital dashboard
- Retailer receives order that was made via digital ordering platform
- The order can be tracked from when it leaves the markets to when the retailer takes possession

Digital Supply Chain Benefits to the market operator:
- Receive produce from primary producers and automatically upload the information to the database, creating digital inventory records, saving time for workers to invest in more beneficial activities
- Greater visibility of supply chain meaning increased security and reduced risk of fraud and counterfeit product
- Market operator is able to make sales to retailer via the digital ordering platform improving efficiency and reducing costs

Digital Supply Chain Benefits to the consumer:
- Access and review past orders, produce availability from markets and price listings before making orders via the digital ordering platform, giving consumers more visibility of what is available
- Increased customer satisfaction, transparency, and visibility of orders and order status, increased efficiency and reduced costs
- Market operator to become supplier of choice, resulting in increased annual revenue and market domination
A solution was implemented to digitally track produce through the supply chain.

Digital supply chain benefits:
- Increase ability to accurately forward sell seafood - deceeding the lag time from four weeks to three hours will increase marketability and efficiency, improving sales revenue for the seafood company and increasing market share
- Increased visibility of the supply chain and enhanced data availability for management to track product security (remove any black holes) and identify bottlenecks, driving efficiency throughout all processes resulting in cost savings
- Qualified provenance story around the origin and journey of the product through the supply chain, removing the chance of fraud /counterfeit production and sale of goods
- Reduced risk if recall is required - produce can be tracked to a particular location, catch, batch and carton, reducing the total quantity needing to be recalled and hence reducing the cost of recall
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The overarching objective of the program is to create value for WA’s northern beef industry which includes Producers and Processors (collectively the “Participants”) via a) improvements in costs and margins; and b) supporting industry growth and value capture.

Value creation may be achieved when the program brings together:

- Business model (purpose, structure, Participant buy-in)
- Funding structures (grants, equity, debt)
- Funding sources (government, Participants, End users and customers, banks, investors)
- Participant liability (joint and several or several)
- How cost savings and incremental revenues are utilised
- Timing of Participant equity contributions (upfront equity, ongoing levy)
- Alternative (non-cash) Participant equity contribution mechanisms

When considering an optimal funding model, it is important to distinguish between the nature of the initiatives being funded, specifically the cost to implement and revenue profile. As such, we have split the funding model assessment as follows:

1) Business as usual (“BAU”) enhancement models
2) Capital intensive change models.

### Funding model - Business as usual (“BAU”) enhancement models

| Characteristics |
|-----------------|-----------------|-----------------|
| Key characteristics: | | |
| ▪ low to moderate dollar cost to implement; and |
| ▪ cost reduction and/or unidentified revenue upside. | |

| Considerations |
|-----------------|-----------------|-----------------|
| ▪ Business model (purpose, structure, Participant buy-in) | | |
| ▪ Funding structures (grants, equity, debt) | | |
| ▪ Funding sources (government, Participants, End users and customers, banks, investors) | | |
| ▪ Participant liability (joint and several or several) | | |
| ▪ How cost savings and incremental revenues are utilised | | |
| ▪ Timing of Participant equity contributions (upfront equity, ongoing levy) | | |
| ▪ Alternative (non-cash) Participant equity contribution mechanisms | | |

### Structures and sources of funding

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<thead>
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<th>Sources</th>
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<tr>
<td>Direct¹</td>
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<td>Grants</td>
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<tr>
<td>Equity</td>
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<td>Debt</td>
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<tr>
<th>Indirect²</th>
<th>Indirect investment</th>
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Direct funding sources are limited given the BAU enhancement models are not specifically revenue generative with benefits flowing directly to the Participants. Indirect investment may be raised by a Participant to meet any upfront funding (if required).
### Funding Model Considerations (2/2)

#### Funding model - Capital intensive change models

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Structures and sources of funding</th>
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<tr>
<td><strong>Key characteristics:</strong></td>
<td><strong>Sources</strong></td>
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<tr>
<td>▪ high dollar cost to implement; and</td>
<td><strong>Government</strong></td>
</tr>
<tr>
<td>▪ specifically revenue generative.</td>
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<thead>
<tr>
<th><strong>Considerations</strong></th>
<th><strong>Structures</strong></th>
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<tr>
<td>▪ Funding structures (grants, equity, debt)</td>
<td>Direct</td>
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<tr>
<td>▪ Funding sources (government, Participants, End users and customers, banks, investors)</td>
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<td>▪ Participant liability (joint and several or several)</td>
<td>Direct structures:</td>
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<td>▪ Comprehensive contract requirements</td>
<td>I. Project finance</td>
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<td>▪ Timing of Participant equity contributions (upfront equity, ongoing levy)</td>
<td>Indirect investment</td>
</tr>
<tr>
<td>▪ Alternative (non-cash) Participant equity contribution mechanisms</td>
<td>Indirect structures:</td>
</tr>
</tbody>
</table>

**Direct structures:**
- I. Project finance
- II. Customer prepayment finance

**Indirect structures:**
- I. Sale and leaseback – land / cattle
- II. Bank structure – cattle financing / debtor securitisation / working capital improvement
- III. Prepaid facilities
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Forward contracts

A standard forward contract is essentially a contractual agreement between a producer and a processor for the producer to supply a given product at a given time for a given price. The contract includes details of:
- the number, age, sex, breed type, weight range and fat range of the contract cattle;
- the fortnight during which they would be delivered;
- pricing arrangements.

### Expected Benefits

- Provides a guaranteed price therefore eliminating the risk of price fluctuations.
- Enables the producer to confidently plan the purchase of store cattle and feed.
- Enables the producer to implement appropriate feeding and grazing management strategies.
- A guaranteed return can be of assistance in negotiating loans and managing financial arrangements.
- Processors are able to clearly communicate their precise requirements to both producers and agents.
- Processors can guarantee continuity of supply and maintain the reputation and integrity of their product.

### Likely Challenges

- Producer needs to have a high degree of control over the production system supplying the specified product at the specified time (unforeseen circumstances may make this difficult).
- If the cattle cannot be supplied as specified in the contract, the producer is required to supply the shortfall with an equal number of animals from an alternative source within seven days of notification.

### Industry Examples

- NORTHERN NSW beef processor Bindaree Beef has moved into unchartered territory in terms of forward contracting in a bid to secure the type of supply it needs ahead of the forecast cattle shortage. The family owned abattoir at Inverell, which last year made significant steps to vertically integrate with the purchase of a feedlot at North Star and a merger with export meat marketer Sanger, is offering forward contracts out to four months and has taken that program as far afield as Central Queensland down to Southern NSW.
- It is estimated that in Queensland, the number of Queensland slaughter cattle processed each week that were committed to some form of forward contract were now in the “tens of thousands.” At a normal weekly kill of say, 70,000 head, that represents a substantial portion of the state’s overall production.
- In Ireland dairy, MSA (Milk Supply Agreements) terms and conditions vary significantly in relation to duration, break clause penalties, exclusivity, notice periods, financial / share investment requirements for additional processing capacity, volume supply limits (post quota) and seasonality schemes / bonuses. Fixed milk contracts typically fix a portion of a suppliers annual forecast supply (approx. 5-20% range, based on minimum specifications around protein and fat content) and cover a shorter timeframe (18 – 36 months). Various pricing structures have been developed, such as linkages to a market index or basket of key product prices, a fixed base and variable bonus, volume caps and links to fixed feed input costs - all contracts and agreements have been tailored to the specific circumstances of the local dairy enterprise and its supplier base.

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Rotational Grazing and Share Profit Alliance

An optionality to add future value to the Producer Collaboration model

- Using fences, the entire farm is transformed into multiple paddocks, each with access to a watering hub. Generally each wagon wheel will consist of a combination of perennial grass paddocks, annual pasture and tagasaste, with stock generally rotating within each hub.

- Rotational grazing, instead of set stocking, is done. Perennial pastures are an important part of this. The conventional grazing system are based on winter annuals, which die off in WA’s hot, dry summers, leaving the soil exposed to searing temperatures and wind and water erosion, presenting farmers with a long feed gap. This can be addressed by planting perennial plants: summer-active sub-tropical grasses, and palatable shrubs like tagasaste, wattle and rhabodia, which make effective use of summer rainfall and harvest solar energy year-round. This can significantly increase livestock units per hectare per year.

- Perennials are supported by rotational grazing, resting paddocks for months, thereby allowing grazed plants to fully recover.

- The problem of raising a substantial amount of capital for both fencing and purchasing cattle is alleviated by entering into a share profit alliance with a number of pastoralists in an ongoing and mutually beneficial arrangement. The backgrounding farm does not have to find the capital to purchase cattle and the pastoralists involved in the deal do not pay for agistment.

- The farm’s financial gain is based on the weight gain performance of the stock – hence the incentive to ensure there is plenty of feed available. The cattle are weighed prior to being trucked to the farm and the farm receives the equivalent of two thirds of the weight gain, whilst the pastoralists receive one third, plus the initial weight.

- For instance, Droughtmasters that range from just under 200kg to over 300kg are brought up to nearly 400kg. Other breeders send young bulls from as low as 120kg which are brought up to 200kg for the export bull trade. Heifers come in from 150kg to 250kg and are brought up to 300kg for live export.
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