Ashley Sweeting
University of Tasmania
Australian Grass-fed Beef Value Chain Analysis

Value Chain Analysis for Australian Grass-fed Beef Production

Executive Summary

This paper is aimed to give an insight into the potential opportunities and challenges within the grass-fed beef industry. Increased global demand for protein, especially with increased wealth in Asia provides opportunities for the Australian beef industry. The disease free status and traceability of Australian beef along with efficient production methods and the clean green image of Australian agriculture provide opportunities to add further value to the Australian beef industry. Grassfed beef has the potential to be marketed as healthier, tastier and more environmentally friendly beef and this study aims to examine how that value can be captured.

This paper will especially focus on the physical supply chain, communications and collaboration, governance and where value is generated.

Traditionally high levels of opportunism by both processors and producers have categorised the Australian grass-fed beef industry with the uncertainty created by the constant threat of drought in Australia exacerbating the negative impact of opportunism on the industry. A lack of collaboration and communication amongst value chain participants has led to opposing boom and bust cycles for producers and processors.

The Australian beef industry has long production lead times, price uncertainty, low margins and a highly variable supply and quality of primary inputs (pasture) providing valuable opportunities for participants prepared to collaborate. The benefits of improved collaboration are visible when looking at a number of companies who have development higher value premium products such as certified grass-fed, organic and breed specific beef. These companies have created greater value and reduced price and climatic uncertainty throughout the value chain through better integration and communication from producer to consumer through both collaboration and vertical integration. In addition these innovative companies have focused on creating value from the entire animal and not just the prime cuts.

Background of the Australian Beef Industry

Australia is the seventh largest beef producer in the world and the third largest exporter behind the USA and Brazil. Australia has 26.7 million cattle run over more than 77,000 properties. In 2014 8.3 million head will be slaughtered, 67% for export, at an average carcass weight of 276kg/head. A further 1.13 million cattle are forecast to be live

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exports. Australian cattle are virtually all bred and grown on pasture. In 2013 67% of marketed cattle in Australia were grass fed with just 33% fed grain. Only a small percentage of grass-fed cattle are marketed as certified grass-fed. The Australian beef industry is valued at $12.3 billion annually.

The Australian cattle industry operates in a liberalised environment where producers often have to compete in the international market against subsidised producers. Efficient production processes as well as producing a superior quality product allow Australian producers to compete successfully on these terms.

The Australian cattle industry is divided into two primary regions, north and south. The northern industry is more extensive, accounting for 75% of the land area and 50% of cattle numbers. Northern cattle are typically lower quality due to both the higher percentage of tropical or Bos indicus breeds in the north and variable nutrition. Northern cattle are usually sold through the live export trade or transported south where they are finished on grain. The southern industry is more intensive and typically produces higher quality beef from British and European, Bos taurus, breeds. Southern cattle are finished both on grass and grain. Southern producers are more likely to be smaller and family owned whereas northern producers are larger and often corporate.

Australians beef cattle properties are generally large and geographically isolated with significant distances to processors and consumers. This distance is even greater for the 67% of Australian beef that is exported. This greater distance acts a barrier to effective and efficient communications and exchange of information between the producers and processors at one end of the value chain and the consumers at the other end. The distances involved also limit producers selling options as additional freight costs often outweigh any price premium they may receive from a different processor.

Regular droughts throughout Australia have a major impact on beef production and cattle numbers. Farmers generally build up herds during periods of good rainfall then reduce cattle numbers during periods of drought. Cattle marketed during good seasons tend to be heavier than those marketed for slaughter during droughts. Droughts also increase the numbers of cattle traded unfinished, both creating a cattle market between producers and adding lower quality beef onto the market. The unpredictability of where and when droughts will occur and how severe they will be carries through to an unpredictability of the supply and quality of cattle being marketed. Market prices also tend to follow the drought pattern with higher prices during wet periods and low cattle prices during droughts.

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Droughts generally affect different geographic locations and cattle are regularly traded from drought affected areas to areas that have had good rainfall.

Grass-fed Beef Production
Grass-fed beef is one of the more complex value chains that exist in contemporary agriculture. The production process aims to produce a consistent product from a continually varying source of inputs. Pasture quality and quantity is continually changing with pasture growth rates, quality and quantity varying with stage of growth, soil moisture, season, hours of sunlight, temperature, soil nutrient levels, species, altitude and grazing management amongst other factors. Producers have limited control over much pasture growth variation, especially in the rain fed production systems that make up most of Australia's grazing land. Managing pasture and cattle to regularly and consistently supply a market with high quality beef remains one of the greatest challenges for producers. Grass fed cattle are also kept in open paddocks where they are exposes to weather, pests and diseases all of which can effect production and add to the challenge of producing a regular supply of high quality beef from a continually varying production system. In contrast, with housed or lotfed animal production systems there is much greater control of the animals nutrition, environment and animal health making the growth rates and the production process much more predictable.

The cycle time to grow and fatten beef cattle is much longer than other animal protein production systems. The average age at slaughter for Australian cattle is 15-22 months and female cows will produce their first calf at two year of age. Breeding cows only produce one offspring per year. This results in a three to four year lead-time for producers to increase production which is too slow for producers to adapt to the Australian recurrent drought cycle and hence the availability of pasture. This means that many cattle farmers often have the wrong stocking rate for the current climatic conditions.

Cattle growth rate is determined largely by nutrition. In feedlots nutrition and growth rates are tightly controlled and monitored to optimise efficiency and growth rates are highly predictable. This means producers can time production to meet market demand. In grass-fed situations animal nutrition is determined by the quality and quantity of available pasture, which is continually changing. This means that growth rates are variable and it is much more difficult to manage production to meet market demand.

Beef competes on the market with other animal proteins many of which convert feed into meat more efficiently than cattle. The feed conversion ratios, how much feed is required to produce 1Kg of live weight, are higher for beef (5.5-15) than for pigs (3.0-4.0) and poultry (1.7-2.0). However, pigs and poultry compete with humans for feed

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grain. Grass fed beef has a competitive advantage in that it is produced from pasture, which is indigestible by humans and hence doe not compete with people. Cattle often graze land that is unsuitable for other crops so that beef production is an important source of food produced from otherwise unproductive land.

While finished cattle, ready for slaughter, are the primary source of income for many cattle producers, they also sell store cattle as well as cull cows and bulls. The store cattle market allows producers to manage seasonal and climatic variability in pasture production by changing stocking rates to meet pasture growth. The cull cow and bull market is a source of cheaper, lower quality beef that is largely used for processing. Revenue from store and cull cattle sales form an important part of farm income.

Cattle producers have many systems available for selling their livestock. Prices paid will be based on carcass weight, liveweight or per head depending on the system used. Traditionally, cattle were sold through auction in saleyards which involved the producer transporting cattle to the saleyards and then the buyers transporting cattle on to be processed, adding an additional link to the chain and ensuring producers are price takers. Increasingly cattle are sold direct to the processor, in these cases producers are paid on a carcass weight basis. However, saleyard auctions are still widely used today. The direct marketing of cattle provides producers much better feedback on the carcass value of their cattle, enabling them to adjust management practices to provide a higher quality product. Saleyards provide very limited feedback on the carcass traits to producers. Another disadvantage of saleyards is quality of the final product is likely to be affected due to increased stress and time off feed.

Grass-fed Beef Processing

Large corporations dominate the Australian beef processing industry. These corporations often use their substantial market power to ensure most producers are price takers and their economies of scale make it difficult for smaller processors to compete which limits selling options for many producers. In 2011 the top five processors accounted for over 50% of the market with the four largest either owned or in joint ventures with multi-national companies. Individual abattoirs are generally primarily for domestic or export and as the different markets are governed by different standards. These large producers all have grass-fed or organic brands. However, the majority of their brands are either undefined or grain fed. Grass-fed is seen as a premium brand along with organic, which is also grass-fed, and premium grain-fed or brands based on specified high quality breeds such as certified Angus or Wagyu. Smaller processing companies are also competing in market niches such as certified grass-fed and organic.

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Beef processors increasingly purchase cattle direct from the producers and producers are generally able to lock into contracts 4-6 months in advance. However, this time period falls well short of the 18-24 months it takes to grow and finish cattle and the additional two year lead time required to increase breeding female numbers. Many large beef processors also own and run beef feedlots.

The slaughter and processing stage of the beef value chain has the potential to greatly reduce value if not done properly. Excellent hygiene, maintenance of the cold chain and stress free handling of cattle prior to slaughter are all required to prevent contamination, spoilage and loss in meat quality. Poor boning will also lead to a lower percentage of prime cuts and a greater percentage of lower value trim. Whilst value can very easily be lost during processing it is difficult to add value during this stage.

Beef processors sell whole carcasses, boxed beef as well as all the other parts of the animal. The most obvious product produced from beef cattle is meat. Cattle carcasses will typically be 48-56% of live weight depending on age sex, fat score and time off pasture. The yield of meat from a carcass is typically in the range of 67-77%. This means meat forms between and 32 and 43% of the live animal. Processors sell all parts of the animal and the contribution of the non-meat parts of the animal such as bones, skins, offal and tallow are crucial to a processors business. See figure 1 below for what products are produced by beef cattle. The meat component of a carcass is also divided into prime cuts and trim with the prime cuts having a higher value than the trim. When producers are paid on a carcass weight basis, which is increasingly the case there is a misalignment between how processors pay growers and how processors make money.

Figure 1: Products produced when cattle are slaughtered

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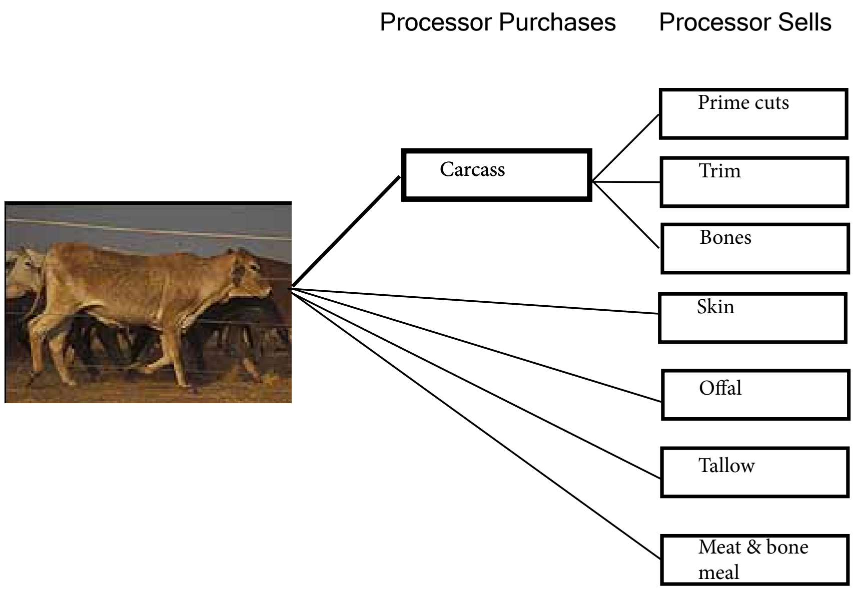

Good quality prime cuts of beef are in high demand and can be sold at high prices. Generating value out of the trim is one of the key challenges for processors. Traditionally trim has been used for sausages, hamburgers and other processed meat products. Obtaining the market premiums from the trim and no carcass parts of the animal is especially a challenge with premium products such as certified grass-fed and organic where processors have paid a premium for the entire animal and will often lose money if they can only get the premium for the prime cuts. While prime cuts such as steak are seen as the highest value and most sought after cuts of beef they are not the most highly consumed. More than twice as much ground beef is consumed than steak in the USA, (Lowe & Gereffi, 2009). See figure 2 below for the breakdown of US beef consumption by cut.

Australian beef processors are generally specialised to cater for either the domestic market or the export market. Export facilities require different certification than domestic facilities and larger cattle are generally sold for export.

Figure 2: US Beef consumption by cuts (Lowe & Gereffi, 2009)

Ground	42%
Steak	20%
Stew	13%
Processed	13%
Beef dishes	7%

Other cuts	5%

Grass-fed Beef Wholesaling and Retailing

In the domestic market the two major supermarkets dominate the retail trade in Australia. Beef is also sold through butchers, other supermarkets and grocery stores, wholesalers as well as restaurants and cafes. The export market, which accounts for 67% of Australian beef production, consists of over 150 Australian beef exporters, all with their own brands and competing against each other as well as other international suppliers according to MLA. There is an increasing presence of smaller boutique beef brands.

Beef is primarily consumed at home rather than in restaurants making supermarkets and butchers the major sellers of beef to consumers. In the USA 65% of beef is consumed at home with 35% consumed in away from home, (Lowe & Gereffi, 2009).

All beef is initially graded according to a number of Australian and international standards as set out in the Handbook of Australian Meat published by Aus-Meat Limited. These standards grade beef according to a number of quality related traits including the cut, age and sex and fat depth. These standards also specify the labelling requirements including the tractability information, country of origin, date processed, weight and company who packed the product. Aus-Meat has also developed further quality standards that include Pasturefed Cattle Assurance Scheme (PCAS) to guarantee grass-fed production and the Meat Standards Australia (MSA) certification that guarantees eating quality. MSA beef carcasses are graded on the proportion of Bos indicus breed, maturity, marbling, meat colour and pH and fat distribution. Producers of MSA beef are required to certify cattle are handled to minimise stress prior to slaughter as pre slaughter stress has a negative impact on meat eating quality. Producers can obtain the MSA grading for their animals by viewing them online.

A number of companies have their own individual certifications. Teys, Australians second largest processor, is paying a premium for PCAS certified cattle whereas JBS, Australia’s largest processor has their own grass-fed certification for their Great Southern brand. All these different certifications makes it much more difficult for producers to supply multiple processors with certified beef as they require multiple certifications and audits.

Organic certification is the strictest and most difficult to obtain as it is a three year process and there are different certifications for different markets such as the USA and EU.

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These standards and certifications add value to the beef that is produced through them. Consumers pay premiums for certified beef and producers receive premiums for producing certified cattle.

Opportunism in the Beef Industry

Grass fed cattle production has traditionally been a highly opportunistic industry for both producers and processors with climatic variables, especially rainfall, being a large driver of this opportunism. Producers plan to capitalise on good years to make enough money to carry them through the years of drought. Producers often shop around and sell to the processor with the best price, which limits the building and maintaining of relationships between producers and processors.

In wet seasons producers maximise weight gains from pasture and build up breeding numbers, which results in selling fewer and heavier cattle. Because all producers are following this strategy there are fewer cattle in the market and prices are generally higher. An abundance of pasture also drives up demand for store cattle to utilise this pasture further pushing up prices. Processors struggle during these times, as fewer available cattle drive up processing costs and those available are more expensive.

In dry times these fortunes are reversed with processors traditionally doing well and producers struggling. Producers destock as pasture growth declines resulting in a higher volumes of cattle on the market at lower prices. This provides an abundant supply of cheap cattle to processors.

Whilst producers and processors are heavily reliant on each other to run their businesses they frequently see the other as an adversary. It is not uncommon to hear or producers booking cattle into a number of processors weeks in advance then calling around the day before shipment to see which offers the highest price. Likewise as processors have the market power and set prices they will reduce prices when market conditions allow, often forcing producers to sell at very thin margins. These practices further erode trust between producers and processors.

With over 77,000 beef producers, around 100 processors throughout Australia and the options of trading through saleyards there is an abundant supply of alternative buyers and suppliers. The adversary between producers and processors limits communication and collaboration. During good seasons producers are trying to make sufficient profit to

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ensure they can survive the next dry period and during dry seasons processors are concentrating on making sufficient profit so they can survive the next wet season.

Consumer demand for beef and the other products from cattle is not highly dependant on these climatic fluxes. Domestic and international consumers of Australian grass-fed beef are very removed from the cyclical drought cycle Australian farmers have to manage with the geographic isolation of cattle properties increasing the lack of connection between producers and consumers.

A company that behaves opportunistically to increase short-term unilateral gain can often erode long-term potential gains for both parties. The three mechanisms to mitigate opportunisms are ownership, investment in transaction specific assets and relational exchange (Brown, Dev & Lee 2000). In the beef industry the opportunities to reduce opportunistic behaviour are primarily in ownership and relational exchange.

Governance in the Grass-fed Beef Value Chain

Beef is a supply driven and buyer dominant market with market power concentrated in the large processors and retailers that dominate the industry. Beef producers have traditionally been price takers rather than price setters. Producer power has been limited to the occasional times of scare supply. Traditionally producers have also been fiercely independent and resistant to sharing resources, information or innovative production practices. This has resulted in beef production becoming a production push, commodity focused industry rather than a market-focused consumer driven industry with little vertical integration or coordination. Producers operate with a high degree of uncertainty and high input costs. Producers often have a lack of information and knowledge on current market trends and the power imbalance with processors and retailers leads to opportunistic behaviour. (Uddin, Islam & Quaddus, 2011)

The saleyard auctions markets have the lowest level of coordination, and vertical integration the highest with direct sales and contract sales in between. The auction market is characterised by self interest, short term relationships, opportunism, limited information sharing, independence and flexibility. Vertical integration is characterised by mutual interest, long term relationships, shared benefits, open information sharing, interdependence and stability. (Uddin, Islam & Quaddus, 2011). Vertical coordination is increasing in the industry with greater use of short and long term contracts for supply. Vertical coordination is also increasing in a number of innovative companies supplying premium products such as certified grass-fed, organic and breed specific beef.

Power Structures

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Power in the beef industry is asymmetrical with power concentrated in the retailers and processors. Australia's two largest supermarkets dominate the domestic industry to an extent that they can dominate market prices. The large export processors dominate the export market providing some competition to the supermarket's power. Producer power is traditionally low and limited to periods of insufficient supply. Increased vertical coordination is a possible means of creating more value for producers as can producing niche products such as grass-fed, high value breed, organic, HGP and antibiotic free.

Supply Chain Relationships

Uddin, Islam & Quaddus (2011) found that amount of mutual investment and interdependence among supply chain partners in the Queensland and Western Australian beef industry was very low and the levels of trust and commitment were moderately high. In the domestic market retailers have the highest switching capacity where they maintain multiple wholesale sources of supply and purchase on price.

The successful development and marketing of higher value products such as grass-fed, organic, Angus and Wagyu require better relationships and improved cooperation within the value chain. Consumers are prepared to pay premiums for these higher value products and expect regular availability and consistent quality.

Producers have relationships and trade store cattle with many other producers. These store cattle trades can be either direct sales or through the saleyards and are generally based on adjusting stocking rates to meet available pasture. Most producers also have relationships with a number of processors to whom they sell cattle either directly or through the saleyards. Hundreds of producers will supply most processors and this is a buyer dominant market where the producers have very little bargaining power. Domestic processors will generally supply the two major supermarkets that dominate the domestic beef market. Export processors will then supply a limited number of export customers. A smaller number of specialty processors exist whom supply specialty retailers. These specialty processors are often the ones who process the higher value customers.

Figure 3 shows the high concentration of processors and retailers in the beef industry and how many producers supply a limited number of processors who supply a limited number of retailers.

Figure 3: Schematic of relationships within the beef value chain

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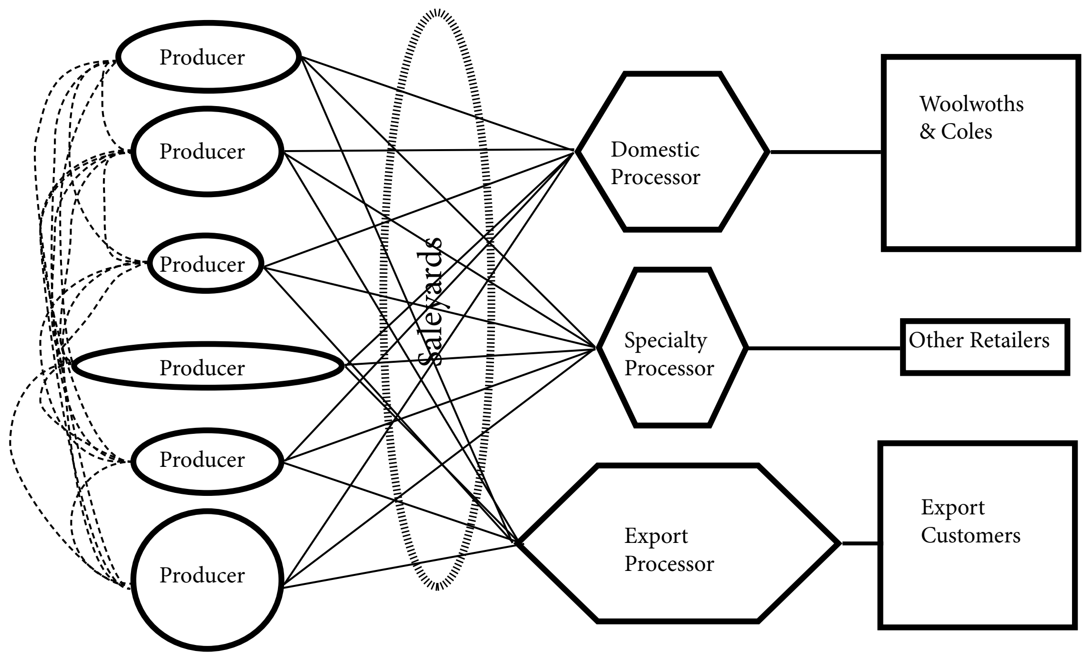

Information Sharing in the Beef Value Chain

A significant difference in information sharing exists between producers and processors and between processors and retailers. Processors collect and utilise greater amounts of data about their products such as origin, genetics and meat quality characteristics. Producer and retailer market and customer information is much less likely to be shared due to the short-term opportunism that exists in the low cost conventional marketplace.

The Value of Grass-fed Beef

Consumers are increasingly seeing grass-fed beef as a healthier, tastier and more environmentally friendly option. Grass-fed beef is leaner, has a healthier fat profile and is produced in a more natural and animal friendly way than grain-fed beef. Animal welfare is considered by consumers to be better for grass-fed cattle than lot-fed cattle. Many consumers are willing to pay premiums for improved taste, health, environmental and animal welfare conditions. Grass-fed beef is generally marketed organic grass-fed or certified grass-fed beef. Organic grass-fed beef is produced on a certified organic farm, that is without any chemical fertilisers, antibiotics, hormone growth promotants (HGP)

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and other non organic inputs. It takes a minimum of three years for a farm to obtain organic certification.

The Pasturefed Cattle Assurance Scheme (PCAS) is the Australian grass-fed certification. PCAS certification includes two additional modules for being antibiotic and HGP free. PCAS certified beef guarantees consumers that cattle have not been fed any grain or grain by-products. A number of other certified grass-fed schemes exist. Many consumers see certified grass-fed as a means of obtaining many of the benefits of organic without having to pay the high premium prices for organic beef. In contrast grain-fed production systems generally involve cattle being kept in feedlots with no opportunities to graze. Antibiotics and HGPs are also widely used in feedlots.

Premium labels and beef products are increasing being sold in the domestic market. In April 2014 Woolworths introduced premium grass-fed beef into its stores prompting Australia's second largest beef processor, Teys Australia, to announce premiums for certified grass-fed cattle. Teys also started locking in contracts for cattle four months in advance (McKilop, 2014).

JBS has developed its own brand of certified grass-fed beef under it's own accreditation scheme.

Premiums Paid for Domestic Grass-fed and Organic Beef

The prices shown in Table 1 are the premiums consumers are willing to pay for grass-fed and organic beef over the standard products. Consumers are paying premiums for grass-fed and organic beef for both high value cuts and lower value products such as mince and stirfry. The prices paid and premiums for organic are similar for both major retailers. Consumers are willing to pay even higher premiums for beef purchased through specialty retailers. The prices below were sourced form the shop online webpages of the three retailers listed below which were viewed online on 25 November 2014.

Table 1: Premiums paid for grass-fed and organic beef

	Coles			**Woolworths**			**Harris Farm**		**Yalandra Fine Foods**
	Organic	**Grass-fed**	**Standard**	**Organic**	**Grass-fed**	**Standard**	**Belmore Organic**	**Argyle**	
Eye fillet	45.99	45.00	41.00	45.99	N/A online	41.79	55.99	47.99	54.99-65.99
Mince	16.00	N/A online	5.00-14.00	14.99-19.98	N/A online	5.00-14.00	19.99	14.99	13.00
Rump	28.00	19.00	17.00	25.99	N/A online	15.99	N/A online	28.99	23.99

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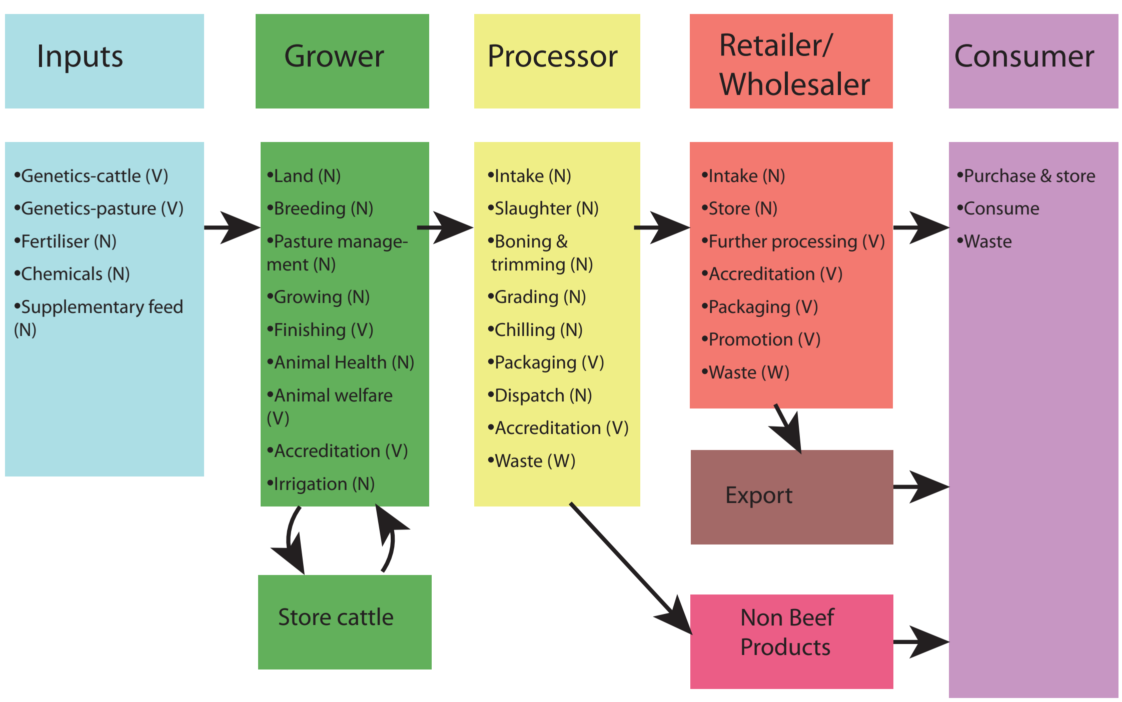
Stirfry	19.00	18.00	17.00	18.99	N/A online	17.35	N/A online	N/A online	14.99
Porterhouse	35.00	32.00	27.00	N/A online	N/A online	22.99	44.99	N/A online	N/A online

The Value Chain

The flow of materials through the grass-fed beef value chain, as outlined in Figure 4, is linear with the exception of the store cattle market, which is used throughout the industry to help manage climatic and seasonal pasture growth variations. The non-beef products that are produced from cattle also create value for processors but are frequently not directly paid for when cattle are sold on a carcass weight basis. As with many agri-food products beef has been a production push commodity where producers have been price takers. Value for consumers was determined by the cut of beef they purchased rather than the method of production.

Beef is a functional product that requires an efficient value chain and whilst certified grass-fed and organic beef is a more innovative product it still essentially requires an efficient supply chain.

Figure 4: Material flow in the grass-fed beef value chain



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V - Creates Value
N - Essential but does not create value
W - Waste
To capture grass-fed beef value an efficient, consistent and reliable supply chain need to be built to provide a regular supply of well-finished high quality beef to consumers. The areas where value is added to the chain are:

- Cattle genetics
- Pasture genetics
- The natural grazing and production system free of antibiotics, HGPs and grain feeding
- Improved animal welfare
- Certified production process
- Further processing of lower value trim
- Packaging and marketing

There is significant potential to lose value with the essential but non value adding links in the chain and these tasks need to be carried out efficiently and effectively to produce a high value product.

<u>Cattle genetics</u>
The genetics of the cattle influence the eating quality of the meat including tenderness, juiciness, level of marbling and flavour. Genetics also play an important role in the cattle's ability to adapt to and produce high quality beef under Australian grazing conditions.

<u>Pasture genetics</u>
The pasture cattle graze will affect the flavour and fat colour of the meat.

<u>The natural grazing and production system free of antibiotics, HGPs and grain feeding</u>
Consumers value food they know is safe that has been produced in a natural way without additives, hormones and antibiotics. Many consumers see grain feeding as being unnatural.

<u>Improved animal welfare</u>
Many consumers value the way animals have been treated prior to slaughter and believe cattle should be out grazing pasture and walking around freely rather than housed in feedlots.

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Certified production process
The certification process gives consumers the confidence to pay a premium for grass-fed beef as it guarantees that they are getting the product they expect.

Further processing of lower value trim
Creating additional value from the lower value parts of the animal enables greater total value to be captured by the chain.

Packaging and marketing
The packaging and marketing of certified grass-fed and organic beef allows consumers to know that they are selecting a premium product with the health, welfare, environmental and taste benefits.

Case Studies of Grass-fed Beef Participants

This analysis of the grass-fed beef value chain is based on a case study of the following companies:

- Arcadian Organic and Natural Meat Company – Alister Ferguson (CEO) and Peter Gall (Livestock Manager)
- Braemar Investments Pty. Ltd – Ian Scholes (Owner)
- Argyle Prestige Meats – Lachlan Graham (Owner & Operator)
- Teys Australia – Geoff Teys (Executive Director, Livestock)
- Applegate Organic and Natural Meat – Chris Ely (Co-Founder)
- Mulawarra Export Pty Ltd – Greg Darwell (Managing Director)
- Gralyn Santa Gertrudis – Matt Windrum (Owner)
- MLA – Robert Barker (Market Specialist-North America; Middle East/North Africa)
- Yalandra Fine Foods – Scott Giltrap (Owner)

Interviews were conducted with all of these companies.

Arcadian Organic and Natural Meat Company

Arcadian Organic and Natural Meat Company has grown to be Australia's largest supplier of organic beef, which is 100% grass-fed. The company saw an opportunity to market organic beef back in 2005 and started butchering 66 head of cattle every fortnight from a single farm. They now have over 120 suppliers with over 100,000 cattle. Demand currently outstrips supply and finding and retaining new organically certified

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suppliers is one of Arcadian's key focuses. Arcadian is supplying the domestic market and exporting to North America and Asia. Arcadian's aim is to produce high quality sustainable beef. Arcadian's business has consistently be growing by over 30% each year and they are constantly looking for more producers so they can satisfy existing customer demand.

Arcadian has attributed its success to two major factors. Cooperation within the value chain both up stream and down stream and marketing as much of the animal as possible for the organic premium. When Arcadian started selling organic beef they easily found markets for the prime cuts but struggled to obtain the premium paid for organic meat for the trim and other parts of the animal.

Physical Chain

Arcadian sources all its organic beef from certified organic producers located in Queensland and Northern NSW. Arcadian natural beef is sources from grazing properties in Tasmania. All cattle are processed on contract, packaged and shipped to domestic and export retailers. Arcadian supplies the major Australian supermarkets, specialty retailers and restaurants domestically. The USA is Arcadians most important export market where they supply customers such as Wholefoods, Applegate Natural and Organic Meat and Costco. Arcadian also exports to Asia. Different cuts of meat, trim and the non-carcass parts of the animal are all marketed to where they obtain the greatest value. Arcadian beef comes from a variety of breeds all of which have been bred to produce high quality beef and perform well under the local climatic conditions. Having the right breed for local conditions is especially important for organic production, as producers are not able to use artificial chemicals to control pests and diseases and enhance growth.

Communications & Collaboration

Arcadian has strong relationships with all its suppliers and works closely with them to manage cattle supply so they can meet customer demand. Producing a regular supply of well-finished high quality cattle is one on the greatest challenges with grass-fed beef and having a regular supply to meet customer expectations is vital. To manage supply Arcadian facilitates the sale of store cattle between its supplies and uses the geographic distribution of suppliers farms to help stabilise production. Producers with excess pasture are put in contact with producers with insufficient pasture. Arcadian does not charge for this service but views it as a means of managing short term and long term

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supply. Short term in that cattle already on the ground are grown and finished efficiently and long term in that Arcadian relies on network of profitable producers to supply the company. Arcadian also provides technical assistance and advice for potential suppliers going through the three-year organic accreditation process.

Down stream Arcadian works closely with customers to ensure their products are meeting expectations. Arcadian is careful not to over promise and undersupply its customers. Currently demand for organic beef outstrips supply and Arcadian can sell all the product it can source and is actively looking for additional producers. However, the company is very aware that reliability of supply is critical to the value of its brand and the businesses of its customers. Therefore, Arcadian is very proactive in keeping its customers well informed about any potential changes with the supply of their products.

Arcadian has limited direct contact with consumers. However, Arcadian's primary customers with whom they have strong relationships do have direct contact with consumers and the trust built between these customers and Arcadian means that important and relevant information is shared throughout the value chain.

Governance

In accordance with rural Australian tradition, Arcadian works on handshake agreements with it suppliers. Their philosophy is that building trust is the key to good relationships. Formal contracts exist with customers and contract processors. However, the same philosophy of building trust applies. Arcadian pays their producers premiums for supplying organic cattle and also provides their suppliers much more price certainty than they would get through traditional cattle marketing systems. This gives producers the confidence they need produce the regular supply of high quality well finished cattle Arcadian need. Increased price certainty reduces opportunistic selling behaviour by producers.

Where Arcadian builds value

The organic and natural certification builds significant value for Arcadian, as consumers are willing to pay premiums for organic and naturally reared grass-fed beef. Proactive management of the entire chain and collaboration with suppliers and customers is how Arcadian captures this value. The development of reliable export sales to US customers for trim and non-prime cuts has enabled Arcadian to obtain the organic premium for more to the animal.

Applegate Organic and Natural Meat

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Applegate Natural and Organic Meats is a US meat further processor. Applegate produces and sells natural and organic burgers, hot dogs, sausages and other further processed meats. Applegate states is mission as to change the way we eat meat and markets its products as a healthy way to eat meat where you aren't afraid to read the ingredients list. Applegate focuses on value adding the lower value parts of the carcass, which is primarily trim. Arcadian is a major supplier of organic and natural beef to Applegate.

Physical Chain

Applegate purchases organic and natural beef to be further processed into burgers and hotdogs. Applegate is unable to source sufficient grass-fed and organic beef from domestically in the US and relies on the export market to provide the shortfall with the majority of its beef coming from Arcadian in Australia and Uruguay. Wholefoods is Applegate's largest customer and Applegate is actively looking for suppliers to meet increased demand. Applegate produces an organic and a natural range of products.

Communications & Collaboration

Communication is key to Applegate's success and they have strong relationships with both suppliers and customers. Applegate regularly visits all suppliers and work with them to manage supply. Applegate has collaborated with smaller US processors who are unable to compete to move to organic production where they are competitive. Applegate has a strong relationship with Arcadian and they constantly work together to manage supply.

Applegate regularly has teams in stores running demonstrations to introduce their products and connect with consumers. Relevant consumer information is then past back down the chain.

Governance

Applegate has a 12-month commitment with all suppliers. Applegate now has formal contracts with suppliers and customers. However, for the first 20 years the company operated on handshake agreements.

Where Applegate builds value

Applegate selects trustworthy suppliers to provide them with a reliable supply of trim, the lower value parts of the carcass which processors often struggle to find a premium market for. Applegate then further processes the trim to add value and then sells it into premium organic and natural markets.

Braemar Investments Pty Ltd

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Braemar run 5,000 breeding cows and up to 13,000 head of cattle across six properties centred around Blackall in Western Queensland. Braemar has been organic certified for the last 12 years. The extensive cattle operation Braemar were running was almost organic and they believed in the organic principles so gaining organic certification was relatively straightforward. Organic certification has had minimal impact on production levels. The geographic diversity of the six properties provides Braemar with some drought protection.

The long term trusting relationship Braemar has established with Arcadian, which includes much greater price certainty and an organic premium has given Braemar the confidence to expand their business, maintain production during dry times and then capitalise on times of good pasture growth. The long-term trust ultimately gives Braemar the confidence to better manage Australia's unpredictable wet and dry climatic cycles.

Physical Chain

Braemar is an organic beef cattle producer who breed, grow and finish cattle on extensive grazing properties in Western Queensland. Braemar purchase supplementary feed in times of drought for which they pay an organic premium. Braemar also purchases organic certified store cattle and Bulls. Braemar stock Droughtmaster cattle bred to perform under local conditions. Braemar sell over 95% of cattle either directly through Arcadian or as store cattle to other Arcadian suppliers. Arcadian processes the cattle and sells the beef to its domestic and export customers.

Communications & Collaboration

Braemar is in regular contact with Arcadian, at least once a week, to manage supply and any other issues. Forecasts of when cattle will be finished, the pasture availability and Arcadian's need for cattle are all discussed and any required changes to production agreed upon mutually. Other issues are discussed openly and dealt with collaboratively. The trust, loyalty and regular contact between Braemar and Arcadian is fundamental to the success of the business.

Arcadian organises field trips and dinners with its customers, which provides value feedback to producers such as Braemar and further builds trust within the value chain.

Governance

There is no formal contact between Braemar and Arcadian and according to Ian Scholes, Braemar's owner this actually helps build trust.

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Where Braemar Builds Value

Braemar believes that traditionally the value of organic beef was largely based on the certification. However, as over time the predictability of eating quality of organic beef has greatly improved such that it is graded in a conventional way. The additional benefits for organic beef consumers are safe food that is guaranteed chemical free and produced with good animal welfare.

Teys Australia

Teys is Australia's second largest beef processor, currently slaughtering 35,000 animals per week with 94% of these purchased direct from farms and 6% through saleyards. Teys Australia was formed in 2011 as a joint venture between Teys Brothers and US owned Cargill Beef Australia. Teys has 130,000 cattle on grain in feedlots of which the company owns 50%. The cattle Teys processes are 10% PCAS certified grass-fed, 20% grain-fed and 70% uncertified grass-fed with a premium being paid for PCAS certified cattle. Teys views accredited grass-fed beef as satisfying most of the organic beef requirements for consumers at a lower premium. Teys also market MSA yearling beef as a higher value product for which they also pay a premium. Teys is looking for more PCAS certified producers to further grow their certified grass-fed business.

Physical Chain

Teys pays producers a premium for PCAS certified beef and also offers longer-term supply contracts. Otherwise Teys operates their certified grass-fed value chain in a similar way as their standard beef value chain. Cattle are sourced from across eastern Australia from northern Queensland to South Australia from certified farmers. Teys processes and markets beef from all breeds of cattle and grades the beef and then sells it to the appropriate domestic or export market. Teys use geographic diversity to spread supply and manage climatic risk in their supply chain and has increased the forward contract from 4 to 6 months for PCAS accredited beef to help manage supply. Teys has been actively developing a premium market for certified grass-fed trim, most of which is going to the USA for grass-fed natural burgers. For their grain-fed business Teys owns and operates a number of feedlots in eastern Australia. For their non certified grass-fed business Teys purchases widely from producers throughout eastern Australia and markets the beef to domestic and export customers.

Communications & Collaboration

Teys has very good relationships with their customers and this is the part of the value chain where there is the greatest communication and collaboration. Following an announcement by Woolworths to sell certified grass fed beef in April 2014 Teys announced it would pay a market premium to ensure it can meet the increased demand

(McKilop, 2014). Teys buys the majority, 94%, of their cattle direct from producers, which requires a much stronger relationship and better communication than the traditional purchase through the saleyards. Teys usually offers 100 day contracts for the supply of cattle. However, due to increased demand Teys initially offered 4 month forward contracts, which have now been extended, to 6 month for PCAS certified cattle.

Governance

The major incentive for producers to supply Teys is the $0.5-1.0/Kg premium paid to PCAS certified producers. Teys uses this premium to manage cattle supply. Teys does not directly partner with producers to obtain PCAS accreditation, rather they refer potential suppliers to the Cattle Council of Australia or agents. Teys invests significant resources in researching and predicting future Australian beef herd numbers and maintains a data bank on the expected numbers and grading, including the geographic locations, throughout the industry.

Where Teys Builds Value

Teys is a very efficient and effective beef processor and marketer. They have access to a wide geographically dispersed network of potential suppliers to source cattle from and a wide network of domestic and export customers to market to. As Australia's second largest beef processor Teys has significant market power, which it uses to manage cattle supply from producers and sales to customers.

Teys has been involved in the PCAS accreditation process from the beginning.

Argyle Prestige Meats

Argyle Prestige Meats started processing and marketing their beef in 2006 following frustration at constantly being a price taker. Prior to this Argyle was a beef producer and Angus Stud. Argyle has vertically integrated their supply chain to capture the value of their Angus genetics. In December 2013 Argyle formed a 50/50 joint venture with The Manildra Group, which involved expanding their operation with additional land and a larger processing plant on the NSW South Coast, adding greater capacity and geographic diversity to their production system. Argyle markets their beef as MSA accredited, grass-fed, Angus, antibiotic and Hormone free as these provide a distinct point of difference in the market and satisfy the majority of consumer demands for organic production with less restrictions, cost and regulations. Argyle recently announced a deal with Coles to supply branded beef.

Physical Chain

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The vertically integrated production process has bought the majority of Argyle's supply chain under their own control. Argyle breeds, grows and finishes their own Angus cattle on their own properties. A Manildra owned abattoir processes cattle and then Argyle markets the beef directly to restaurants, butchers, specialty retailers, Coles and export customers as a premium product. As with all grass-fed production the greatest challenge is producing cattle of consistent quality throughout the year.

<u>Communication and Collaboration</u>
The vertically integrated structure Argyle chose has initially limited the need for other partners in the value chain. However, demand for the company's beef has has grown beyond what they can produce on their own farms. To meet this increased demand Argyle has leveraged existing relationships with long standing stud bull customers to provide additional cattle. Argyle has regular contact with retail customers who manage relationships with consumers. Argyle also regularly uses in store chefs to raise awareness amongst consumers of their products and gather consumer feedback.

<u>Governance</u>
Vertically integrating and taking control of the value chain limits the need for governance with external partners. Argyle pays a premium to suppliers and is highly selective whom they choose to partner with selecting long-standing stud customers and extended family.

<u>Where Argyle Builds Value</u>
Argyle builds value through the Angus genetics of their cattle, the natural production process that is almost organic, providing a consistent supply of high quality beef to customers and the branding of their product as premium high quality beef. The rest of the production process activities are essential steps that need to be done effectively and efficiently for Argyle to capture the value it has built.

Mulawarra Export Pty Ltd

Mulawarra has been exporting premium Australian beef since 1997 and the company aims is to provide the best quality product in each meat category. Mulwarra does not supply the domestic market. In 2006 Mulwarra started supplying certified grass-fed beef to customers in Asia and the Middle East. However, grass-fed beef is only 10% of Mulwarra's business. Mulwarra has developed its own accreditation scheme, which is 100% traceable to birth with suppliers audited annually. Mulwarra's premium products are Premium Grass Fed Black Angus and 100-120 day Grain Fed Beef.

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Physical Chain

Mulwarra has built strong relationships with its suppliers and customers and limits its direct involvement in the value chain to direct suppliers and customers. Mulwarra sources its beef from six processors in Queensland, NSW and Victoria who processors purchase and process cattle on Mulwarra's behalf. Mulwarra does not commit to the whole carcass and only purchases selected cuts from processors. These premium cuts are sold directly to hotels and restaurants in Asia and the Middle East. Maintaining consistency of supply with grass-fed beef has been a constant challenge, especially during the winter as most of their grass-fed product comes from southern Australia where winter pasture growth is limited. Mulwarra is increasing working with customers to have their beef branded on restaurant menus.

Communication and Collaboration

Mulwarra has developed very strong relationships with the processors who supply their beef. They believe the old model of trying to do everything is no longer applicable and have selected processors to work with whom they have complete trust in. This trust enables Mulwarra to rely on the processors to purchase and process cattle on their behalf. Mulwarra works consistently to build strong relationships with their customers to ensure they are getting the high quality beef they require. Mulwarra actively works with customers to obtain feedback from consumers. Relevant information is widely shared up and down the value chain with feedback provided all the way back to processors when relevant. To maintain trust Mulwarra is careful not to overcommit to customers.

Governance

Mulwarra pays premiums to ensure they remain the premier supplier of Australian beef. They also have close and well-established relationships built on trust that they used to manage supply. Mulwarra provides excellent service to their customers, the company spends a lot of time working with customers and quickly resolves any issues that may arise.

Where Mulwarra Builds Value

Mulwarra sources the best cattle from the best farms and the quality of the cattle processed for Mulwarra is a key area where value is added. The trust, cooperation and partnerships Mulwarra establishes with both processors and customers and the high levels of customer service is how Mulwarra captures that value.

Gralyn Santa Gertrudis

Gralyn run 250 breeding cows and around 500 head of grass-fed cattle in the high rainfall Lower Hunter Valley of NSW including a stud herd of 100 cows. As a small producer Gralyn have fewer options with limited bargaining power for selling their commercial cattle. Gralyn is MSA certified and has considered obtaining PCAS certification but is yet to do so. Gralyn does not consider organic production a viable option due to their high stocking rates and the presence of liver fluke.

Physical Chain

Gralyn breeds, grows and finishes cattle on their improved pastures when seasons allow. They have a number of dams they can irrigate from as well as the river. Finished cattle are sold direct to Nipponham owned Wingham Beef Exports and store cattle through local saleyards. Alternative direct selling options are the recently acquired JBS abattoir in Scone and the Teys abattoir in Tamworth. Stud bulls are sold to commercial and stud producers across Eastern Australia.

Communication and Collaboration

Gralyn operates in a position of high buyer power. Wingham emails the cattle-purchasing grid whenever prices change. However, the Wingham buyer never visits the property to view cattle and at times cattle can only be booked in weeks in advance. Wingham provides basic feedback on each beast slaughtered and the MSA gradings are all available online. Gralyn tries to maintain a good relationship with Wingham Beef Exports by not pulling cattle out at the last minute.

Governance

As a small producer Gralyn is essentially a price taker with few options but to accept the prices on offer. Wingham govern their supply chain primarily through price by upping prices to encourage producers to sell more cattle. In dry times there can be a 6-10 week wait to get cattle processed at Wingham, when cattle are booked in this long in advance there is no committed price.

Where Gralyn Builds Value

Gralyn produce high quality cattle that are well finished or sold as store cattle when pasture is not available. However, as a small producer Gralyn struggle to find a point of difference in the market that they can exploit. The stud herd has been where Gralyn has seen its ability to add value. As a small producer Gralyn also has greater challenges collaborating with processors.

Yalandra Fine Foods

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University of Tasmania
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Yalandra Fine Foods run 1100 breeders in Southern NSW and North Eastern Victoria. Yalanra's herd consists of 900 full blood Wagyu cows and 200 first and second cross Angus Wagyu cows. The herd has been especially bred to produce highly marbled beef from Australian grazing land to be sold into the domestic and export markets. Yalandra combines a number of strategies to generate value for the business. Yalandra finishes some cattle on a supplemented grazing production system where cattle are fed grain out in the paddocks along with pasture, combining the animal welfare, taste and natural production advantages of grass-fed with the increased growth rate and predictability of grain fed production. Yalandra has also vertically integrated some of its production by processing and retailing beef while the remainder is supplied to feedlots for the export market.

Physical Chain

Cattle are bred and grown on Yalandra's properties in and around the Victorian High Country. Steers are sold off to be grain finished and then sold on the export market. Non-pregnant heifers are finished on a pasture supplemented with grain to supply Yalnadra's retail arm, a butcher shop in Albury. All cattle for the shop are kept until at least two and a half years of age to ensure sufficient marbling. Cattle finished for the butcher shop are contact slaughtered the carcasses are hung for at least 14-28 days. Around 20% of Yalandra's production is sold through the butcher with the remainder going to the export market.

Communication and Collaboration

Yalandra manages the entire chain of the vertically integrated butcher shop side of the business themselves to eliminate the communication and collaboration issues within the beef industry. Yalandra has a solid relationship with the feedlot is sells steers to.

Governance

Vertically integrating and taking control of the value chain limits the need for governance with external partners.

Where Yalandra Builds Value

Yanadra builds value through the genetics of its cattle, which have been especially bred to optimise marbling from their pasture based production system. Wagyu is a premium breed that commands a significant market premium. Value is also build through the vertical integration of the retail side of the business. The natural production process that is almost organic, providing a consistent supply of high quality beef to customers and the branding of their product as premium high quality beef also adds value as does the aging of the carcass.

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Meat and Livestock Australia

Grass fed production has been and continues to be the major production system in Australia. However, grass-fed has not been seen traditionally as a premium product. Increasingly producers and processors are using grass-fed and the animal welfare, health and environmental aspects of it as a point of differentiation to attract market premiums. The largest markets for grass-fed beef are Europe, North America and the Australian domestic market. Grass-fed is less of a point of difference in Japan, Korea and the Middle East. EU quotas limit access to the European market for Australian producers.

Certified grass-fed is not necessarily a higher quality product or more consistent than uncertified grass-fed beef. However, the certification and marketing give consumers the confidence to pay a premium for certified beef.

Cooperation between farmers and processors in the Australian beef industry has been limited and is a potential area for improvement. There is generally limited trust between processors and producers.

Conclusion:

Improved cooperation and communication with value chain partners has the potential to increase value for participants in the grass-fed beef value chain. The Australian grass-fed beef industry is characterised by long production lead times, price uncertainty, low margins and a highly variable supply and quality of pasture, the primary input. The companies analysed in this paper show that collaboration and communication can create value and reduce uncertainty in the grass-fed beef industry through helping value chain participants to better manage the climatic and price uncertainty that characterises the Australian beef industry. Value can be created through improved collaboration between producers and processors as well as vertical integration. A market focused consumer driven approach is more prevalent with high value premium products such as grass-fed, organic and breed specific beef, where the requirement for a consistent product to meet consumer demands require better integration.

Greater trust and collaboration between processors, retailers and on to the consumer is needed to capture the value generated through certified beef production. This is especially so for creating value from the entire animal and not just the prime cuts. Improved communications and high levels of trust are vital for collaboration to be successful.

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University of Tasmania
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Interview, Nick Meara, Livestock Supply Chain Manager, ADFSC
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