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Value in Value Chains

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Executive Summary

The business environment for Australian livestock producers is rapidly changing with factors such as technological innovation, industry consolidation, and changing consumer demands, driving businesses across the supply chain to develop new approaches to capturing value. There is particular interest in the development of shorter or more collaborative value chains. Many producers are investigating alternative business models that bring them closer to the customers (e.g. processors) or the end consumers of their product. The motivation for these producers varies greatly, however there is a common interest in adding value to their product and reducing the risks of commodity price cycles.

The purpose of this study is to help livestock producers, Meat and Livestock Australia (MLA) and others involved in the red meat industry gain a better understanding of the value that can be derived from direct participation in red-meat value chains, and the characteristics of value-chains that deliver greater benefits.

The study consisted of two key components: a desktop literature review, and case-study analysis. The desk-top review explored relevant recent research which has sought to identify how participants in value chains interact for optimum financial performance – with a specific focus on red meat chains. Research from the Australian, New Zealand and Canadian red meat industries was highlighted, and insight was also gained from the US and EU industries. The second component of the research involved in-depth interviews with the operators of five case study businesses which showcase a range of different business models involving value chain collaboration (1 pork, 4 red meat).

This study highlighted common themes that appear to facilitate closer collaboration in the value chain, including the importance of trust, clearly defined business objectives and a high level of information flow between suppliers and customers. The benefits of more direct participation by producers in value chains include improved business relationships, increased ability to innovate, greater control over the trading environment, and increased information flow that supports better business decision-making.

As new value chain models continue to emerge and evolve there are likely to be implications for the way MLA invests in its R&D, marketing and industry integrity programs. This study summarised key areas that are likely to influence the further development of collaborative value chains including: enhanced market information services, tailoring extension services to meet business needs, providing resources to help strengthen the marketing capabilities of producers, and investments that to improve on-farm decision-making (such as objective carcass measurement).

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Introduction

Livestock producers in the red-meat industries in Australia have historically relied on business models and production systems that have not been directly connected to the end consumer. Cattle, sheep and goats are grown and then traded in livestock markets or to abattoirs. The whole animal is the product and the process of turning that product into something that the consumer interacts with, e.g. saleable meat, has not generally been integral to the business systems of farmers.

In recent years, however, there has been a growing trend for farm businesses to become more directly involved in the value chain right through to the end consumer. There are many drivers for this including the desire to be less exposed to variable commodity markets and to develop longer term more stable marketing arrangements. At the same time, changes in the way that meat is processed and the associated technologies that are being used is also providing a much more data rich environment that has the potential to enhance producers' ability to understand the requirements of, and the benefits associated with more direct participation in the entire value chain through to consumers.

The progressive automation of meat processing, in combination with the ever-decreasing cost of obtaining objective carcass data and the diminishing cost of computing and telecommunications services has created the potential for much more precise information to be obtained about the processing performance of livestock. This data can be exchanged amongst participants in value chains and adds to farmer-generated evidence and credence information to provide a plethora of information that can be used to inform consumers about the product they are purchasing.

Integrated value chains tend to be more efficient. Evidence and experience arising from industrial systems as diverse as aircraft manufacturing, automotive construction and food manufacturing demonstrate that when information flow throughout the value chain is unrestricted there is a much greater ability to accurately specify and control variability and uncertainty.

Identified improvements in system efficiencies arising from more integrated value chains include reduced product variability and rejection, reduced waste, enhanced risk management, improved alignment with consumer requirements, and the opportunity to develop 'lean' value chains with reduced redundancy and less requirement for excess capacity.

A challenge for both MLA and livestock producers is to gain a better understanding of the extent to which livestock producers obtain benefits from direct participation in red-meat value chains. In seeking to understand this, it will be important to recognize that there are many ways to participate more directly in red-meat value chains, each with characteristics that will suit different producers or production systems.

For MLA, the answer to this question is important, as a better understanding of the value producer participants obtain from such arrangements will provide important guidance in the future development of integrity and traceability systems, and in the development of feedback systems and software platforms for use by livestock producers.

For livestock producers, a better understanding of both the benefits and challenges associated with direct participation in value chains will help to improve decision-making, and ensure that those deciding to participate are better informed and prepared to manage the implications of such arrangements for their businesses.

The research reported here aims to help livestock producers, MLA and others gain a better understanding of the characteristics of red-meat value chains. The ultimate objective is for improved livestock producer understanding of the value (financial and otherwise) of more direct participation in red-meat value chains.

A description of the scope of the research and the methodology used is contained in *Appendix 1*.

Review of literature.

This literature review aims to provide an overview of research investigating how value chains operate. It examines the components of value chains particularly in relation to information flows, as well as outlining research into how much impact consumer values have on producer decision making.

The Australian Farm Institute (AFI) research report, 'Enhancing the Customer Focus of Australian Agriculture' (Heilbron & Larkin, 2006) examined the trend towards an increase in global agricultural output and the growth in sales of higher value produce. It concluded that for Australian agriculture to prosper it must respond to these signals and seek higher value markets. To do this successfully the end consumer must be the key customer, a significant change for most farmers. For many farmers, their obvious customer is an intermediary such as another farmer or a processor and end consumers are far removed from farms, both geographically and functionally. This can lead to on-farm decision making being based on enterprise preference or current capabilities, rather than a focus on end-consumer needs.

Heilbron and Larkin note that understanding what customers want and focusing totally on meeting those needs is the essence of survival and prosperity in contemporary global agricultural markets. Most farmers accept the need to create value for consumers, but meeting the demanding product specifications and standards required by consumers in high value markets is costly. Many farmers have concerns about whether the extra costs associated with meeting the needs of higher value market will be rewarded by greater returns.

A disconnection from consumer needs and wants is not unique to Australia with an investigation of agri-food supply chains in New Zealand finding that many farmers have little awareness of customer demands or opportunities in the market (Lees & Nuthall, 2015a). Providing knowledge and awareness of market needs and supply chain opportunities gave farmers the tools and motivation to break away from the agricultural commodity cycle by forming strong, enduring supply chain relationships.

Defining value chains

The characteristics of value chains were described by Michael Porter in his book "Competitive Advantage: Creating and Sustaining Superior Performance" (Porter, 1985). Porter's Value Chain concept describes a process view of organisations where manufacturing (or service) is a system, made up of sub-systems each with inputs, transformation processes, and outputs. Each sub-system involves the acquisition and consumption of resources including money, labour, materials, equipment, buildings, land, administration and management. Porter then classifies the value chain activities that occur within each sub system as either primary or support activities.

Primary activities include;

- Inbound Logistics - involving relationships with suppliers to receive, store and disseminate inputs.
- Operations - all the activities required to transform inputs into outputs (products or services).
- Outbound Logistics - all the activities required to collect, store and distribute outputs.
- Marketing and Sales - activities to inform buyers about products and services, induce buyers and facilitate purchases.
- Service - includes all the activities required to keep the product or service working effectively for the buyer after it is sold and delivered.

Secondary activities include;

- Procurement - the acquisition of inputs or resources.
- Human Resource Management - consists of all activities in recruiting, hiring, training, development, compensating and (if necessary) dismissing personnel.
- Technological Development - pertains to the equipment, hardware, software, procedures and technical knowledge brought to bear in the transformation of inputs and outputs.
- Infrastructure - functions such as accounting, legal, finance, planning, public affairs, government relations, quality assurance and general management.

In Porter's explanation of value chains, generally each sub-system is independent of the others. Vertical integration is an exception, where a company may have ownership of the all the sub-systems within the supply chain.

Using Porter's terminology in the context of the red meat value chain, , there are a number of sub systems between the paddock and the consumer. Livestock production, marketing and sales activities by producers, the processing sector, and red meat wholesalers and retailers can all be considered as sub systems in the red meat value chain.

In this report, the terms supply chain and value chain are used frequently, but not interchangeably. The key distinction made between the terms is that the term 'value chain' implies a system in which there is a greater focus on the importance of ongoing relationships between businesses and a greater emphasis on understanding the needs of end consumers. The term 'supply chain' implies a system in which the interaction between market participants has a short-term transaction focus based largely on price in a spot market, and longer-term business relationships are uncommon.

In other words, the term value chain encompasses both supply chain and demand (i.e. consumer) chain concepts with a focus on the role of information and relationships at all stages from input supply to final consumption. Another common distinction made in the literature is that supply chains are production-driven whereas value chains are consumer-driven.

Integrated supply chains are formed when the sub-systems within value chains are connected to build efficiencies and reduce costs. Lee (2000) found that integrated supply chains create value as well as reducing costs for the entire supply chain and its shareholders. Lee also found that the critical component of integrated supply chains is information sharing. Sharing of information (knowledge) within the value chain is crucial to inform the producer, processor, wholesaler, retailer or food service organisation about the needs of the end consumer. Information flow is also crucial for regulatory requirements (product labelling, food safety, withholding periods) and to fulfil consumer requirements (such as provenance and credence characteristics).

The structure and governance of value chains

The relationship between different firms (e.g. farmers and processors) is directly affected by the structure of the value chain. The governance of this relationship is influenced by factors such as the size and market power of different firms, complexity of transactions, and information/ data flow (Gereffi, Humphrey, & Sturgeon, 2015).

Within an industry sector several different types of governance arrangements might be evident. For example, in the beef industry cattle are sold through a variety of market channels (saleyards, forward contracts, and over-the-hooks). Each of these channels has different governance arrangements, a consequence of different transaction costs, transaction complexity, and information requirements. According to Gereffi, three variables determine the structure and governance of a value chain, which are;

- Complexity of transactions between firms;
- Ability to codify transactions (i.e. the degree to which transaction complexity can be mitigated through standardising information and detailing compliance requirements); and
- Capabilities in the supply base (the degree to which suppliers have the necessary capabilities to meet the buyers' requirements).

Allen Wysocki and others (2006) reviewed a diverse range of agricultural value chains and concluded that there are two general contrasting types of value chain relationships: 'invisible hand' coordination and 'managed' coordination (see table below). The key differences between these relationships relate to factors including their duration, degree of dependence, benefits, level of information sharing, and flexibility.

Two contrasting types of value chain relationships	
'Invisible hand' coordination	'Managed' coordination
Self-interest	Mutual interest
Short-term relationship	Long-term relationship
Opportunism	Shared benefits
Limited information sharing	Open information sharing
Flexibility	Stability
Independence	Interdependence
Source: (Wysocki, Peteson, & Harsh, 2006)	

Why value chain innovation is important to the Australian red meat industry

The benefits of belonging to a closely-aligned value chain include improved business relationships, improved information flow, and greater control of the trading environment (e.g. greater price certainty). These factors can help encourage innovation. Laurie Bonney from the University of Tasmania's Value Chain Research Group describes this type of innovation as value chain co-innovation:

"co-innovation in a value chain occurs when two or more companies in that chain collaborate to innovate in product, process, raw material inputs, markets or governance to improve the efficiency and/or effectiveness of delivering value to consumers and overall sustainable competitive advantage of the whole chain" (Bonney, 2011)

Value chain co-innovation has the potential to support investments that can improve the productivity and profitability of the Australian red meat industry. The Australian red meat industry is a major contributor to the national economy. In recent decades, there have been many factors that have shaped the size of farm businesses and structure of the supply chain including; farm consolidation/rationalisation, changes to land use and profitability (e.g. the impact of the decline in the wool industry in the early 1990's), and consolidation in the meat processing sector. As the ACCC summarised in its 2016 interim report on the beef industry, the industry is large, diverse, complex and fragmented. There are a range of activities and a variety of channels through which cattle may be grown-out, sold, processed and reach an end market (Australian Competition & Consumer Commission, 2016).

The trend towards a more integrated chain can be seen playing out in the US beef industry. 'New generation' producer-owned cooperatives like US Premium Beef Ltd have emerged as ways of bringing together major segments of the production chain- cow-calf producers, backgrounders, feedlotters, and processors- to share the risks and returns of beef prices (Katz and Boland, 2000). (REF). Key features of this model are vertical integration in production and processing and a quality-based pricing structure. This business model is underpinned by a business strategy which aims to help bridge the gap between producers and consumers, while strengthening the position of producers in the value chain. As one member notes:

"We, as an industry, can either decide to work together and compete, or we can maintain our romantic cowboy independence, fight amongst ourselves, and become totally irrelevant".

Mark Gardiner, Kansas (USA) cattle producer

There is very limited research exploring the economic impacts of different supply chain models, specifically in relation to farmgate returns. While there are few formal studies outlining the costs and benefits of closer supply chain relationships, there is a widespread perception that closer relationships and a high level of information flow leads to higher prices (and margins). A 2008 study by Leat and others, showed that the level of commercial reward is one of the most

important factors influencing the perceived quality of the relationship between two firms. This reward may range from direct improvements in margins (revenues minus cost) to indirect benefits such as greater reliability or flexibility during difficult market conditions (Leat, Cesar, & Beata, 2008).

A 2012 CSIRO report identified 'choosy customers' as one of the megatrends likely to influence the future of Australian economy (Rural Industries Research and Development Corporation 2015). As consumers demand a greater understanding of where and how their food is produced there is a greater need for producers to document and verify their production practices. Consequently, there is a requirement for traceability and integrity systems that operate from paddock to plate. This is shaping the development of supply chain models, placing further emphasis on the importance of information flow.

A study on local beef supply chains in Canada emphasised the huge variation that exists in production and marketing strategies used by beef producers. The study's authors suggested that each producer must chose a marketing strategy or combination of strategies that match their capabilities and their production capacity (Lipton and Spyce, 2011). Moreover, they have to be flexible and ready to adjust their approach in order to compensate for changing conditions and to take advantage of new opportunities. The study also highlighted the variation in costs and benefits involved in different supply chain models. For example, for direct marketers (i.e. involved in production through to retail) the potential benefits are significant, but the costs and risks associated with this system are also significantly higher. The study concluded by identifying the need for further research including; producer returns from different marketing options, the sharing of risk across the supply chain, and the factors driving the development of longer-term relationships.

Enablers of and barriers to value chain collaboration

Research suggests that despite the huge variation between the structure and governance (including inter-firm relationships) of value chains, there are common factors that act as enablers of or barriers to value chain collaboration. The following section discusses these barriers and enablers, with a focus on the role of information flow, trust and commitment.

Barriers to value chain collaboration

There are a number of barriers that limit collaboration in a value chain. Some of these factors relate to the structure and governance of the industry. This includes the size of firms, power asymmetries between different firms, and the length of the supply chain (e.g. number and complexity of processes involved in different stages between producer and consumer). Other factors relate to characteristics of individual firms including their motivation, risk preferences, and management capabilities. Poor chain relationships are reflected in a lack of trust, conflicts of interest, and limited sharing of benefits.

Information flow is one of the most important factors affecting collaboration between different firms. Barriers to information flow include the complexity of information and the incompatibility of different systems and processes involved in transferring information. Examples of important types of information include product quality (e.g. quality assurance programs) and payment systems (e.g. payment methodologies based on incentives and discounts for product quality).

A summary of inhibitors to value chain collaboration from the academic literature	
Type of Inhibitor	Factor
Corporate culture	<ul style="list-style-type: none"> • Short term focus • Risk aversion • Passive/ defensive culture
Barriers to information and knowledge flows	<ul style="list-style-type: none"> • Complexity of knowledge • Lack of a credible source of knowledge • Incompatible systems • Process rigidities
Design and governance of the value chain	<ul style="list-style-type: none"> • Size of firms • Lack of strategic outlook • Lack of shared vision • Lack of policies and processes • Chain attributes- no. of suppliers, trading strategies • Complex structure of the value chain • Power asymmetries
Poor chain relationships	<ul style="list-style-type: none"> • Lack of trust • Opportunism • Lack of collaboration • Lack of honesty • Lack of benefit sharing • Conflicts of interest
Poor management	<ul style="list-style-type: none"> • Lack of skills in management & marketing • Insufficient financial, technological and human resources • Lack of appropriate organisational structure • Lack of management incentives • Lack of innovation strategy • Lack of systematic processes • Failure to identify different behaviours needed
Based on: (Bonney, 2011)	

Enablers of value chain collaboration

There is a growing international body of literature examining case studies of successful value chain collaboration in the red meat industry. There are a wide range of factors that enable collaboration, but several recurring themes.

Ding and others, conducted an extensive survey of the Australian beef processing industry examining the relationship between supply chain relationship quality and food quality. They found that information quality has a significant positive relationship with food quality (Ding, Ferry, Parton, & Matanda 2014). The authors also concluded there were five key aspects to supply chain relationships in the beef industry:

- Strategic alliance - collaboration in which buyers and sellers (e.g. cattle producers, beef processors and retailers) interact to achieve mutually beneficial outcomes.
- Customer focus - this refers to the level of focus on customer relationship management, which is the process of identifying, maintaining, enhancing, and when necessary terminating relationships with customers and other stakeholders.
- Information sharing - the amount of information which is shared by supply chain partners. Voluntarily sharing information has been shown to be particularly important to supply chain relationships.
- Information quality - this refers to the accuracy, timeliness, adequacy and credibility of information.
- Lean system - the leanness of a system refers to the ability to remove unnecessary costs, and other waste from the supply chain. Cost reduction through a lean management approach is a motivation for closer supply chain relationships and supply chain integration.

The following sections focus on two of what appear to be the most important enablers of value chain collaboration: trust and information sharing.

Trust, collaboration, and commitment

Trust is one of the most important factors influencing the relationships between different firms in a supply chain. In many cases, high levels of trust reflect the willingness of supply chain partners to commit to a collaborative relationship.

Australian researcher Laurie Bonney (2011) conducted research investigating the factors influencing value chain relationships and ways to incentivise collaboration. He concluded that the fundamental challenges are social rather than technical, involving issues of trust, co-operation, power and politics.

In a 2015 study Engel and others explored how supply chain relationships influence information sharing in a range of European supply chains. In this study, trust was defined as the willingness of a firm to be vulnerable to the actions of a partner, based on fair behaviour and a sense of

reciprocity, and irrespective of the ability to control the actions of that partner. The researchers concluded that trust fosters collaborative building of supply chain knowledge. It was also suggested that the importance of trust for information in a supply chain increases as the number of supply chain members increases (Engel, Birth, Goswani, & Krcmar, 2013).

The literature suggests that trust can strengthen supply chain relationships because firms are motivated to invest in relationship-specific assets to form long-term relationships. A 2012 study by Jie investigated the role of trust and commitment between wholesalers and retailers in the Australian lamb industry. The study identified two key dimensions of trust: 'competence trust' and 'goodwill trust'. Competence trust was defined by Jie as the expectation of the capability and know-how of the trustee to meet their promise, agreement and/or obligation. Goodwill trust was classified into three dimensions - responsibility, dependability and integrity which all related to the expectations of moral obligations and responsibility in social relationships.

Research suggests that strategic relationships between supply chain partners are important for a business's operational performance and competitiveness. A study conducted in New Zealand by Bensemman and Shadbolt highlighted a wide variation in the types of relationships between lamb producers (Bensemman & Shadbolt, 2015). The researchers categorised producers into active or passive marketers with high or low levels of commitment. They found that producers' marketing and selling decisions are connected to a range of other farm management factors, and that a holistic view of farm businesses is required to understand how supply chain relationships develop. The key factors appeared to be a producer's values, their strategic business objectives, and their desire to reduce uncertainty around selling price.

A 2015 study of New Zealand red meat chains by Lees emphasised that when high levels of trust were established, the resulting openness and transparency helped to enable customer requirements to be communicated along the chain to producers (Lees, 2015). The author also pointed out that New Zealand exporters are increasingly employing staff focused on communicating customer requirements to producers.

Building supply chain partnerships through the sharing of knowledge, information and long term goals allows shifts in the predominant marketing models for red meat industries. Partnership models with increased supply chain commitment involving long term contracts to deliver high quality products enable consumer needs to be more easily met than the traditional commodity model which relies on short term spot markets (Fischer, Hartmann, & Reynolds, 2008).

There is a significant body of descriptive research on the characteristics of supply chains, but relatively little on what influences farmers to commit to long-term supply chain partnerships. Lees and Nuthall (2015b) conducted interviews with red meat producers in New Zealand to understand the characteristics that led to the formation of long term supply chain partnerships. They found that suppliers sought differentiated supply chains if they were identified as creating value for their existing resources. However, the research also pointed out that these suppliers generally had higher management capabilities, which resulted in a greater ability to meet higher product specifications. In addition to capability and motivation, Lees and Nuthall highlighted the

importance of producers understanding market opportunities and consumers' demands. While many farmers have the capability and motivation to form supply chain partnerships, a lack of knowledge about consumer and markets needs acted as a significant barrier (Lees & Nuthall, 2015). Providing and promoting knowledge of consumers' needs is therefore an important factor in enabling long-term partnerships in red meat supply chains.

The importance of information flow in the supply chain

The level and quality of information shared between supply chain partners has a strong influence on the level of collaboration in a supply chain.

The level of information sharing is often determined by factors like incentive alignment and differences in bargaining power. In addition, socio-political factors such as trust, culture, organisational learning, and the information management capability of firms have been found to influence their information-sharing behaviour. Even when the technical capacity to share information between organisations within a supply chain was not limited, the decision to share information was more dependent on supply chain knowledge, trust and bargaining power (Engel et al., 2013).

Christopher & Lee (2004), had earlier commented on the interdependency of good information systems and trust in efficient supply chains. They found that real time internet technologies which share information between supply chain partners about markets, sales and production timetables, are critical for creating the trust required to enter into long term supply agreements.

There is a wide variation in the quantity and quality of information shared between participants in the Australian red meat industry, particularly price information. The ACCC's 2016 inquiry into competition in the Australian cattle and beef industry highlighted the complexity involved in making comparisons between prices available in different supply chains. The ACCC's Interim Report suggested that producers find it difficult to make price comparisons between different marketing channels. One of the key reasons is inconsistent 'kill sheets' and price reporting frameworks. In Australia, meat processors are required to provide information to livestock vendors (i.e. cattle producers) that is consistent with AUSMEAT language. This feedback ('kill sheet') must contain, at a minimum, information on Hot Standard Carcase Weight (HSCW), P8 fat measurement (mm), dentition, and bruise score. Most payment systems are based on a c/kg price, with HSCW a critical measurement. In some instances, prices are determined based on other quality characteristics such as meat colour, fat colour, and marbling.

MLA's role in supporting value chain collaboration

Understanding the factors that limit or enable collaboration between supply chain partners is critical for considering the potential impact of investments in research, development and extension (RD&E), marketing, and industry integrity systems (e.g. National Livestock Identification System (NLIS)).

MLA is currently leading the development of a digital strategy for the Australian red meat and livestock industries. This strategy aims to enable the capture, integration and interpretation of data generated within the livestock industry through a range of new technologies. This strategy is designed to empower participants at every point in the value chain through data-driven decision making. The strategy is also considering cultural factors which will impact the way technology and innovations are adopted.

A 'value chain' focus is useful for considering how investments can deliver benefits across the supply chain. In a study commissioned by MLA in 2014, Griffith and others explored the implications of the rise of new value chain models for MLA's investments in marketing and research, development, and extension. The authors proposed that MLA should use a value chain framework to guide its investments, focusing on the ideas of value chain goods, value chain failure, and value chain externalities. The premise of this approach is that the ability of red meat producers to benefit from value creation is constrained by the potential for misalignment between the financial incentives for individual firms and their collective incentives when they are part of a value chain or system (Griffith et al 2014). The authors concluded that there were several areas likely to facilitate the creation of value across the red meat chain including:

- Establishing chain-wide standards and certification.
- Establishing uniform grading schemes.
- Agricultural RD&E.
- Process innovation: new or better tools and technologies for use in the value chain.
- Product innovation: new product development.
- Enhancing consumer and channel knowledge.
- Disease control: inspection services to control for pests and diseases and to regulate food safety.
- Collaboration in the use of information and communication technologies.
- Exploiting scale economies in capital investment through joint action.
- Exploiting scope economies through joint action.

An abiding challenge for organisations such as MLA is that while a value-chain approach has significant attractions, the red meat industry in Australia contains many participants who are unconvinced of the benefits of a value-chain approach, or who are not sufficiently motivated to make the changes and expend the effort required to adopt a value-chain approach.

Case Studies

Five case studies were conducted to gather information about how knowledge is exchanged along value chains, as well as other critical factors contributing to the success (or otherwise) of value chains. The case study subjects were selected in collaboration with MLA to cover a range of red meats and supply agreement models.

Cast Study 1	
Supply Chain Model	Contract Grower- PORK
Name	Jon Oldfied and MilneAgriGroup
Location	Plantagenet region, Western Australia
Rationale for Selection	Contract growing is a common model in intensive animal industries. Are there lessons for the red meat industry?

Cast Study 2	
Supply Chain Model	Branded product- BEEF
Name	John Bruce and Greenhams Tasmania Pty Ltd
Location	Stanley, north-west Tasmania
Rationale for Selection	Greenhams Tasmania have developed a premium brand, Cape Grim beef, which sources cattle from north-west Tasmania for their Smithton abattoir. The company has developed strong relationships with cattle producers like John Bruce through education and training, and providing objective carcass feedback.

Cast Study 3	
Supply Chain Model	Integrated production and marketing operation (direct to food service) GOAT
Name	The Stewart family
Location	Collie, north-west of Dubbo, New South Wales
Rationale for Selection	The Stewart family have developed the Gourmet Goat Lady brand, which sells premium goat meat and value-added goat products direct to customers (e.g. butchers, restaurants, and individuals).

Cast Study 4	
Supply Chain Model	Integrated production and marketing operation (retail supply and export markets)- BEEF
Name	MDH Pty Ltd The McDonald Family
Location	Various locations in Queensland- from Cape York Peninsula to the Western Darling Downs
Rationale for Selection	MDH is an example of a large-scale integrated beef production business. The family-owned business incorporates breeding and backgrounding properties, a feedlot, and a chain of retail butcher shops (Super Butcher) selling branded beef (e.g. Wallumba Premium Beef).

Cast Study 5	
Supply Chain Model	Branded product- LAMB
Name	Mirrool Creek Lamb The Hayes family
Location	Sydney and the New South Wales Riverina
Rationale for Selection	The Hayes family have developed the Mirrool Creek Lamb brand, which sources lamb from select properties in the NSW Riverina. Their products are sold in Sydney to high-end restaurants, farmers markets and specialty retailers (e.g. wholefoods grocers).

Case Study 1 – Contract Grower – PORK

Producer	Jon Oldfield
Enterprise	Free-range Pigs, Grains and Oilseeds
Farm Size	600 hectares
Location	Kendenup, 70kms north west of Albany, Western Australia
Rainfall	740 mm/year

Overview

Jon Oldfield started his working life as a shearer before establishing a machinery contracting business specialising in supplying services to the forestry and agricultural sectors. The contracting business arose from the need to establish an off-farm source of income since his 200 ha farm was not large enough to support a commercially viable number of cattle or sheep. In the late 2000's, the collapse of Managed Investment Scheme (MIS) funding of forestry development around Albany collapsed, Jon's contracting business became unviable. Jon decided at that time to increase the size of his farm to 600ha and to look for viable business opportunities to make profitable use of the land.

The opportunity arose to become a contractor grower of pigs for the Milne Group. Contract growers are supplied with young pigs, plus stock feed, veterinary supplies and support (knowledge and expertise) as well as transportation to move the pigs to and from the farm. The grower is required to supply land, water, labour, infrastructure and machinery, and is paid based on the weight gain of the pigs.

Jon's contract growing business now turns off between 440-500 pigs per week allowing Jon and his son to earn income from the farm.

Milne AgriGroup

Milne AgriGroup (Milnes) is a large integrated Western Australian agribusiness company. The company's core business of stock feed and animal nutrition was started in 1910 and has since expanded into pork production. Milnes vertical integration has been driven by a desire to add value to their products and manage the risk of volatile commodity prices. At first, Milnes owned the piggeries, but more recently the business model has changed to contract growing. Under this model, the company supplies inputs to producers who grow out free-range pigs to agreed specifications. Contract growing has offered Milnes a less capital-intensive way to expand its pork business. The company is now one of the leading suppliers of free-range pork to Coles, where it is marketed under the Coles Finest Brand or Milnes own Plantagenet Free-range Pork brand.

Milnes systems are built around supplying a high quality, consistent product to consumer, which is beneficial to both the producer and the retailer. The integrity systems associated with this value chain are built from the farm level up, and enable detailed monitoring and reporting.

Enterprise

Jon is sent an average of 440 weaner pigs (3 ½ weeks old) each week. These pigs are received in family groups within batches. For the first couple of weeks the weaners are kept in an Ecoshelter (220 weaners per shelter) in a small paddock. The Ecoshelters contain deep straw bedding which provide protection from the weather. The free-range paddock is open-air and bare dirt and provides an outdoor environment where the pigs are free to express natural behaviours. As the pigs grow they are progressively moved into larger paddocks. The pigs are fed using self-feeders and weighed every 2 weeks, and rations are adjusted when needed. Milnes supplies all the feed rations. The pigs are free-range, accredited by the Australian Pork Industry Quality Assurance Program and endorsed by the RSCPA. The enterprise is run by Jon and his son, and supported by three full-time employees.

Value Chain Model

Milnes are involved in a number of supply chain activities including input supply, transport, and wholesaling (marketing). Under the contract growing arrangement, Jon is provided with piglets, which are bred locally in free-range conditions, and key production inputs. The finished pigs are sent to Perth for slaughter. Carcasses are then sent by rail freight to Adelaide for further processing and packaging.

The relationship with Milnes is critical to Jon's business. As part of their agreement, a local Milnes manager visits Jon's farm each week to monitor performance. Jon is rewarded with bonus payments if a sufficient proportion of pigs meet or exceed specifications. Discounts are applied if less than 85% of pigs meet specifications.

The information contained in kill sheets helps Jon make better production decisions. For example, if diseases like Erysipelas are detected in carcasses Jon is advised and appropriately adjusts his production practices and vaccinates his pigs.

The integrated nature of the value chain and relationship with Milnes has connected Jon more directly to market signals. He feels that he is now much more informed about consumer preferences and is confident that the prices he is receiving are fair and transparent.

Marketing Strategy

Most of the pork (85-90%) produced under the agreement between Jon and Milnes is sold at Coles supermarkets under the Coles Finest Brand. This brand is free-range accredited by the Australian Pork Industry Quality Assurance Program and endorsed by the RSPCA.

The remaining product is marketed under Milnes Plantagenet Pork brand. The key marketing attributes of this brand are its taste and nutrition, as well as its animal welfare and environmental credentials. The Plantagenet Pork brand promotes the use of a ‘special natural diet’ comprised of corn and WA grains, and its free-range production system.

Jon has not had any direct contact with end consumers to date. However, he has had contact with Coles representatives, who have visited the farm and provided valuable feedback on product requirements.

Coles Brand Free-range Pork – Coles Finest

Coles Brand Free-range Pork is RSPCA approved and sourced from a select group of farmers in the great southern region of Western Australia. Coles marketing material states that under the RSPCA accreditation scheme there is a maximum stocking density of 30 sows per hectare, with pigs grown in an environment in which they are free to roam and can express their natural behaviours outdoors.



Plantagenet Pork Products

Milnes have developed the Plantagenet Pork brand, which promoted using provenance, quality and consistency claims. Where possible they seek to differentiate their offering at the consumer level. This includes offering marinated products, providing recipes, or using innovative packaging (e.g. presenting the product in a roasting tin).

Promotion of the Plantagenet Pork brand is focused on animal welfare and sustainability characteristics. Their emphasis is on producing healthy, wholesome and tasty pork, fed on a special natural diet comprised of corn and grain. Plantagenet Pork uses a composite breed of Landrace, Large White and Duroc pigs. This mix of bloodlines was chosen to promote hybrid vigour and a temperament well suited to the free-range production system. Pigs are sourced from farms located within 50km of the Plantagenet region in Western Australia.

Plantagenet Pork operate a comprehensive Hazard Analysis Critical Control Points (HACCP) based quality system which is independently audited and verified under the SQF 1000 program.

Plantagenet Pork claims to embrace sustainability at all levels, an example being that solar panels are used wherever possible to generate electricity and to minimize the use of grid electricity. In addition, grow-out farms such as Jon's are required to adopt a strict paddock rotation plan which involves resting and cropping phases so that nutrients deposited during the pig growing phase are utilised and not wasted. Bedding from the eco-shelters is composted and used on other areas of the farms or sold as natural fertilizer.



Szechuan-style pork steaks



Texas-style BBQ pork shoulder

Knowledge and Information Sharing

There are open lines of communication and a high level of information flow between Jon and Milnes. Contract growers like Jon provide Milnes with a weekly stock take report of pig movements and weight gain. This information helps Milnes coordinate processing activities.

Milnes tries to facilitate information sharing between its contract growers by hosting annual grower events, which also include bringing together pig breeders and finishers.

Milnes staff provide growers with veterinary support, and information on quality assurance and welfare. This includes the use of digital resources like I-Vet.

A key aspect of the relationship between Jon and Milnes is openness and transparency of information sharing. Jon has been willing to share his cost of production information with Milnes in order to negotiate fair contract prices.

The price of pigs that Jon has finished on his farm is calculated using a price matrix which identifies premiums and discounts according to product specifications. The matrix also covers key input costs. For Jon, it is important to produce pigs within specifications week-in week-out, so he can consistently supply Milnes and hence Coles with a reliable product. Jon has found that this style of pig production (working as a contractor) and business relationship provides security, as he is working with the support and expertise of the large Milne group.

Milnes find the contract model is ideal to support producers who are risk-averse and looking for diversification. Due to the control they are able to exercise over inputs, Milnes are able to offer

producers a margin that is less exposed to the normal fluctuations that are a feature of other pig and grains markets.

Key Lessons

There are a number of lessons from this case study that are relevant to the red meat industry. The key contributors to the success of the relationship between Jon Oldfield and Milnes include:

- **Competency** - A contract production based relationship requires a high level of supplier competency. The ability to consistently produce a high quality product has allowed Jon to establish a strong relationship with Milnes. He possesses the technical and managerial skills required to meet the formal requirements of Milnes and their customers.
- **Trust** - the relationship between Jon and Milnes is based on trust and the shared belief that through working together they can be rewarded through targeting a high-value market segment (free-range pork).
- **Role clarity** - the roles and objectives of the producer (Jon), marketer/ wholesaler (Milnes) and customer (Coles) are well defined and understood by each group.
- **Clear product specifications** - clear specifications at key stages (e.g. production and retail) and processes (e.g. feeding and animal health requirements) in the value chain encourage accountability and professionalism.
- **Regular monitoring and evaluation** - regular objective feedback provides useful information that can improve decision making. For example, feedback from Coles on product quality performance and technical advice from Milnes staff on animal nutrition allows Jon to seek continuous improvements in his production efficiency (e.g. % of pigs meeting weight requirements).

Case Study 2 – Branded Product - BEEF

Producer	John Bruce
Enterprise	Breeding and Fattening Cattle
Farm Size	586 hectares
Location	Stanley, North West Tasmania
Rainfall	812 mm/year
Processor	Greenhams Tasmania Pty Ltd.

Overview

The Producer

John Bruce has been breeding and fattening cattle for over 20 years as well as operating cropping and prime lamb enterprises. In the last 15 years, he has focused on producing cattle, expanding his land holdings, developing irrigation for fodder crops, and using rotational grazing to increase stocking rates. These changes have given the farm the capacity to support two families, with his son Ian working alongside him.

The Processor

The Greenham family have been involved in cattle processing over 6 generations. They established Greenham Tasmania Pty Ltd (Greenhams) in 2002 as an associated company of HW Greenham & Sons Pty Ltd (parent company) after purchasing the Blue Ribbon Meat Works in Smithton, North Western Tasmania. After originally focusing on sourcing cast-for-age dairy cows and bullocks, they discovered the local cattle quality was a lot higher than similar classes of stock available near their Tongala, Victoria abattoir. The company then made the decision to focus on prime cattle for high quality markets.

Enterprise

John Bruce runs 334 breeding cows and purchases 140 weaners, turning off 340 head each year. The cattle comprise a mix of British and European breeds including Angus, South Devon, Charolais and Murray Greys. His cattle are fed on a pasture base of ryegrass, clover, prairie grass, cocksfoot and lucerne.

John supplies 50-100 head of cattle at a time to Greenhams to be marketed under the Cape Grim brand in late winter to early spring each year. All cattle are raised hormone and antibiotic free.

John has a unique environment perfectly suited to high quality cattle production. The farm receives an average of 812 mm of rain a year and the region's moderate climate means there is little to no frost and temperatures rarely get above 25 degrees Celsius.

Value Chain Model

John, like the majority of Greenhams suppliers, is located within one hour of the processing plant. He has a healthy established relationship and regular contact with Peter Greenham Junior, Greenhams Managing Director in Tasmania.

John has been a member of a local Beef Improvement Group for over 30 years, following his father's footsteps (an original member and driver of the group). The group had sought to supply a processor at Longford, but following its sale, negotiations broke down. Following Greenhams purchase of the Smithton abattoir, the group began working directly with Peter Greenham Jnr and negotiated a regular supply agreement.

The Beef Improvement Group has been an important source information for John's business. The Group has been proactive in facilitating learning opportunities like Prograze courses, and ongoing business benchmarking. The knowledge gained from these opportunities has allowed John to understand his business in more detail. The Group has fostered a sense of collaboration and shared vision for its members. This has been fundamental to the relationship with Greenhams. For example, following encouragement from the Group, Greenhams decided to employ a Field Officer rather than an additional livestock buyer. The role of the Field Officer is to assist with cattle supply into the processing plant, while also helping producers to interpret carcass feedback sheets so that any carcass data that is relevant to farm management decisions can be extracted and utilised. This key role is seen by John as a long-term investment by Greenhams in building a strong relationship with its suppliers.

The adoption of Meat Standards Australian (MSA) grading has allowed Greenhams to target high-end markets, such as those in Korea. Cuts that don't meet MSA requirements are marketed under the Green Natural Brand.

Greenhams also differentiate their product by not allowing any use of antibiotics, hormonal growth promotants (HGP) or animal by-products in feed. The antibiotic and hormone free status facilitates access to high value markets in the US which is an important and expanding opportunity for the company. Suppliers to Greenhams are also required to comply to an audited program of Animal welfare requirements (the Global Animal Partnership (GAP) 5-Step™ Animal Welfare Ratings Standards for Beef Cattle).

Greenhams works with producer groups (such as John's Beef Improvement Group) and MLA to educate producers about the MSA system. Six monthly or annual workshops are held to explain MSA, including how information is presented on kill sheets and how payments are made.

Marketing Strategy

Greenhams market John's beef under the Cape Grim brand. This brand attracts high prices in Australia as well as the USA, Japan, Brazil, Chile, Hong Kong, Singapore and the Maldives. The various certification programs mentioned above underpin the brands clean, green and ethically produced marketing credentials.

Greenhams also use some regional branding, such as the Cape Grim regions claim to have the cleanest air and rain in the world. Due to his proximity to the processing plant John hosts regular visits (every 2-3 weeks) from Greenhams customers. These visits have given John the opportunity to better understand market requirements. The visits have also provided customers with a chance to better understand how cattle are raised as well as experiencing some of the physical aspects of North West Tasmania that are used in the regional branding of Cape Grim Beef.

Knowledge and Information Sharing

The quantity and quality of information exchange is one of the key features of the relationship between Greenhams and its suppliers. Greenhams deliver information to their producers through a variety of means.

1. Kill sheets are provided for each animal, typically the afternoon following slaughter. The timeliness of this information combined with prompt payments helps to build trust with suppliers.
2. A quarterly newsletter is circulated to suppliers outlining what is happening at an operational level at the plant and the company.
3. Greenhams write a column for the Tasmanian Country newspaper, which informs producers about the international and domestic markets and the general outlook for cattle markets.
4. Greenhams helps facilitate producer group meetings to share information on pasture and feeding management and other production issues that will assist the production of a more consistent animals being sent to be processed.

In general, Greenhams have found that the more feedback a producer gets the better they want to perform. This is a win-win for supplier and processor. For example, supplying information on MSA grading has led to more consistent carcass quality which has flowed on to increased premiums paid to suppliers. Greenhams are currently investigating the potential of digital platforms to further improve information flow to suppliers.

John has a long history of being involved with local carcass competitions. Being situated in close proximity to the processing plant has given him the opportunity to see his animals processed, and the opportunity to speak with the graders and learn about the carcass characteristics they are looking for. John feels that a key factor in this is the smaller scale of the abattoir, which has allowed facilities and staff to be more accessible. John has a close relationship with Greenhams

livestock buyers, who appraise each animal before they are sent to the abattoir. Buyers also assist with logistics, and help link cattle breeders with finishers.

Key Lessons

There are a number of lessons from this case study that are relevant to the red meat industry. The key contributors to the success of the relationship between John Bruce and Greenhams include:

- **Long-term attitude** - both producer and processor are committed to their relationship and have a shared vision about producing premium quality beef.
- **Trust** - there is a strong personal relationship between John and Greenhams staff.
- **Knowledge sharing** - John is a member of a producer group, which meets regularly to share insight on production and business management issues. The cooperative culture of the group has helped suppliers like John build strong relationships with Greenhams. This is further reinforced by Greenhams hiring a field services officer to work with suppliers.
- **Feedback** - a key feature of this relationship is Greenhams' commitment to providing timely and relevant feedback to suppliers on their cattle performance. Kill sheets containing information about performance against the MSA index are sent to suppliers the day after cattle are slaughtered.
- **Incentives** - Greenhams works with its suppliers to explain how its payments are calculated, including what is needed to receive bonus payments.
- **Premium product** - the Cape Grim brand is targeted at high-end Australian and international markets. Premium prices help attract and retain suppliers.

Case study 3 - Integrated production and marketing operation – direct to food service - GOAT

Producer	Joanne and Craig Stewart
Enterprise	Cereal Cropping, Beef cattle and Boer Goats
Farm Size	1500 hectares
Location	Collie, North West of Dubbo, Central West NSW
Rainfall	525mm

Overview

Craig and Joanne Stewart operate a mixed farming enterprise on 1500 hectares in the Collie District of NSW (north-west of Dubbo). Their enterprise includes 400-500ha of crops, 90-100 breeding cows and 500 Boer does.

The Stewarts experience with goats began when they purchased a Boer goat for their daughter. Joanne discovered that she enjoyed raising goats and soon made the transition from running goats as pets to a commercial operation.

Enterprise

The Stewarts goat herd consists of around 500 Boer does. Boer goats have been chosen because the breed was developed specifically for meat. The breed is renowned for high fertility, high growth rates, a high yielding carcass, and meat that is low in saturated fat and cholesterol.

Joanne and Craig operate their farm business together, but Joanne takes the lead with the goat enterprise. This includes organizing the breeding program, weighing goats, developing relationships with other goat producers, butchers, bakeries, restaurants and chefs, and selling product at farmers' markets. Meat is marketed under the 'Gourmet Goat Lady' brand, which has been successful in winning 12 Sydney Royal Fine Food Show medals.

Value Chain Model

One of the main motivations behind the Stewarts decision to establish an integrated goat production and marketing business was their frustration with low margins for their cattle. During a holiday, Craig noted the high price gap between the retail prices paid for beef sold at a butcher shop and the prices he received as a producer.

After seeking help from a farm consultant and conducting their own desktop research, the Stewarts saw an opportunity to supply Boer goat meat direct to consumers. Initially the Stewarts

relied on orders from friends in the Italian community in Sydney. With inconsistent demand Joanne decided to investigate other options. Joanne headed to Sydney with three packets of farmed goat meat sausages and approached potential retailers including David Jones. While in Sydney Joanne visited MLA, where staff provided advice on developing a brand. At this point the decision was made to establish the Gourmet Goat Lady brand, a nickname that had previously been given to Joanne at local farmers' markets. Prior to this the product was marketed under the BV Fresh brand, a reference to the family's 'Buena Vista' farm name. With their new branding the Stewarts were invited by MLA to participate in the Food Services Australia conference, where they were overrun with enquiries for their product.

The Stewarts are very active in promoting their product, and regularly visit retailers and consumers to discuss how their meat is produced. Their goal is to continue to grow their business and produce the finest goat meat in Australia. They would like to help turn farmed goatmeat into a staple food for Australian families.

The Stewarts have their goats processed at Nyngan, approximately 120km from their farm. The product is then transported around 570km to Sydney. As a small and boutique supplier, the Stewarts face a number of challenges with their supply chain. Key challenges have included sourcing reliable transport for live goats to Nyngan as well as transporting their meat to delivery points in Sydney. The Stewarts rely on contract delivery drivers and have experienced issues with product being sent to the wrong retailers. They have considered purchasing a truck to make deliveries to Sydney, but see the time and costs involved as prohibitive. Another key challenge is organizing processing. The Stewarts are very happy with the current service they receive at the abattoir in Nyngan. However, previously they experienced challenges with other abattoirs who were unable or unwilling to process their small lines of goats.

Marketing Strategy

"As a small, family farm business, we're committed to developing strong partnerships with our customers." Gourmet Goat Lady website

The Gourmet Goat Lady Brand sells to providores, restaurants, cafés, retailers as well as individual customers.



The Stewarts have focused on a niche high-end segment of the market. Goatmeat is branded under the terms Cabrito, Capretto and Chevon. These are different cultural and age related names for goatmeat:

- **Cabrito & Capretto:** Young milk-fed kid goat with a carcass weight between 6 and 12kg. The meat is pale pink in colour, very tender and mild in flavour. Premium quality Cabrito (Spanish term) or Capretto (Italian term) is highly desired in traditional Italian, Spanish and Greek cuisine. Capretto is a seasonal product and is only available from September to December each year.
- **Chevon:** This (French) term describes prime farmed 'young goat', not more than two-tooth and with no male secondary sexual characteristics. The meat is a slightly redder and the animal is larger than Cabrito or Capretto. Good quality farmed Chevon is also tender, juicy and flavoursome. Chevon is available all year with a maximum age of 16 months.

Meat is sold as whole or half carcasses, or in individual cuts. Certain customers, such as restaurants, prefer the whole carcass. To add value to secondary cuts the Stewarts have developed a range of other products including; goat sausages (flavours include honey mustard, sundried tomato and basil, and Mediterranean), goat mini-balls (flavours include lime and chilli, rosemary and pine nut, and Rendang curry), goat burgers, goat pies, prepared meals (goat curry and goat lasagne) and speciality products like goat prosciutto and smoked goat leg.

Knowledge and Information Sharing

The Stewarts have been able to gain a lot of information from consumers about their product, including feedback obtained at farmers markets. A challenge to their business is the lack of information they receive from processors about their product quality. The Stewarts only receive very basic information about carcass weight, which limits their ability to make on-farm decisions to improve their product quality. This reflects a broader challenge in the goat industry about a lack of industry standards and systems in the goat industry.

Key Lessons

There are a number of lessons from this case study that are relevant to the wider red meat industry. The key contributors to the success of the Gourmet Goat Lady brand are:

- **Niche product-** farmed goat meat is a niche product that can attract high prices. The Stewarts have been able to successfully target market segments, including sections of the community (e.g. Italian-Australians) who value goat meat. Another key to their success is in value-adding to lower value meat cuts through new product recipes (e.g. sausage range).
- **Direct contact with retailers and consumers-** the Stewarts regularly meet with retailers and consumers, including at farmers' markets. This direct contact has been important in their brand promotion and in educating consumers about their product. It has also helped them gain market feedback on new product varieties.

- **Willingness to learn-** the Stewarts have been very open to seeking advice to improve their business. This includes seeking on-farm management advice and marketing advice from MLA.

Case study 4 – Integrated production and marketing operation, retail supply and export markets (B2B) - BEEF

Producer	McDonald Family
Enterprise	Cattle
Farm Size	Total holdings 3,592,254 ha
Location	Various – from Cape York Peninsula to Western Darling Downs QLD
Rainfall	350-1000 mm

Overview

MDH Pty Ltd (MDH) is a large integrated beef cattle business owned by the McDonald family with operations spanning cattle breeding, backgrounding, feedlotting, and beef retailing. The McDonald family has a rich history within the cattle industry, dating back to 1827. The current aggregation of properties was founded by the late A.J. (Jim) McDonald in the 1940's. The head office and beef marketing division is based on Devoncourt Station near Clonclurry.

In recent years MDH purchased the Super Butcher chain of retail butchers in south-east Queensland, which allow them to sell branded beef produced on the family's properties. MDH is now one of the largest paddock-to-plate beef producers in the country.



Enterprise

MDH runs arounds 175,000 head of cattle across eleven cattle stations, an irrigated farm, and a feedlot on the Darling Downs. The properties (see map) are described below:



A map of MDH's properties

The geographical spread of MDH cattle stations provides economies of scale and scope. This allows MDH to reduce production risks (e.g. drought induced destocking) and tailor their production system to environmental conditions. MDH's cattle stations have complementary roles, with some properties specialising in breeding, while others are used to background cattle before they enter the company's feedlot. For example, MDH's cattle stations in the Gulf of Carpentaria (Rutland Plains and Dunbar) carry predominately breeding cattle, whose progeny are then transported south to properties near Cloncurry (e.g. Brightlands, Chatsworth, Devoncourt and Stradbroke) for backgrounding before entering the Wallumba feedlot. The property Nangram, located near Condamine and adjoining the Wallumba feedlot, is primarily used as a farming property, with nine centre pivots (irrigation) used to produce forage sorghum and silage for the feedlot.

Value Chain Model

MDH is a large integrated beef cattle business with operations spanning cattle breeding, backgrounding, feedlotting, and beef retailing. The company's initial strategy of horizontal integration - the purchase of geographically dispersed cattle stations- has evolved towards vertical integration. The company is now involved in large-scale feedlotting and beef retailing. Given its scale the company has been able to form strategic partnerships at key points in the supply chain. MDH has formed a strategic partnership with the large Brazilian-owned meat processor JBS, who process MDH cattle at their Dinmore facility. In recent years, MDH expanded its reach into beef retailing. MDH became the major shareholder and is now the sole

owner of the Super Butcher retail chain. This has allowed MDH to become a paddock-to-plate beef enterprise.

Knowledge and Information Sharing

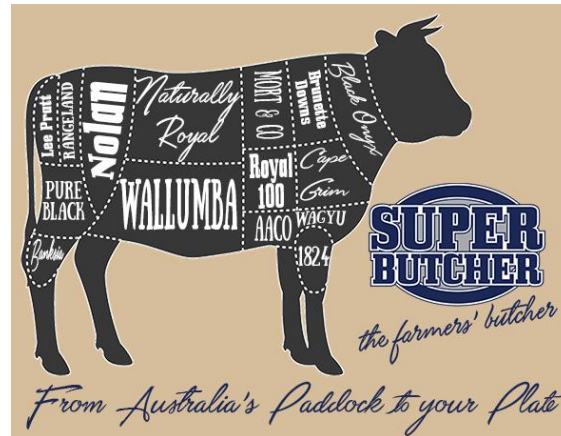
The traceability of livestock is critical for MDH to manage cattle on its extensive stations. It is also critical for meeting the strict food safety, welfare and quality standards that underpin its retail beef brands. Information on stock numbers and their condition is essential to enable MDH to plan its feedlotting schedule. MDH works closely with JBS to coordinate logistics and details regarding beef cut specifications, packing, and loadout requirements. Information collected on carcass performance is used to improve production decisions, including identifying genetics that maximize retail meat yield and eating quality.

Marketing Strategy

MDH have direct input into each step in the process between paddock and plate. In 2008 MDH developed three brands; 'Wallumba Premium Beef', 'Alexander' and 'Wallumba'. All beef for these brands is 100-day grain fed, sourced from MDH's AUS-MEAT and AQIS-accredited 'Wallumba' feedlot. To be marketed under these brands, the beef must meet assessment criteria such as P8 fat depth, meat colour and fat colour. The animals must have also passed dentition and ossification assessments. To ensure high eating quality all meat is aged for a minimum of 21 days. This process allows the meat to develop flavour and texture whilst guaranteeing each piece of meat will be tender.



MDH owns the Super Butcher chain of 6 retail outlets located in South East Queensland. Beef is sourced from MDH's branded beef lines, as well as other branded beef suppliers. In addition to selling beef the stores sell a wide range of lamb, poultry and pork, as well as cheese, wine and condiments.



Key Lessons

There are a number of lessons arising from this case study that are relevant to the wider red meat industry. The key contributors to the success of MDH are:

- **Economies of scale and scope** - the large scale and scope of the McDonald family's cattle production ensures consistent turnoff of cattle. Horizontal integration of cattle properties (e.g. breeding, backgrounding, and fattening) helps reduce the impact of climate shocks like drought, while vertical integration (feedlotting, processing, and retailing) helps capture the benefits of value-adding.
- **Strategic Partnerships** - MDH have established a strong partnership with JBS' processing facility at Dinmore. The large and consistent throughput of MDH cattle helps JBS manage one of its key challenges - securing consistent supply. MDH have also invested significantly in the Super Butcher network of retail outlets, which has given the company strong access to the domestic market.
- **Traceability** - the integrated nature of their supply chain and the focus on cattle traceability helps MDH to coordinate supply. Control of key stages in the supply chain helps with the collection of data to improve decision-making in a range of areas, including the relationship between cattle genetics and beef eating quality.
- **Branding strategy**- the development of beef brands has helped MDH differentiate itself from its competitors and gain access to premium markets. The decision to focus on branded beef has reduced the company's reliance on volatile markets for live cattle, e.g. live cattle exports.

Case study 5 - Integrated production and marketing operation, consumer direct supply (B2C) - LAMB

Producer	Hayes family
Enterprise	Lamb
Farm Size	Collaboration between separate farm businesses.
Location	Riverina, NSW
Rainfall	400 – 700 mm

Background

The Hayes family have developed the Mirrool Creek Lamb brand, marketing high-quality lamb sourced from the NSW Riverina to consumers in Sydney. The family had been farming in the NSW Riverina for over 125 years. While still farming (the farm was sold six years ago) the family decided to move from selling sheep via agents to selling lamb directly to end consumers. The Hayes family knew they had a high quality product and were motivated to promote this to consumers and capture more value for their product.



The Facts



- ✓ MSA GRADED
- ✓ GRASS FED
- ✓ RIVERINA PRODUCED
- ✓ DRY AGED 7 DAYS
- ✓ NATURALLY GROWN
- ✓ AVERAGE 22-24KG, FAT SCORE 3
- ✓ CHEMICAL AND HORMONE FREE
- ✓ "SONNING BRED" COMPOSITE LAMBS
- ✓ STRICT LOW STRESS HANDLING

Value Chain Model

Mirrool Creek Lamb is a family business owned by the Hayes family. Bill Hayes works with selected properties in the NSW Riverina who supply lambs for the brand. To ensure product quality and consistency there are strict product specifications for lamb (e.g. Average 22-24kg carcass weight, fat score 3) and all lamb must meet MSA requirements. Bill liaises with a processing facility to oversee the processing, boning and packaging stages. Bill's daughter Sam lives in Sydney and is responsible for developing relationships with customers (farmers' markets, specialty stores, and individuals) and product distribution. This model gives the family control over key processes from paddock to plate and allows them to market a premium product in to high-end customers in Sydney.

One of the biggest ongoing challenges facing their business is competing with larger lamb distributors who have greater bargaining power (for purchasing live sheep) and lower distribution costs. Larger distributors are able to opportunistically market specific cuts, which might be in short-term over-supply (i.e. lower cost). In contrast, Mirrool Creek Lamb face the challenge of maximising the selling price of all cuts (i.e. finding customers for the whole lamb). Larger distributors also tend to have stronger relationships with abattoirs because of the size of their business.

The Hayes family have been successful in developing a strong position in the competitive market for premium lamb, but urge caution for prospective businesses. They suggest the effort and expertise required to develop a direct-to-market business model is very difficult for most farmers to attain on their own, particularly because of the time they would be required to spend away from the farm. They also note that a direct-to-market business model is more or less attractive depending on prevailing market and seasonal conditions. For example, they suggest that current high saleyard prices for lamb and mutton mean many producers are less interested in selling direct to consumers.

Marketing Strategy

Mirrool Creek Lamb is sold as vacuum packed lamb direct to approximately 40-50 foodservice outlets in Sydney. These include the specialty chains Whole Foods House (Waterloo and Woolhara) and About Life (Rozelle, Double Bay, Cammeray, and Bondi Junction). Lamb is also sold at farmers' markets (Eveleigh Market, North Sydney Produce Markets, and the Entertainment Quarter Produce Market).

The brand's key selling points are its premium quality and consistency. The Hayes work with a group of producers to ensure their lamb meets consistent size and quality specifications throughout the year. For their food service markets product consistency is key. The Hayes family have spent years developing relationships with producers and customers. This includes proving their value proposition to producers in the form of price premiums for their lamb. The family have also engaged in targeted marketing activities, such as visiting restaurants to provide product

samples and using social media platforms to convey their messages about quality and consistency. Mirrool Creek Lamb is Halal certified and the product packaging includes a description of the sheep breed (typically composite meat breeds). Another key product attribute is that lamb is also dry-aged for five days before cutting. The Hayes family noted that MSA (Meat Standards Australia) is not an important selling point for customers and that there is less understanding of MSA in lamb than beef.

The Hayes family believe one of the biggest challenges for their business is being competitive on price. When negotiating contracts, they feel price is generally the determining factor. They have found that they are often competing against poor quality lamb, but sometimes lose out because buyers are predominantly focused on price.

Knowledge and Information Sharing

The Hayes family believe a close relationship with their customers is essential to their business. They are able to gain feedback from customers almost daily. Because they are responsible for product deliveries they have the chance to hear first-hand from customers in their kitchens. This was particularly useful when they were first developing their brand and deciding which products they should focus on. Given they are targeting a high-end segment of the market and promoting a premium quality product the Hayes family believe further information to differentiate their product would help. In particular, more information about MSA and the determinants of eating quality in lamb could make it easier for producers to directly market their product to consumers.

Key Lessons

There are a number of lessons from this case study that are relevant to the wider red meat industry. The key contributors to the success of Mirrool Creek Lamb are:

- **Market Presence-** The Hayes family found that there was high-level of time and expertise required to develop a direct to market business. Having a physical presence in their key market, Sydney, has allowed Mirrool Creek Lamb to develop strong relationships with customers. This has helped them meet with prospective customers and gain regular feedback (see below).
- **Direct contact with customers-** the Hayes family regularly meet with retailers and consumers, including at farmers' markets. This direct contact has been important in their brand promotion and getting feedback on product requirements.
- **Differentiated product based on quality-** the retail lamb sector is highly competitive and smaller distributors face challenges establishing a position in the market. Product price is a major influence Mirrool Creek Lamb has a number of important selling points which reflect the quality of the product (e.g. MSA graded, dry aged, and sourced from properties using low stress stock handling techniques) and its provenance (sourced from the Mirrool Creek region of the NSW Riverina).

Observations from Case Studies

The five case studies discussed in this report reflect the diverse range of models for value chain collaboration that are possible in the Australian red meat industry. Each business has different motivations and factors influencing why and how they are participating more directly in the value chain.

Despite the differences, there are some common characteristics that appear to contribute to the success of these case studies. Key lessons identified include:

- **Competency** - becoming more directly involved in a value chain requires certain technical and managerial skills, and marketing knowledge. There is an important role for education, training and extension providers to play in helping producers to engage more directly in the value chain.
- **Willingness to learn** - becoming more directly involved in the value chain requires an openness and interest in the possibility of adopting new production and selling practices. This essentially comes down to the personal motivation of individuals and businesses.
- **Trust** - close personal relationships in which there is a mutual understanding of the benefits of collaboration are fundamental to value chains.
- **Clear product specifications** - clear specifications at key stages (e.g. production and retail) and processes (e.g. feeding and animal health requirements) in the value chain encourage accountability and professionalism.
- **Well defined strategic goals** - a common feature in all five case studies was that businesses had clearly defined strategic goals, which included both production and marketing aspects of their business.
- **Information sharing** - the flow of consistent, timely and relevant information helps businesses plan and adapt to changing market requirements.
- **Regular monitoring and evaluation** - regular objective feedback provides useful information that can improve decision making. For example, feedback from processors on product quality performance (e.g. MSA grading) can help producers target continuous improvements through on-farm changes (e.g. genetics).
- **Price certainty and price premiums** - many producers were attracted to developing closer relationships with their customers because of the attraction of higher and/or more stable prices.
- **Branding and marketing strategies** - branding helps a business to differentiate its products from competitors and target certain market segments.
- **Fulfilment** - many producers feel that greater involvement in the value chain has given them the satisfaction of taking greater control of their product and developing stronger relationships with their customers.

Implications for MLA

This section discusses the implications for MLA of key observations arising from the case studies. As alternative value chain models continue to emerge and evolve there are likely to be implications for the way MLA invests in its R&D, marketing and industry integrity programs. Based on observations from the literature review and case studies the following discussion considers how some of MLA's current investment priorities are likely to enable or limit value chain collaboration. The key implications discussed are:

- Enhanced market information services
- Tailoring extension services to business needs
- Investments to enable objective carcass measurement
- MLA's Digital Value Strategy
- Marketing activities to facilitate alternative value chain models

There is considerable overlap between these activities, which reflects the cross-cutting issues affecting value chains.

Enhanced market information services

Relevant market information is critical to any red meat business. Producing livestock that more precisely meets market and customer specifications can help a business to maximize its profitability, and accurate, relevant and timely market information is a critical requirement in order to achieve this. The recent launch of the 'myMLA' portal on the MLA website has the potential to improve the way producers access market information, and consequently make informed marketing decisions. myMLA provides login point for integrity, information and quality assurance programs, allowing for NLIS, LPA, MSA and LDL to be accessed with one username and password.

The other key feature of myMLA is enhanced access to market information. myMLA provides a personalised online dashboard offering customised and relevant information based on a user's location and enterprise. This includes allowing users to choose relevant daily price indicators that appear on their dashboard, such as the EYCI, WYCI, weekly slaughter, over-the-hooks, saleyard, store, skin, AuctionsPlus and feeder cattle reports. It also includes information such as local weather forecasts, industry news, and upcoming local events.

This service is likely to be of interest to producers with traditional supply chain models, including those who market livestock through saleyards, other auctions, and over-the-hooks. These market reports, derived from data collected by the National Livestock Reporting Service, provide useful general information about market trends.

However, because they report prices in an aggregate format (i.e. average prices or a weighted indicator) they are less relevant to those seeking to understand the price trends affecting specific cattle condition and quality characteristics. This issue was identified by the ACCC in their 2016

Beef and Cattle Market Study, which suggested that there was insufficient industry reporting of information to enable an analysis of beef margins and profits. The ACCC also highlighted the lack of price transparency across the supply chain. For example, there is limited information about beef prices paid by wholesalers and margins for retail beef.

In the future, there is likely to be a growing demand from producers for precise and specific market reporting, as value chain models continue to evolve and technologies like Objective Carcase Measurement lead to potential changes in beef payment methods. The challenge for MLA will be to maintain its resource-intensive current market reporting activities (e.g. NLRS) while encouraging more consistent price feedback from processors to producers.

Tailoring extension services to meet business needs

A key message from the study’s participants is that participating in a shorter (or collaborative) value chain requires certain technical and managerial skills. This includes having well defined business objectives, marketing strategies, and quality management systems. There are a number of implications for MLA’s investments in research, development, and extension. This includes the need for educational and training resources that support business management.

There are several MLA resources currently available that assist red meat producers interested in greater participation in the value chain, including those listed in the table below.

MLA marketing resources for producers	
Beef	<ul style="list-style-type: none"> • More Beef From Pastures: The producer’s manual. Chapter 8: Meeting market specifications • MLA beef information kit • EDGENetwork training course
Lamb	<ul style="list-style-type: none"> • Making More From Sheep manual. Chapter 3: Market focused lamb and sheepmeat production
Sheepmeat	<ul style="list-style-type: none"> • Making More From Sheep manual. Chapter 3: Market focused lamb and sheepmeat production • MLA lamb information kit
Goat	<ul style="list-style-type: none"> • Going into Goats. Chapter 8: Marketing • Goats on the move e-newsletter
Further information: https://www.mla.com.au/research-and-development/preparing-for-market/understanding-market-specifications/	

There is potential for MLA to leverage existing resources through initiatives such as the myMLA portal. There are also opportunities to explore other information delivery methods.

MLA has recently trialed the Profitable Grazing Systems program. This program is said to reflect a shift in the way MLA has traditionally delivered R&D extension and adoption.

The program builds on MLA's best practice packages of information, tools and events, with an emphasis on encouraging producers to try new ideas on-farm and to use specialist coaches providing longer-term support and guidance. The program will focus on topics known to drive profit in red meat production, including business and people management, genetics and reproduction, feedbase, and being an effective contributor to the value chain.

The ultimate aim is to support producers to make on-farm changes which will drive productivity and profitability and have measurable and tangible impacts. There is a strong focus on the use of data to inform decision-making:

“The aim is for producers to measure, monitor and manage key business performance indicators and be more confident to make decisions which are informed by data they generate as part of their management systems.” (MLA website)

Investments to enable objective carcass measurement

All five case studies involved to some extent the use of a marketing strategy based on product differentiation and quality. Objective data at the processing level has the potential to improve on-farm decision-making and ensure product quality is consistently achieved.

Relative to other meats such as pork and poultry, there is significant variation in the quality of individual beef, lamb and goat carcasses. The ability to measure key carcass characteristics provides the red meat industry with an important opportunity reduce or better understand variability, and to increase productivity and profitability. Objective carcass measurement refers to the processes and technologies that have the potential to be used to better measure carcass attributes to predict eating quality, disease or contamination, precise boning cutting lines, and lean meat yield (MLA Donor Company, 2015).

A key challenge for MLA is to encourage processors to use consistent reporting frameworks based on objective carcass measurement. Objective carcass measurement has the potential to facilitate information flow that will benefit commodity-focused supply chains, but particularly those targeting high-value market segments.

Many processors are already installing technologies which use skeletal measurements to guide manual and robotic cutting. However, processors still have to estimate (or not measure at all) eating quality characteristics and lean meat yield of carcasses, which can mean lost value.

The ability to fully measure carcass traits would enable processors to provide information to producers which could help them:

- better understand the value drivers of their livestock
- adjust animal husbandry practices to optimise returns based on accurate carcass feedback

- improve genetic gain based on more accurate technical feedback
- use more effective price signals to optimise their livestock offerings,

At the same time, such information would enable processors to:

- better meet customer requirements
- streamline processing and allow full automation of some manual tasks
- provide more accurate feedback to producers and the supply chain
- improve allocation of carcasses to most profitable markets
- ensure maximum yield from each carcass. (MLA Donor Company, 2015)

To realise these benefits there is a need for support programs and systems that encourage information flow, while protecting product traceability and integrity. One of the key challenges facing businesses seeking to develop shorter value chains or a marketing strategy based on red meat quality is a reliance on inconsistent and complex carcass information. Currently there is a lack of trust in the systems that are used to transfer information from processing plant to farm. As the ACCC (2016) summarized:

"The ACCC considers that the general lack of trust in the integrity of the OTH system is a serious issue as this method of sale is arguably the most important price determination process in the industry. If producers do not have confidence in the information available to make decisions in response to competing price offers and market demands, then the overall efficiency of the cattle market is reduced, and an economic cost is imposed on the entire industry."

Digital value chain strategy

The use of digital technologies and data-driven decision-making were key themes observed in the case studies. In 2016, MLA instigated the development of a red meat 'Value Chain Digital Strategy'. This strategy aims to enable the capture, integration and interpretation of data generated within the livestock industry through a range of new technologies. The strategy is designed to empower participants at every point in the value chain through data-driven decision making. The strategy is also considering cultural factors which will impact the way technology and innovations are adopted. The vision of the strategy is: *"By 2025, value chain stakeholders are connected through open sharing of data, utilising the world's best digital technology."*

This strategy has the potential to encourage new and innovative business models at all stages in the value chain, particularly if it is able to increase the sharing of data between participants.

Marketing activities to facilitate new value chain models

MLA makes substantial investments in building demand for Australian red meat in domestic and international markets. These investments benefit all red meat producers and have been shown to

lead to increases in the value and volume of beef sales in a range of markets. MLA's core marketing activities include:

- increasing market access,
- improving competitive advantage, and
- building demand for Australian red meat.

The domestic marketing campaign aims to stimulate demand for red meat in Australia through influencing consumer attitudes, building confidence in the quality and integrity of the product, and enhancing the appeal of meat products by promoting them as nutritious, delicious and easy-to-prepare meals. The international marketing campaign is focused on defending and improving market access for Australian red meat, by promoting Australia's clean, natural image and reputation as a reliable supplier of safe, high quality red meat.

MLA's marketing activities are predominantly focused at the retail level. For example, this includes marketing campaigns targeted at increasing consumer demand for red meat (e.g. television and print media advertising), and activities such as the Australian Butchers' Guild to promote red meat in wholesale and retail markets. The rationale behind targeted investments at the retail level is that it will lead to the flow on effect of higher prices across the supply chain, and ultimately lift the farmgate price of livestock. There is evidence to suggest that MLA's marketing activities have been highly successful. For example, activities to promote lamb have seen the Australia Day week in January go from being one of the lowest volume sales weeks for lamb to being the highest-selling sales week. These generic marketing activities have led to increases in lamb prices across the board.

Given the growing interest in food provenance by consumers there is merit in considering how new strategies could be adopted to help assist producers pursuing shorter or collaborative value chain models. One of the challenges of this approach would be to ensure benefits are shared by all levy payers. In other words, providing direct assistance to some businesses, but not others, could be perceived as unfair. A more practical and acceptable approach might be to enhance extension activities that have the effect of helping producers develop their own marketing strategies that complement industry wide/ generic marketing strategies. For example, MLA could develop resources/ materials that help producers who are considering developing their own branded product and/or direct-to-market business model.

Discussion and Conclusion

The main factors that influenced producers in the five case studies to participate more directly in value chains were;

- increased price certainty,
- premium prices,
- relationship quality, and
- the intrinsic pride associated with promoting their product.

This is consistent with findings from New Zealand (see Lees and Nuthall, 2015). Some suppliers wanted to break away from traditional supply chain relationships in an effort to reduce price (and income) volatility associated with commodity price cycles. There was also a sense that traditional commodity supply chain models lead to a disconnection between producer and consumer. An important factor driving this is perceptions of product quality. For all five case studies, producers perceived the quality of their product to be high and felt they should be rewarded (paid) for the superior quality of their product.

It is difficult to quantify the economic value of closer value chain relationships. As noted above, there are some direct benefits such as price stability and price premiums that attract producers and processors to develop collaborative business models. Given the costs that are often associated with high-value products, it is potentially misleading to simply focus on price premiums. Similarly, it is not easy to place a value on price certainty from longer term supply relationships.

Trust is arguably the most critical factor in an integrated or collaborative business relationship. In several of the case studies it was clear that the openness or willingness to share information is a reflection of the strength of a relationship.

There are a number of other intangible values that appear to be important for value chain collaboration. A common theme in all five case studies was that producers valued their relationship with the companies they supplied. In part, this is due to the recognition that these relationships are often important to gaining access to premium markets. The value of a personal connection to their buyer seems to motivate many producers to develop ongoing relationships with their processor or consumers.

This individual motivation is also reflected in the horizontal collaboration between groups of producers. The development of a shared vision, sense of belonging, and recognition of the potential benefits of collectively marketing their product has helped producer groups in north-west Tasmania benefit from the success of the premium Cape Grim brand. In this example, the willingness of cattle producers to collaborate (rather than compete) was recognized by Greenhams, who in turn have made significant investments in the relationship e.g. through the employment of a field services officer.

There are a range of benefits for producers in developing closer relationships with their customers. Improvements in the quality and consistency of information that come with developing ongoing relationships can help producers make better on-farm decisions. In each of the cases there are examples of information from processors or customers being used to implement changes in production practices, resulting in productivity improvements or higher prices. For many of the producers surveyed the confidence gained from developing longer-term relationships with their customers has given them the confidence to make long-term on farm investments, such as expanding production through the purchase of new land.

There are formal and informal factors that are important to supply chain relationships. Formal factors include contracts and product specifications, such as quality assurance programs. Informal factors are less tangible and include trust and personal motivation.

Livestock producer participation in value chains typically involves producers entering into some form of contractual agreement with downstream chain participants, with an obligation to deliver a specified number of livestock of a defined quality on a particular date or dates. Many of these chains impose accreditation and certification requirements on the farmers who choose to be involved, in exchange for promises of preferential access to higher value markets.

Accreditation or certification requirements typically involve an obligation to provide comprehensive production information including veterinary product and agrichemical use, some other production information (such as non-use of HGP), and commonly to commit to the forward delivery of livestock on the basis of closely specified price grids that impose price penalties for out-of-specification delivery.

For broadacre livestock producers in particular, the requirements that are inherent in the direct participation in a value chain can seem onerous, because of the climatic and production uncertainty associated with such farming. There may also be the perception that such arrangements bring benefits for the post-farm participants in a value chain (by way of improving the certainty associated with livestock supply and price) but do not deliver benefits of the same magnitude to livestock producers.

Technology has an important role in enabling value chain collaboration, particularly in terms of improving information flow between producers and processors. Within beef and lamb value chains in Australia, the growing availability of objective carcass performance data has increased the potential for farmers to obtain much more detailed information about the performance of their livestock than has ever been the case in the past, and at an ever-reducing cost. This creates the potential to fine tune genetics and nutrition to more closely target specific market requirements, to alter management systems (such as the timing of lambing or calving) to optimise market opportunities, and to engage in collaborative relationships with other participants in value chains.

The case studies demonstrate that it is possible for value chains based on committed long-term relationships to develop in Australia. It is unlikely that closer value chains will completely

replace more traditional commodity based value chains. The Australian red meat industry is a large, fragmented, diverse and complex industry. It is influenced by domestic factors, but given its reliance on exports is also shaped by global factors. Integrated or collaborative value chain models require trust, communication and incentives to align the interests of producers and their product buyers. For each of the case studies examined these relationships necessitate different resources and capabilities. This makes it difficult to replicate individual value chains, however, the common factors underlying their success can be encouraged.

Appendix 1.

Scope and definitions

The review of available academic literature relevant to the topic of this research will be limited to publications over the past five years, with a particular focus on Australian, New Zealand and Canadian publications.

It is projected that the case-study interviews will be conducted with five individual livestock producers. These will be selected on the basis of consultations and discussions with relevant industry personnel including MLA and meat processors. The five will be selected to ensure that examples of different red meat species will be included in the research, and also that the research involves value chains associated with both domestic and international markets.

It is anticipated that the interviews will be conducted by telephone or skype, and would not require a visit to the farm in question.

This will make it easier to ensure that there are a number of different geographical regions included in the sample, including northern, southern and western parts of Australia.

Methodology

The proposed research will consist of two main elements. The first will be a desk-top review of relevant recent research that has been conducted in the past which seeks to identify the value for participants in value chains – with a specific focus on red meat chains. Based on preliminary reviews, it appears that the most relevant research has been conducted in the New Zealand and Canadian markets, although there is also a considerable body of academic research available associated with both the US and EU markets.

The second component of the research will be a series of in-depth interviews of livestock producers who are currently direct participants in red-meat value chains. These interviews will be supplemented with interviews of other relevant participants in the value-chains in which those livestock producers are involved, in order to gain a comprehensive picture of the perspectives of all participants in the specific value chain.

The above methodology appears most appropriate to this particular subject area, because of the fact that it is difficult to design research that would produce a quantitative assessment of the value of direct supply chain participation. This is due to the wide range of different factors that can impact on the benefits associated with a particular business arrangement, and the mix of both tangible and intangible benefits that may be available from such arrangements. It is also likely that these benefits may vary between different supply chains, and also over time, further complicating any quantitative assessment of such arrangements.

The findings arising from available academic research will be written up in a summary document, and will also be used to develop a relevant discussion framework for interviews to be conducted with a limited number of livestock producers who are current participants in red-meat value chains. The selection of participants in this part of the research will be guided by information gleaned from the academic studies, but it is anticipated that minimum criteria will be that participation in a value chain has extended for a number of years (potentially at least five) and that participation also accounts for a significant proportion of the total output of the relevant livestock operation.

The interviews with the livestock producers will be supplemented with interviews of other participants in each of the specific value chains, in order to gain a wider perspective of the advantages and challenges for all participants involved in these arrangements. The perspectives of those other than livestock producers should be of benefit, in that they will provide a deeper understanding of specific issues and why particular arrangements are put in place.

Information derived from the interviews will be written up in relatively long-form interview style, with the targeted audience being other livestock producers and value chain participants. It is projected that each interview will result in a 2,500 to 3,000-word document, including relevant observations from other upstream participants in each value chain.

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